

Proposed Orange County Sanitation District

Environmental Water Quality, Stormwater Management and Urban Runoff Policy

Should OCSD explore accepting controlled discharge of stormwater?

Summary Policy Statement

The Sanitation District will partner with storm water permittees to accept up to ten million gallons per day of dry weather urban runoff at no charge in order to improve water quality in streams, rivers and beaches as long as the constituents within the flow do not adversely impact the Sanitation District's worker safety, treatment processes, reuse initiatives, or permit compliance. The Sanitation District facilities are subject to significant flow increases during wet weather events and are not capable of accepting stormwater flow volumes.

Background

The Sanitation District's wastewater collection system is designed to be wholly separate from the region's stormwater systems, also referred to as storm sewers and/or storm drains. The Sanitation District implements a system-specific Sewer System Management Plan in compliance with the California Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ. In the Sanitation District's service area, most local sanitary sewer systems are owned by city municipalities and discharge into the Sanitation District-owned regional sewers. Similarly, many stormwater systems are also owned and maintained at the local level, referred to as municipal separate storm sewer systems or MS4 – publicly owned conveyances or a system of conveyances that are designed to collect/convey stormwater, are not combined with sanitary sewers, and not part of the sewage treatment works. Stormwater runoff is water generated from precipitation events that flows over land or impervious surfaces including streets, parking lots, and building rooftops – this water does not return to groundwater basins, because it does not soak into the ground. This runoff accumulates pollutants from transportation, construction, industrial, and residential sources that can include trash or other solid waste, chemicals, oil, and other sediments. MS4 stormwater that is not captured for reuse, typically discharges into regional systems, most notably flood control channels (e.g. the Santa Ana River), that subsequently flow to the ocean and are regulated by the National Pollutant Discharge Elimination System (NPDES) that also regulates the Sanitation District's discharge to the ocean.

Due to the design and operation of local and regional sanitary sewers, there is not system capacity to allow 'wet weather' stormwater discharges to the sewer. Excessive flows into the sewer beyond its design capacity can lead to sanitary sewer overflows (also called SSOs), spills, and potential sewage backups. The Santa Ana River can provide massive storm-flow capacity at approximately 22,000 cubic feet per second (cfs) of water, and the Delhi Channel at 325 cfs, as compared to the peak wet weather flow for both the Sanitation District Plant Nos. 1 and 2 combine to less than 1,000 cfs – much of which is utilized for sanitary sewer service at all times. During 'dry weather', stormwater systems collect flow from 'dry weather urban runoff' activities, such as residential or industrial use, irrigation, water released from previous precipitation, among others. Most sanitary sewer systems are gravity draining, that is, most non-industrial facilities passively drain to the sewer and do not typically take action to commence discharge of

wastewater. As a result, it's important that facilities are constructed in such a way that they will not drain active stormwater or urban runoff flow to the sewer, especially during rain. Additionally, stormwater best management practices (BMPs) typically dictate that the generation of contaminated stormwater should be mitigated through proper facility design including berms and grading.

The Sanitation District's Wastewater Discharge Regulations Ordinance, which sets quality standards and requirements for facilities discharging to the Sanitation District, includes language to prohibit sewer users from discharging groundwater, stormwater, surface runoff, or subsurface drainage to the sewer without written authorization or a permit issued for such a purpose. In addition to the concerns related to insufficient capacity in the Sanitation District's sewer collection system, there is a concern that uncontrolled discharge to the sewer from these types of systems can introduce pollutants that may cause issues in the Sanitation District's treatment and reclamation plants, discharge to the ocean, or affect the agency's ability to recycle water or reuse biosolids. The Sanitation District's Ordinance was recently revised to clarify these restrictions and include a prohibition on drainage from non-domestic surface and floor drains to address these types of uncontrolled discharges.

However, given the public health and environmental protection issues that may arise from runoff-carried pollutants being transferred into the Sanitation District's coastal beaches and waters, in April 2000 the Sanitation District initiated a permitting program to assist in the economical and practical control of these pollutants during dry weather conditions.

Following the Sanitation District's sponsored legislation (AB 1892), the Sanitation District's charter was amended to authorize the Board of Directors to adopt Resolution No. 00-04 establishing a dry season urban runoff policy that allowed local agencies to obtain a Dry Weather Urban Runoff Permit to discharge to the Sanitation District. Agencies could apply for this permit type where there was not an economically or practically feasible alternative (i.e. discharge to storm drain, reclamation/reuse, etc.) to discharging dry weather urban runoff to the sewer, and the discharger met other conditions including complying with the Sanitation District's Wastewater Discharge Regulations Ordinance.

In September 2000, the Sanitation District modified the Dry Weather Urban Runoff Policy (Resolution No. 00-22) to cap discharges received to ten (10) million gallons per day (mgd). Furthermore, the policy revision established the waiving of fees associated with the program until discharges exceeded four (4) mgd, or until the policy underwent future revisions. There were a number of other modifications to the policy that added facility and compliance requirements for Dry Weather Urban Runoff permittees.

The Sanitation District Board Resolution No. 01-07, adopted in March 2001, added language to the policy clarifying conditions in which the Sanitation District would and would not be indemnified against liability associated with diversion systems. Indemnification is a critical component of Dry Weather Urban Runoff agreements necessary to address the risks posed to the Sanitation District associated with water quality, flooding, trash, infrastructure damage, and other concerns. In June 2013, the Sanitation District's current policy was established when Resolution

No. 13-09 was adopted. This included a revision where upon reaching a dry weather urban runoff influent rate of 9 mgd, the Sanitation District will take action to reevaluate the policy.

In addition to Dry Weather Urban Runoff Permits, the Sanitation District's Ordinance allows for normally prohibited wastes such as groundwater, stormwater, surface runoff, and subsurface drainage to be discharged to the Sanitation District as authorized through a Special Purpose Discharge Permit or written authorization from the Sanitation District; only when no alternate method of disposal is reasonably available or to mitigate an environmental risk or health hazard.

The Dry Weather Urban Runoff and Special Purpose Discharge permit programs are intended to assist in the protection of public health and the environment by routing contaminated discharges into the Sanitation District's treatment and reclamation plants. For example, the toxic amounts of selenium in the Upper Newport Bay Watershed have resulted in regulatory requirements to remove selenium loadings from upstream creeks and channels to protect downstream aquatic life. For dry weather urban runoff discharges, the Sanitation District is able to accommodate certain waste streams that mitigate these hazards. However, the Sanitation District treatment and reclamation plants also have limitations on the loading of pollutants that can be discharged to them – particularly because traditional sewage treatment plants are not designed to remove toxic pollutants, but are designed to remove the conventional pollutants typically found in wastewater generated from normal sanitary uses. The Sanitation District's Ordinance dictates that permitted users, such as Dry Weather Urban Runoff or Special Purpose Discharge users, must comply with numeric effluent limit standards for toxic pollutants. Continuing the example from above, discharges must meet a selenium effluent limit of 3.9 milligrams per liter (mg/L), a derived value based on the compliance standard, the Sanitation District is held accountable in order to reuse biosolids. In this example, the Sanitation District may choose to issue a permit to mitigate a public health or environmental concern, but must do so in such a way as to also address the potential impact on the Sanitation District's plants and its reuse initiatives – with permit numeric limits and conditions.

Current Situation

As of June 2019, the Sanitation District maintains 21 active Dry Weather Urban Runoff Permits for diversions owned and operated by the City of Huntington Beach, the City of Newport Beach, OC Public Works, Irvine Ranch Water District, and a LLC responsible for the areas in and around Pelican Point community. For the June to December 2018 reporting period, the Sanitation District received an average of 1.03 mgd from these facilities, well below the current ten (10) mgd policy cap and nine (9) mgd action threshold. Since the program's inception in 2000, the Dry Weather Urban Runoff Program has treated 9.4 billion gallons of dry weather urban runoff. The success of this program is captured succinctly in reviewing the Heal the Bay 2018-2019 Beach Report Card. Heal the Bay is an environmental non-profit organization focused on coastal water and watershed quality, and reported that 92 percent of beaches in Orange County received an 'A' rating during summer dry weather conditions – some the Sanitation District -service area beaches made the report card 'honor roll' with an A+ rating. It should be noted that this overall rating is negatively impacted by south orange county beaches that are not in the Sanitation District's service area.

Both the permitted Dry Weather Urban Runoff users and the Sanitation District staff collect samples from Dry Weather Urban Runoff facilities (during dry season discharge) on a semi-annual basis to evaluate compliance with pollutant limits established in the Sanitation District's Ordinance.

Periodically, the Sanitation District works with other organizations and industries that have intentionally or unintentionally captured stormwater or runoff on-site and seek guidance on disposing of the water. The Sanitation District may authorize such a discharge request where: there is adequate capacity, wastewater meets applicable effluent discharge standards, there is no practical alternative method of disposal, and the wastewater is captured and held until it can be released to the sewer apart from a high-capacity or storm event. The Sanitation District can utilize written authorizations, special conditions on an existing wastewater discharge permit, or a Special Purpose Discharge Permit – issued for planned short-or-long-term discharges. In other instances, the Sanitation District has observed unauthorized stormwater connections to the sewer during routine inspections of facilities and worked with the dischargers to mitigate these to prevent potential overflow conditions.

The assistance the Sanitation District provides to local agencies, businesses, and other industries in providing an alternative for stormwater or runoff disposal (where acceptable through an Special Purpose Discharge Permit or written authorization) is not included in the ten (10) MGD allowance under the Dry Weather Urban Runoff program, and demonstrates the Sanitation District's commitment to be a community partner in local water resource policy.

Key Issues for the Future

Under the current policy, the Sanitation District has the capacity to accept additional dry weather urban runoff flows (up to 10 mgd), however, this allotted capacity is not typically the limiting factor in increasing the volume of runoff diverted to the Sanitation District. As Dry Weather Urban Runoff diversion projects are initiated and funded at the local municipality level, capital support for such projects can be limited. Without funding and operational support from a public agency that has jurisdiction and authority over surface water runoff and wastewater, this water cannot be diverted.

Diversion systems must be pumped (not gravity-fed) into the Sanitation District's collection system to ensure the necessary level of control. Furthermore, diversions cannot be implemented just anywhere. In order for the Sanitation District to accept this dry weather runoff water, the supporting sewer hydraulic capacity and infrastructure must already be in place at the specific location where the gravity diversion exists. Otherwise constructing new the Sanitation District facilities to convey diverted waters would require a significant capital investment from the Sanitation District and its rate-payers. In short, acceptance of dry weather runoff must be evaluated based on the site-specific capacity of the Sanitation District's collection system, i.e. the hydraulic capacity of a specific interceptor/sewer trunkline. In addition, where the intention is to also recycle this runoff water as well as divert it from the Sanitation District's coastal beaches and waters, it must be routed to the Sanitation District's Plant No. 1 facility in Fountain Valley where it can discharge to OCWD's Groundwater Replenishment System (GWRS). At present, the Sanitation District's Plant No. 2 facility does not discharge wastewater to GWRS for recycling, and the majority of existing DWUR facilities discharge to Plant No. 2. The Sanitation District is working to divert the majority of Plant No. 2 influent wastewater to GWRS, however, the expected

completion date of this project is not until 2023. It should be noted that the recycling capacity of GWRS is not unlimited and the plan to divert wastewater from Plant No. 2 is expected to provide the near maximum level of influent to GWRS. Therefore, the Sanitation District is not in a position to accept additional wastewater for recycling, and the notion that stormwater is necessary to augment GWRS influent is not a valid assumption.

Given the above conditions, to expand the current programs to a larger-scale stormwater/rain-event capture and discharge program, means an investment for stormwater-authority agencies to build water storage systems in addition to existing or new diversion systems.

The regional benefit for such an initiative would be the increased capture and recycling of water that would otherwise be discharged to the ocean. The potential risk to the Sanitation District and its reuse initiatives from pollutants in stormwater and runoff would be directly impacted by our agency's future ability to control these wastes – that is permit, inspect, and monitor discharging facilities, and when warranted – enact enforcement to ensure compliance with the Sanitation District's Wastewater Discharge Regulations Ordinance. To protect the Sanitation District, this means issuing stringent requirements on discharges or suspending a discharge when an existing or potential sewer user does not meet a compliance obligation. Moreover, the Sanitation District will only be able to accept stormwater and runoff discharges that can be captured and held beyond storm events, and where that water can be adequately evaluated before being released for discharge into the Sanitation District's system.

The financial impact for the Sanitation District would translate to capital and operational costs where the Sanitation District is involved in the construction and maintenance of facilities to support these diversion systems. In addition, a larger-scale stormwater/rain-event capture and discharge program most certainly will require an investment in additional the Sanitation District staff in the workgroup that oversees the current permitting programs.

The larger question, beyond the scope of this white paper, is to evaluate at a regional level whether stormwater capture from a rain event will provide an additional source of water significant enough to offset the costs to capture this water and temporarily store it until it can be reused, including the associated infrastructure, staff, and other public resources this would require; and considering the intrinsic restrictions of the current sewer system, GWRS limitations, and the potential risks posed to the Sanitation District's existing water and biosolid reuse initiatives.

Initiatives to Support Progress Toward the Policy Goal

In accordance with Resolution No. 13-09, the Sanitation District intends to continue accepting up to ten (10) million gallons per day of pumped dry weather urban runoff diversion where existing conveyance capacity exists, and the constituents of the flow will not adversely impact the Sanitation District. The Sanitation District also intends to continue working with industries, agencies, and other facilities to offer alternatives to stormwater and runoff disposal through special purpose discharge permits or other written authorization in accordance with the Sanitation District's Ordinance, where doing so does not negatively affect the Sanitation District's operation or compliance with local, state, and federal regulations, and wastewater can be held for evaluation prior to discharge.

Additionally, to act as a regional partner in resolving issues associated with disposing of and reusing stormwater, the Sanitation District intends to work with local jurisdictions to determine the feasibility of regional wet weather runoff capture, storage, and use projects.

Initiative: Issue dry weather urban runoff connection permits up to a total of ten million gallons per day to other service area local agencies to accept pumped dry weather urban runoff flows where existing conveyance capacity exists, and the constituents of the flow will not adversely impact the Sanitation District.

Initiative: Continue working with industries, facilities, agencies, and local jurisdictions that have authority over stormwater or surface water runoff to determine the feasibility of regional wet weather runoff capture, storage, and use projects or offer alternatives to stormwater and runoff disposal through permits or other written authorization. The Sanitation District will promote responsible stormwater utilization and sewer protection, where doing so does not negatively affect the Sanitation District's operation or compliance with local, state, and federal regulations, and wastewater can be held for evaluation prior to discharge.

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