



January 21, 2022

The Honorable Holly J. Mitchell, Chair and
The Honorable Janice Hahn, Fourth District
Los Angeles County Board of Supervisors
822 Kenneth Hahn Hall of Administration
Los Angeles, CA 90012

Dear Chairwoman Mitchell and Supervisor Hahn:

**Response to January 3, 2022 Letter Requesting Information
about 12/30/2021 Carson Sewer Collapse and Wastewater Spill**

Thank you for your January 3, 2022 letter expressing great concern for the sewer collapse and wastewater spill that occurred in the City of Carson on December 30, 2021. I would like to begin by stating that I deeply regret that this sewer system overflow (SSO) occurred, and the resulting impacts on the environment and residents of the City of Carson and Los Angeles County. I want you to know that we take our responsibility to protect public health and the environment very seriously, and that repairing the damaged sewer and ensuring the health and safety of residents is our highest priority. To that end, Los Angeles County Sanitation Districts (Districts) staff mobilized an emergency response team quickly and from the outset have worked around the clock to end the SSO, repair the damaged sewer, listen and respond to residents' concerns, clean up 212th Street, monitor water quality, and communicate with regulatory agencies, the City of Carson and other stakeholders. The information requested in the January 3rd letter is provided below and in Attachments 1-4. Per your request, I am available to attend the upcoming meeting of the Board of Supervisors on January 25, 2022 to provide a presentation about this event and respond to any questions that you and the other Supervisors may have.

Response Summary

1. Districts' Incident Report Including Response Time

Refer to Attachment 1 for the 15-day certified final report submitted on January 15, 2022 to the State Water Resources Control Board as required per Order No. 2006-0003, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (State Order). This report provides a detailed incident report with pictures.

In the event of an SSO, the Districts are required to comply with requirements in the State Order as well as SSO provisions in the Joint Water Pollution Control Plant NPDES Permit Order No. R4-2017-0180 (NPDES Permit). These permits require reporting to the State Water Resources Control Board via the California Integrated Water Quality System (CIWQS) and to the Los Angeles Regional Water Quality Control Board (Regional Board), as well as the California Office of Emergency Services (Cal-OES). The Districts also provide notifications to local public health departments, the Los Angeles County Office of Emergency Management and the Los Angeles County Department of Public Works (Public Works). Table 1 provides a timeline summary of the Districts' notifications to these state, regional and local agencies of the SSO. Numerous additional contacts were made with staff at public health agencies and the Los Angeles Regional Board to provide updates on the SSO and response-related activities.

2. Immediate Plans to Address the Incident

The Districts have initiated two projects to specifically address the sewer collapse that occurred on December 30, 2021 and sewer conditions in the vicinity of the collapse. In addition to an emergency project to address the sewer collapse (Project 1), from January 4-7, 2022, the Districts conducted post-storm inspections of the sewer upstream and downstream of the collapsed reach. Utilizing closed-circuit television (CCTV) inspection equipment, approximately 3,900 linear feet of sewer was inspected to look for any change in conditions since the last inspection. Prior to these inspections, these reaches of the sewer were inspected in November and December 2021, with no observations that would be indicative of a risk of immediate failure. Based on the recently completed inspections, the Districts identified the need to implement emergency response and repair measures as described below.

Project 1 – 216th Street Trunk System Emergency Rehabilitation – Part I (Slip Lining) This project involved the restoration of the sewer reach that collapsed and rehabilitation of a portion of the immediate downstream reach of sewer to restore its structural integrity directly beneath an existing commercial building. Project 1 was completed on January 13, 2022, and the collapsed sewer reach has been completely restored. The Districts rehabilitated the collapsed sewer and a portion of the downstream reach of the sewer through a process known as “slip-lining.” In “slip-lining” a fiberglass reinforced plastic (FRP) pipe is inserted within the original pipe and then the annular space between the FRP pipe and original pipe is filled with grout. From the original location of the collapse, approximately 200’ of 42” diameter FRP was slip-lined within the original 48” diameter concrete pipe.

Project 2 – 216th Street Trunk System Emergency Rehabilitation – Part II (CIPP Lining) This project involves the rehabilitation of 814 linear feet of concrete pipe between Manholes 8 463 and 8 645, which was found to be at risk of failure. Refer to Attachment 2 for a figure showing manhole locations. An additional 22 linear feet of concrete pipe between Manholes 8 477 and 8 645 will also be lined to fully rehabilitate existing unlined concrete pipe upstream of Project 1. The method of sewer rehabilitation for these reaches will be through utilization of a cured-in-place pipe (CIPP) liner. CIPP lining requires all sewage flow within the line to be bypassed. A temporary bypass pumping system will be installed to route sewer flows around 814 linear feet of the sewer to be lined. The CIPP liner material has been ordered, with delivery anticipated by late January or early February. Once the liner material is received on-site, repair activities are anticipated to take several weeks, with likely completion of this project by the end of February 2022.

Staff continues to evaluate other sewer reaches in the vicinity of the sewer collapse to assess other potential repair needs.

3. A Detailed Account of Impacts on Carson Residents and Assistance Offered and Communication Protocols

An important aspect of the Districts’ SSO response protocols is to assess the extent of the overflow and its potential impacts to public health. This process involves determining if any private property owners/residents may be exposed to raw wastewater, making direct contact with property owners/residents who have been or may be directly affected by the overflow, and identifying prudent measures to be taken by property owners/residents to prevent contact with the overflow, such as restricting vehicle traffic when possible and cordoning off areas to keep the public from being in contact with raw wastewater. In this instance, Districts’ staff were on site throughout the event and during the following week and went door-to-door to talk to impacted residents (approximately 17 homes) numerous times (see Attachment 3). In addition, in cases where an overflow affects pervious surfaces, the Districts perform clean up in accordance with its *Procedures for Clean-Up Activities After Sewage Spill to Pervious Land Areas*. Private properties impacted by overflows or backups within the Districts system are cleaned up by a professional restoration company dispatched by the Districts. The Districts’ Insurance and Claims Coordinator handles claims for property damage, but no claims have been made for property damage.

The Districts are providing several types of assistance to residents to address the impacts of the SSO, in addition to cleaning the street, sidewalk and driveways. Assistance to residents was offered three times between January 1st and 6th, including offering several options for washing cars, replacement of landscaping in the parkway, and replacement of topsoil in the planter on the north side of 212th Street with mulch.

In addition to direct communication with the residents in the vicinity of the SSO, the Districts posted updates to its website and social media channels daily (www.lacsd.org/sewagespill) throughout the emergency response period so that residents of the broader community in Carson and surrounding areas would have easy access to the latest information about the incident. LACSD's website has a translation feature that allows website text to be instantly translated into dozens of languages that may be selected by the user. A presentation about the events was made to the Carson City Council on January 4, 2022 in order to provide an overview to the City Council and residents of the City of Carson, and a second presentation was made on January 18, 2022.

4. Health and Environmental Impacts, Including Odors

Overall Water Quality Monitoring -- The State Order and NPDES Permit require us to provide an assessment of the impact of the SSO to public health and the environment. On December 31, 2021, Districts staff began monitoring water quality at 15 locations that included the wastewater at the SSO location, storm drains, Torrance Lateral, Dominguez Channel, and at numerous nearshore and offshore locations for bacteriological indicators (total and fecal coliform, enterococcus and *E.coli*), metals and ammonia (a typical indicator of wastewater), in addition to visual observation of biological conditions. Later, five additional locations were added for a total of 20 locations monitored as part of this SSO response. Dissolved oxygen monitoring was also initiated in the Dominguez Channel on December 31, 2021 with levels observed in the normal range as of monitoring conducted on January 14, 2022. SSO related monitoring ceased at four Dominguez Channel locations on January 7, 2022 due to water quality returning to normal levels reflective of background conditions. Monitoring ceased at eight shoreline and offshore locations on January 5, 2022 and at four more shoreline and offshore locations on January 7, 2022 due to compliance with the Basin Plan Marine Objectives. Based on preliminary data, ammonia was not detected at any station monitored nor were adverse biological observations made. A final report will be submitted to the Regional Board by February 5, 2022.

Beach Closures – In California there are four types of warnings about beach water conditions: postings, closures, rain advisories, and permanent postings. A beach closure is a notice to the public that there has been a sewage discharge that is affecting the beach area. Closures are put in place immediately after a sewage spill is reported that may affect the beach. The closed beach area can be reopened when water samples meet state bacteriological standards. Rain advisories are pre-emptive warnings that people should avoid swimming in ocean waters during a rain event and for three days after rainfall ceases, because rainwater often carries large amounts of bacteria from a variety of sources to the ocean. Because the SSO occurred during a rain event, rain advisories were in place at all Los Angeles County beaches until at least noon on January 1, 2022. After LA County Department of Public Health was notified of the SSO on December 30, 2021, a closure notice was issued for Cabrillo Beach, Point Fermin Beach, White Point Park Beach, Royal Palm State Beach, and Rancho Palos Verdes Beach. On December 31, 2021, the beach closure was updated to include all Long Beach City and LA County beaches up to Rancho Palos Verdes Beach. Orange County Public Health also closed two beaches from December 30, 2021 to January 4, 2022. On January 3, 2022, LA County Public Health lifted the closure for Portuguese Bend in Rancho Palos Verdes, White Point at Royal Palms Beach, Wilder Addition Park at Point Fermin and Outer Cabrillo Beach in San Pedro, while Inner Cabrillo Beach in San Pedro remained closed until January 5, 2022. Long Beach Public Health lifted their beach closures on January 5, 2022 as well.

Odors – Hydrogen sulfide is an odorous compound that is commonly associated with raw wastewater. Ongoing air monitoring for hydrogen sulfide by South Coast Air Quality District (SCAQMD) at the 213th and Chico Air Monitoring Station in the vicinity of Dominguez Channel showed no difference in hydrogen sulfide levels before and after the SSO (see Attachment 4). This is the same parameter that was

associated with the prolonged odor event in Fall 2021 in the vicinity of Dominguez Channel. To assess if there were any delayed or ongoing impacts, on January 6, 2022, the Districts started monitoring for parameters that are being investigated by Public Works as part of the Fall 2021 odor event in order to assess if there is a difference before and after the SSO. In coordination with Public Works, the Districts have collected samples upstream and downstream of the Torrance Lateral discharge into Dominguez Channel and are analyzing for parameters at 4 locations along the Dominguez Channel consistent with Amended Order No. R4-2021-0132-A01 issued to Public Works on November 24, 2021.

5. A Detailed Account of the Communications Protocols Followed

Refer to Item 3 above.

6. The Installation date of the Pipe and the Estimated Life Span

The 216th Street Trunk Sewer was originally constructed in 1930 to convey wastewater from the Main Street Pumping Plant to a larger District sewer that conveys wastewater downstream to the Joint Water Pollution Control Plant. The Main Street Pumping Plant serves the northwest portion of Carson, a portion of the City of Compton, and a portion of Unincorporated Los Angeles County north of Carson. Prior to the construction of the Harbor (110) Freeway in 1960, the sewer continued further to the west and discharged to a sewer located in the intersection of Vermont Avenue and Carson Street in Unincorporated Los Angeles County. To accommodate construction of the Harbor Freeway, the portion of the sewer crossing the freeway was abandoned and the 216th Street Relocation Trunk Sewer (Relocation Sewer), which includes the reach that was part of the sewer collapse, was constructed in 1960 along the east side of the freeway from Carson Street extending approximately one mile south to 228th Street. This Relocation Sewer is comprised of approximately 4,530 linear feet of 48-inch reinforced concrete pipe and is located entirely within the City of Carson. The typical lifespan of unlined reinforced concrete pipe is between 50 and 100 years, depending on operating conditions.

7. Plans to Address Aging Infrastructure and Apply for State and Federal Infrastructure Funding

216th St Replacement Sewer Project -- The Districts identified the need to replace the 216th Street Trunk Sewer in 2015 and have been working on a 3-phase project with an estimated cost of over \$21 million to accomplish this. Phase 1 was completed in 2020 and consisted of the construction of approximately 2,500 feet of 48-inch Fiberglass Reinforced Plastic (FRP) pipe. The Phase 1 project increased the hydraulic capacity of the sewer system and allowed for approximately 2,500 feet of the original sewer constructed in 1930 to be removed from service. Phase 2 is in construction and involves installation of approximately 5,700 feet of 54-inch diameter FRP pipe. Phase 3 is currently in design and will rehabilitate approximately 3,000 feet of the downstream 48-inch sewer using CIPP lining, with construction estimated to be complete by October 2022. Rehabilitation of this part of the sewer is required to allow a small amount of wastewater from direct connections to be routed through the system. The Districts are reviewing existing plans to determine if there are opportunities to accelerate completion of the Phase 2 and Phase 3 projects.

Collection System Rehabilitation and Replacement and Operations and Maintenance (O&M) Programs --

The Districts maintain a Rehabilitation and Replacement Program to: 1) ensure the timely repair of sewer facilities in imminent danger of failure or blockage; 2) provide for the long range rehabilitation or replacement of obsolete or aging assets; and 3) improve system performance and reduce spills caused by pipe defects or mechanical failures. The Rehabilitation and Replacement Program uses data from the Districts' CCTV inspection and flow monitoring programs, as well as feedback from regular maintenance activities, to prioritize and schedule the rehabilitation and replacement projects. A Wastewater Collection Systems Capital Improvement Plan Report is prepared annually to summarize the status of all damaged, deteriorated, or near capacity sewerage facilities. The report includes prioritization of projects based on condition severity using a Priority Rating system. Priority Rating 1 and 2 are typically recommended for repair within 5 and 10-year time periods, respectively. Priority 3 sewers are monitored. Projects to address the repair needs for sewer or pumping plant assets for each Sanitation District are then budgeted in the

Capital Improvement Plan (CIP). The CIP is updated annually and identifies short-term and long-term projects which are scheduled within the next 20 years based on their priority rating.

As far as implementation of this program goes, over the past ten years (FY2011-12 – FY2020-21), the Districts invested approximately \$236 million in 71 sewer construction projects throughout our system. An additional 40 projects are scheduled for award in FY21-22, FY22-23 and FY23-24 for an estimated value of \$183 million.¹ These figures are for capital projects, and do not include annual Operations and Maintenance (O&M) program activities. The Districts currently utilize a Work and Asset Management System to schedule and document maintenance and repair of its wastewater collection system. The O&M Program includes collection system O&M, pumping plant O&M, odor and corrosion control activities and collection system monitoring using tools such as CCTV Inspections, physical inspections and flow monitoring.

External funding -- With respect to pursuit of external funding, including the Infrastructure Investment and Jobs Act (IIJA), the Districts are:

- a. Requesting that the State Water Resources Control Board expedite execution of a funding agreement for the 216th St Replacement Trunk Sewer Phase 2 Project and provide grants and/or loan forgiveness for as much as possible of the pending State Revolving Fund loan using either IIJA or FY2022 grant funding for wastewater infrastructure appropriated by the State Legislature;
- b. Researching additional funding opportunities from IIJA and state funding sources;
- c. Planning to potentially submit a FY2023 funding request for Congressionally-Directed Spending and a budget request to Members of the State Legislature;
- d. Identifying high priority upcoming capital projects that may qualify for state or federal funding; and
- e. Submitting applications for state or federal funding opportunities for qualified upcoming projects.

8. Recommendations to Prevent Similar Incidents from Occurring in the Future

The Districts are reviewing this incident in its entirety and will develop and implement changes to our operations based on “lessons learned” that will help us improve our efforts to maintain the integrity of our collection system infrastructure to prevent sewer failure and overflows in the future, as well as improve our response to any incidents that do occur. A key component of that effort is a review of the causes of this sewer failure and incident response by a third party. To that end, the Districts have retained GHD, an international engineering firm, to perform an independent external audit of the December 30, 2021 SSO. The audit, which has already begun, will include an investigation into the physical causes of the failure, the history of inspections and plans for replacement of the line, and the Districts’ response to the overflow. The audit will also include a programmatic review of the Districts’ sewer maintenance and inspection programs, Capital Improvement Program, build-over approval process, and emergency procedures relative to industry standards. The results of the audit will include recommendations for improving the Districts’ practices and policies. The final report from the audit will be made available to the public and the Districts will share this report and our plans for moving forward with you.

Please contact me if you have any questions about this report.

Very truly yours,



Robert C. Ferrante

¹ These figures do not include the Joint Water Pollution Control Plant Effluent Outfall Tunnel Project (also known as the Clearwater Tunnel Project), for which a construction contract for \$630 million was awarded in FY2018-19.

RCF:MT:djm

Enclosures

cc: The Honorable Hilda Solis, District 1
The Honorable Sheila Kuehl, District 3
The Honorable Kathryn Barger, District 5
Chairperson Cathy Warner and Directors, District 2
The Honorable Lula Davis-Holmes, Mayor, City of Carson
Celia Zavala, Executive Officer, Board of Supervisors
Fesia Davenport, LA County Chief Executive Officer
Kevin McGowan, Director, LA County Office of Emergency
Management
Mark Pestrella, Director, Department of Public Works
Barbara Ferrer, MD, Director, Department of Public Health

Figure 1. Collapse and spill sites



Figure 2. Path of spill



Table 1. Timeline of Notifications to State, Regional and Local Agencies¹

Time	Agency	Notification
12/30/21 2:51 pm	The Los Angeles County Department of Public Health (DPH), Los Angeles Regional Water Quality Control Board (LA Regional Board), City of Long Beach Department of Health and Human Services, City of Vernon Health and Environmental Control, Pasadena Public Health Department; Los Angeles County Department of Public Works; and several other agencies and non-governmental organizations	Initial email notification that Districts received a report from the public at 1:52 pm that an SSO was in progress at 212 th St. and Moneta Ave in City of Carson and that Districts personnel would investigate.
12/30/21 3:05 pm	LA County Operator	Initial telephone notification of SSO. LA County Operator transmits notification information to DPH.
12/30/21 3:41 pm	Cal-OES	Initial notification of SSO; estimated volume 100,000 gallons & SSO still ongoing.
12/30/21 Several calls between 4 pm and 7:30 pm	DPH	LACSD staff had direct communication with DPH staff regarding SSO status.
12/30/21 7:31 pm	Cal-OES	Update: SSO caused by sewer collapse; estimated volume 3 million gallons & SSO still ongoing.
12/30/21 7:48 pm	LA County Operator	Update: SSO caused by sewer collapse; estimated volume 3 million gallons & SSO still ongoing.
12/31/21 2:41 pm	LA Regional Board	24-hour report: updated information about location; estimated volume 7 million gallons & SSO still ongoing
12/31/21 3:07 pm	Cal-OES	Update: estimated volume 8 million gallons; SSO ongoing.
12/31/21 3:17 pm	LA County Operator	Update: estimated volume 8 million gallons; SSO ongoing.
1/1/22 12:08 pm	Cal-OES	Update: SSO volume was reported to be 8.5 million gallons and the SSO stopped at approximately 8:45 p.m. on December 31, 2021. Note: after the 12:08 notification to Cal OES, the SSO end time was determined to be approximately 9:38 p.m. on December 31, 2021 based on updated field observations.
1/1/22 12:10 pm	LA County Operator	Update: SSO volume was reported to be 8.5 million gallons with 100,000 gallons recovered and the SSO stopped at approximately 8:45 p.m. on December 31,

¹ Please note that this table includes email and telephone notifications by Districts' staff, however it does not include many additional email and telephone interactions during and after the SSO between Districts staff and staff at the LA Regional Board, the local public health agencies (LA County, Long Beach and Orange County), and LA County Public Works.

		2021. Note: after the 12:10 notification to the LA County Operator the SSO end time was determined to be approximately 9:38 p.m. on December 31, 2021 based on updated field observations.
1/4/22 3:17 pm	State Water Resources Control Board	Submitted Draft Category 1 SSO Report to CIWQS
1/6/22 2:55 pm	LA Regional Board	Submitted 5-day Preliminary Report
1/15/22 4:22 pm	State Water Resources Control Board	Certified Final Category 1 SSO Report submitted to CIWQS
2/5/22	LA Regional Board	30-day SSO Report due
2/14/22	State Water Resources Control Board	45-day SSO Technical Report due to CIWQS

Attachment 1

CIWQS Event ID No. 878549
216th Street Replacement Trunk
SSO December 30, 2021

On Thursday, December 30, 2021, at approximately 1:50 p.m., the Los Angeles County Sanitation Districts (LACSD) was notified of an active sanitary sewer overflow (SSO) from an LACSD sewer manhole at the intersection of West 212th Street and South Lynton Avenue in the City of Carson. A resident discovered the overflow at approximately 1:30 p.m. and contacted LACSD's Joint Water Pollution Control Plant (JWPCP) at approximately 1:50 p.m. JWPCP staff subsequently contacted LACSD's Wastewater Collection Systems (WCS) Superintendent of Operations and Maintenance who dispatched staff to the site to investigate. LACSD sewer maintenance staff immediately began coordinating emergency response activities. LACSD staff arrived on site at approximately 2:14 p.m. and observed wastewater flowing from the 216th Street Replacement Trunk Sewer at manholes (MHs) 08 0718 and 08 0719 at the intersection of West 212th Street and South Lynton Avenue, and MHs 08 0720 and 08 0721 at the intersection of West 212th Street and South Moneta Avenue into a catch basin located in the north side gutter of West 212th Street, at the north end of South Moneta Avenue (see Figure 1, Photos 1-3). LACSD staff immediately cordoned off each end of West 212th Street to keep the public away from the overflowing manholes, dispatched additional staff to assist with the emergency response activities, and began troubleshooting the cause of the SSO. Staff notified the LACSD Central Alarm Center and a notification email was sent at 2:51 p.m. on December 30, 2021 to provide initial notification of the overflow to the Los Angeles County Department of Public Health (LACDPH), Long Beach Health and Humans Services (Long Beach Health), Los Angeles County Department of Public Works (LACDPW), and the Los Angeles Regional Water Quality Control Board (Regional Board). California Office of Emergency Services (Cal OES) was notified by phone at 3:41 p.m. on December 30, 2021, and Orange County Health Care Agency (OCHCA) was notified at 9:20 a.m. on December 31, 2021.

Initially LACSD staff suspected that the operation of the Main Street Pumping Plant (MSPP), which pumps flow through force mains that discharge immediately upstream of the manholes that were overflowing (see Figure 1), was the primary cause of the SSO. Initial efforts by staff to investigate and troubleshoot the SSO focused on MSPP pumping operations, including turning down the speed of the pumps at approximately 2:19 p.m. to reduce the flow from the plant. At approximately 2:33 p.m., additional LACSD staff arrived at MSPP to assist with the troubleshooting of the plant. After determining that MSPP operation was likely not the cause of the SSO, it was suspected that a downstream blockage was causing the SSO, so at approximately 3:19 p.m. LACSD staff began checking downstream manholes for surcharge conditions in order to locate the blockage. At approximately 3:25 p.m., staff determined that MH 08 0463 located in West Carson Street just east of the I-110 Freeway (see Figure 1) was surcharged, indicating that the blockage was downstream of this manhole. Staff sought to check manholes further downstream, but had difficulty accessing the manholes immediately downstream of MH 08 0463 due to their locations in the back of private properties behind locked gates. At approximately 3:48 p.m., additional staff were dispatched to assist with locating the blockage. Staff checked MH D 0008, which is where the 216th Street Relocation Trunk ties into the larger Joint Outfall D – Unit 1C Trunk Sewer. This manhole was not surcharged, which indicated that the blockage was upstream on the 216th Street Relocation Trunk. At approximately 5:03 p.m., LACSD staff arrived at MH 08 0644 located approximately 30 feet east of the I-110 Freeway northbound off-ramp to 220th Street and discovered a sinkhole between MHs 08 0644 and 08 0476 along the 216th Street Relocation Trunk Sewer (see Photo 4). LACSD staff immediately cordoned off the sinkhole to

limit access to the site. The sinkhole was located approximately three-quarters of a mile downstream of the SSO location.

LACSD Wastewater Collection Systems (WCS) sewer inspection staff and Construction Management staff were immediately notified and were dispatched to the site of the sinkhole. Sewer inspection staff arrived onsite at approximately 6:33 p.m. and attempted to video inspect the sewer line by closed-circuit television (CCTV) from MH 08 0475 located approximately 725 feet downstream of the sinkhole. Sewer inspection equipment could only reach 20 feet upstream of MH 08 0475 due to mud and debris in the sewer, confirming that the sewer had collapsed between MHs 08 0644 and 08 0476. Sewer inspection staff also inspected 200 feet downstream of MH 08 475 to check conditions and found the sewer to be relatively clear of debris.

Construction Management (CM) staff arrived at the sinkhole site at approximately 5:35 p.m. and began to assess the needs for bypassing flow around the collapsed sewer and for clearing the collapse to restore flow in the sewer. Sewer bypass contractor Charles King Company (CKC) had already been contacted by CM at approximately 4:45 p.m. and was mobilizing crews to establish a flow bypass around the collapsed sewer. At approximately 7:33 p.m., CKC staff arrived onsite and began to plan for the bypass setup. Closure of the I-110 Freeway off-ramp was coordinated with both the California Highway Patrol and Caltrans to allow construction and bypass equipment to be safely delivered and set up. Soon after, CKC crews arrived with bypass pumping equipment and began setting up 6-inch lay flat bypass hoses in order to pump flow from MH 08 0644 just upstream of the blockage to MH 08 0475 which is approximately 750 feet downstream (see Photo 5). The lay flat hoses had to be set up along the I-110 Freeway embankment next to the soundwall through thick vegetation (see Photo 6). Darkness and wet conditions after the heavy rain slowed progress. A hole had to be cut in the freeway soundwall for the discharge hoses to reach MH 08 475 (see Photo 7), which is in an apartment complex parking area on the east side of the soundwall. Equipment for cutting the hole in the concrete wall was not initially onsite and had to be obtained late in the night. Due to the difficult terrain, it was impractical to set up a larger bypass pump and piping in a short amount of time that could bypass all of the flow, so it was necessary to set up multiple smaller pumps and piping.

At approximately 5:50 p.m., CM contacted construction contractor Lucas Builders, Inc. (LBI) that was working on an LACSD construction project very close to the sinkhole. This contractor did not have staff available to respond to the emergency. At approximately 6:15 p.m., CM contacted two other contractors, and W. A. Rasic Construction (WAR) was available to respond to the emergency. At approximately 8:00 p.m., WAR staff arrived onsite to coordinate excavation of the sinkhole area in order to clear the sewer pipe of soil and debris to reestablish flow in the sewer. WAR was able to borrow an excavator from LBI from their project near the sinkhole, which allowed WAR to start installing shoring at approximately 12:50 a.m. on December 31, 2021 and secure the sinkhole site by approximately 3:00 a.m. (see Photo 8). Efforts to install bypass pumps and to clear the sewer of soil and debris were conducted simultaneously. The pipe collapse was extensive and blocked all sewer flows. The excavator was used to remove a majority of the collapsed soil and debris. Once the soil was removed to a depth close to the pipe crown, a combination jetter-vacuum truck was used to remove the remaining soil to prevent further damage to the sewer (see Photo 9).

The first sewer bypass pump started operation at approximately 2:10 a.m. and the second bypass pump at approximately 2:40 a.m. on the morning of December 31, 2021. The MSPP began holding back flow at approximately 7:39 a.m., and soon after the SSO initially ceased due to this

reduction in flow¹. At approximately 8:50 a.m., a third bypass pump started operation and at approximately 9:00 a.m., a fourth bypass pump started operation. The bypass pumps each had approximately 1,020 gallons per minute (gpm) capacity, while peak dry weather flow at MSPP is approximately 6,000 gpm and flow was higher than normal due to inflow and infiltration into the sewer that was still occurring after the previous day's heavy rains². The initial four pumps and piping provided enough pumping capacity to manage low flow periods, but not the higher flow that typically occurs between 8:00 a.m. and 10:00 p.m. and was even higher than normal due to inflow and infiltration from the previous day's heavy rains. By approximately 10:00 a.m. MSPP was no longer able to hold back sufficient flow and the SSO restarted. With the four bypass pumps in operation, the SSO flow rate was reduced to the point that the entire overflow was contained to the north gutter of West 212th Street (see Photo 10).

With the overflow contained to the north gutter, LACSD staff proceeded to clean and flush the south side of West 212th Street including the affected sidewalks and driveway aprons during the day on December 31, 2021 while the overflow was still occurring (see Photo 11). All potable water used to clean and flush the impacted street, curbs, and gutter, was captured and returned to the sewer system. With the south side of the street cleaned, all residents had full access to their homes (the north side of West 212th Street is industrial property that has no access from West 212th Street).

Efforts to install additional bypass pumping capacity continued throughout the day on December 31, 2021 to fully stop the SSO. Tight site conditions presented challenges for installing more pumps (see Photo 12). There were only two 24-inch diameter manholes available to pull suction from for the bypass pumps³ and only one 24-inch diameter manhole to discharge into. With four pumps installed (two pipes per suction manhole and all four pipes into the same discharge manhole), there was not enough space to fit more suction pipes into the suction manholes⁴ (see Photo 13) and not enough space to fit more discharge pipes into the discharge manhole (see Photo 14). Initial expectations were that some flow could be restored in the sewer by the morning of December 31, 2021, but this became infeasible as more soil and debris were encountered in the pipe downstream of the sinkhole than was expected. LACSD staff worked with CKC to evaluate options for installing additional bypass pumping capacity, including replacing the smaller pumps with larger pumps and piping. Installing larger pumps and piping proved infeasible due to access issues and the challenging terrain along the alignment of the discharge piping. Ultimately it was decided that the suction and discharge piping for the four operational pumps would need to be modified in order to install four more of the smaller pumps. These piping modifications required extensive effort. A fifth bypass pump started operation at approximately 8:45 p.m., which was nearly enough to stop the SSO. The SSO rate decreased as sewer flows declined and by 9:38 p.m. on December 31, 2021, the SSO finally stopped. Three additional pumps and bypass

¹ The MSPP force mains discharge at MHs 08 0720 and 08 0721 at the intersection of West 212th Street and South Moneta Avenue where the SSO occurred (see Figure 1). Approximately 98 percent of the flow tributary to the SSO passes through MSPP. The sewers tributary to MSPP have a large amount of storage volume, which enables the plant to temporarily hold back flow by turning down the pump speeds.

² Even though the rain stopped during the evening of December 30, 2021, flow to MSPP was approximately 1,650 gpm higher than normal between 2:00 a.m. and 6:00 a.m. on December 31, 2021. This additional flow is attributed inflow and infiltration from the previous day's heavy rain.

³ MH 08 0644 is a large underground structure with access manholes on each end that were used as suction manholes. Both access manholes are designed as MH 08 0644 since they provide access to the same underground structure.

⁴ Initially 10-inch suction piping was used in order to maximize the capacity of the bypass pumps. This ultimately had to be reduced to 6-inch suction piping to fit suction pipes for all eight pumps.

pipings were installed later in the night to provide sufficient bypass pumping capacity for peak flow and redundancy in case of a pump failure (see Photo 12).

The wastewater that overflowed from MHs 08 0718, 08 0719, 08 0720, and 08 0721 traveled in street gutters and entered a single storm drain catch basin located at the intersection of West 212th Street and South Moneta Avenue (see Photo 3 and Figure 1). This catch basin flows to a belowground storm drain system that flows into the Torrance Lateral (a concrete-lined open channel). The Torrance Lateral flows into the Dominguez Channel southwest of the intersection of South Avalon Boulevard and East Dominguez Street in the City of Carson. The Dominguez Channel then drains to the Los Angeles Harbor and then to the Pacific Ocean. Upon becoming aware of the overflow on December 30, 2021, the LACSD WCS Manager contacted LACSD Reuse and Compliance staff at approximately 2:45 p.m. to develop a monitoring plan. It was determined that water quality sampling would not be safe to perform on December 30, 2021 due to heavy rain and resulting high flow in the channels, other than taking a source sample at the SSO location. Reuse and Compliance staff immediately developed a monitoring plan which was finalized and distributed to LACSD staff at 8:10 a.m. on December 31, 2021. Water quality sampling began on December 31, 2021 at 14 locations (in addition to the source sample location). Three offshore Long Beach monitoring locations were added on January 1, 2022, and two locations at the Torrance Lateral were added on January 4, 2022 and January 12, 2022. A total of 20 locations were monitored in response to the SSO (see Figure 2).

During the SSO on December 31, 2021, WCS staff used vacuum tanker trucks and combination jetter-vacuum trucks to recover some of the overflow from the SSO site at West 212th Street and South Moneta Avenue, and to divert some flow from the sewer at MH 08 0600 on the 216th Street Relief Trunk Sewer, located on South Figueroa Street, between 214th Street and West 215th Street. LACSD staff recovered seven vacuum tanker truck loads of 5,000 gallons each from the SSO site for a total of 35,000 gallons recovered and returned to the sewer system downstream of the sinkhole. LACSD staff and an emergency contractor TMC Transportation, Inc. also diverted 24 vacuum tanker truck loads of 5,000 gallons each and 10 combination jetter-vacuum truckloads of 2,000 gallons each from MH 08 0600 for a total of 140,000 gallons of wastewater diverted from the sewers tributary to the SSO site and returned to the sewer system downstream of the sinkhole. The recovery and diversion efforts resulted in a combined total of 175,000 gallons of wastewater that was prevented from entering the storm drain system.

Once the overflow had stopped, LACSD staff worked through the night of December 31, 2021 and the early morning of January 1, 2022 to clean and flush the remaining impacted street, curb and gutter areas on the north side of West 212th Street prior to sunrise (see Photo 15). Later in the morning on January 1, 2022 and into the afternoon, LACSD staff cleaned and flushed the impacted street, curb and gutter areas on the north side of West 212th Street again to ensure that they were fully clean. Approximately 750 gallons of potable water were used to clean and flush the impacted street, curbs and gutters, with all wash water captured and returned to the sewer system. Cleanup of the impacted street areas was completed at approximately 2:50 p.m. on January 1, 2022. Upon completion of the street cleanup, LACSD staff began work to flush the impacted storm drains starting with set up of containment where the storm drain empties into the Torrance Lateral, located east of East Dominguez Street, using sandbags to capture all storm drain flush water. At approximately 1:45 p.m., LACSD staff completed set up of the containment and proceeded to flush the storm drains with approximately 14,000 gallons of potable water (see Photo 16). All flush water was captured at the containment area and returned to the sewer system (see Photo 17). Then LACSD raked and vacuumed any residual sewer debris in the landscape area on the north side West 212th Street. Cleanup of the landscape area was completed at

approximately 5:00 p.m. All cleanup activities by LACSD staff were completed at approximately 5:55 p.m. on January 1, 2022.

Based on current information it is estimated that approximately 8,613,558 gallons of wastewater overflowed from MHs 08 0718, 08 0719, 08 0720, and 08 0721 between 1:30 p.m. on December 30, 2021 and 9:38 p.m. on December 31, 2021. The overflow volume was estimated using pump flow meter data from MSPP and the following data:

- The land area tributary to MSPP is 98.4 percent of the land area tributary to the SSO. Therefore, the total flow tributary to the SSO is approximately the flow rate from MSPP divided by 98.4 percent.
- The overflow stopped at 9:38 p.m. on December 31, 2021 when five bypass pumps were in operation and the total flow tributary to the SSO was approximately 5,100 gallons per minute. Therefore, the average flow per bypass pump was approximately 1,020 gallons per minute.⁵

This data was used to estimate the SSO volume for each distinct period of bypass pump operation (no bypass pumps, one bypass pump, two bypass pumps, etc.) as follows:

$$\text{SSO Volume} = \left[\frac{\text{Avg MSPP Discharge Flow Rate}}{98.4\%} - (\text{No. of Bypass Pumps} \times 1,020 \text{ gpm}) \right] \times \text{Minutes}$$

The “Average MSPP Discharge Flow Rate” is during each time period that a specific number of bypass pumps were in operation. The “Minutes” are the amount of time that a specific number of bypass pumps were in operation. This equation was used to estimate what the SSO volume would have been without any diversion of flow. Then the 140,000 gallons that were diverted from the sewers tributary to the SSO were subtracted to determine the total SSO volume. LACSD staff was able to recover approximately 35,000 gallons of the SSO volume and return it to the sewer system. Thus, approximately 8,578,558 gallons reached the Dominguez Channel.

LACSD provided initial notification of the SSO to the Los Angeles County Operator⁶ at approximately 3:05 p.m. on December 30, 2021. At the time of this notification the volume of the SSO was unknown and was not reported. Information reported in this initial notification included the time that LACSD was notified of the SSO, the location of the SSO, where the SSO entered the storm drain and that the SSO was ongoing. Follow up notifications were provided to the Los Angeles County Operator as follows:

- Approximately 7:48 p.m. on December 30, 2021 – The SSO volume was reported to be 3 million gallons, the SSO ongoing and the cause to be collapse of a sewer that caused complete blockage.
- Approximately 3:17 p.m. on December 31, 2021 – The SSO volume was reported to be 8 million gallons and the SSO ongoing.

⁵ 1,020 gpm per pump is a conservative estimate of the bypass pumping capacity while less pumps were in operation. In order to install the third and fourth bypass pumps, the pump suction piping for the first two pumps had to be reduced in size from 10-inch diameter to 8-inch diameter. Then in order to install the fifth through eight bypass pumps, the pump suction piping for the first four pumps had to be reduced to 6-inch diameter. The smaller suction piping decreased the pumping capacity, however at the time of this report it has not been determined what the capacity of the pumps was with the larger suction piping.

⁶ The Los Angeles County Operator transmits the SSO notification report to LACDPH.

- Approximately 12:10 p.m. on January 1, 2022 – The SSO volume was reported to be 8.5 million gallons with 100,000 gallons recovered and the SSO stopped at approximately 8:45 p.m. on December 31, 2021.⁷

LACSD provided initial notification of the SSO to the Cal OES Warning Center at approximately 3:41 p.m. on December 30, 2021. At the time the volume of the SSO was uncertain and was reported to be a maximum of 100,000 gallons. Information reported in this initial notification included the location of the SSO, that the SSO flowed to the Dominguez Channel via a storm drain and that the overflow was ongoing. Follow up notifications were provided to Cal OES as follows:

- Approximately 7:31 p.m. on December 30, 2021 – The SSO volume was reported to be 3 million gallons, the SSO ongoing and the cause to be collapse of a sewer that caused complete blockage.
- Approximately 3:07 p.m. on December 31, 2021 – The SSO volume was reported to be 8 million gallons and the SSO ongoing.
- Approximately 12:08 p.m. on January 1, 2022 – The SSO volume was reported to be 8.5 million gallons and the SSO stopped at approximately 8:45 p.m. on December 31, 2021.⁸

Water quality monitoring was conducted at 20 locations that include shoreline and offshore sites, the Torrance Lateral and the Dominguez Channel (see Figure 2). LACSD staff also initiated dissolved oxygen monitoring in the Dominguez Channel on December 31, 2021 which remained in normal range. In addition, there was no presence of hydrogen sulfide observed in the Dominguez Channel during the days that sampling was conducted after the SSO. SSO related monitoring ceased at four Dominguez Channel locations on January 7, 2022 due to water quality returning to normal levels and to historic background conditions. Monitoring ceased at eight shoreline and offshore locations on January 5, 2022 and at four more shoreline and offshore locations on January 7, 2022 due to compliance with the Basin Plan Marine Objectives. On January 5, 2022, water quality sample results indicated fluctuating bacteriological levels at the storm drain entrance to the Torrance Lateral and an additional flushing of the storm drain using 21,000 gallons of potable water was completed on January 7, 2022. All flush water was captured and returned to the sewer. On January 12, 2022, an additional sample location was added in the Torrance Lateral due to continued fluctuating bacteriological levels. On January 14, 2022, monitoring ceased in the Torrance Lateral due to a return to normal conditions. Monitoring for dissolved oxygen in the Dominguez Channel will continue during the week of January 17, 2022. Based on biological observations conducted at 18 surface water, shoreline, and offshore locations between January 1 and January 7, 2022, no significant biological impacts were observed. On January 3, 2022, four of the five beaches that were closed by LACDPH and the two Orange County beaches reopened. On January 5, 2022, the Long Beach city beaches and inner Cabrillo Beach reopened. Preliminary bacterial monitoring results were shared with LACDPH, Long Beach Health, and OCHCA as they became available.

LACSD staff and emergency contractors worked around the clock to restore flow in the collapsed sewer and repair the damaged sewer pipe. Initially, it was anticipated that flow could be partially restored in the sewer upon clearing the soil and debris from the sinkhole such that a combination of the four bypass pumps and partially restored sewer flow would stop the overflow. However, due to the large amount of soil and debris encountered in the sewer downstream of the sinkhole,

⁷ After the final notification to the Los Angeles County Operator the SSO end time was determined to be approximately 9:38 p.m. on December 31, 2021 based on field observations.

⁸ After the final notification to Cal OES the SSO end time was determined to be approximately 9:38 p.m. on December 31, 2021 based on field observations.

restoration of flow in the sewer took much longer than expected (see Photos 18). The sewer was filled with soil and debris nearly to the top of the pipe for about 20 feet downstream of the sinkhole (see Photo 19). This soil and debris had to be cleared from the pipe before restoring flow, which proved to be a slow process since the excavator could not be used inside the 48-inch diameter pipe and the soil was too solid to be suctioned up by the combination jetter-vacuum truck without loosening it first. This section of pipe was also underneath the adjacent building, so the sinkhole excavation could not be extended further down to open up the pipe and remove the soil and debris. Ultimately, crews creatively devised a way to get the jetter nozzle downstream of the blockage so that the soil could be pulled back with the combination jetter-vacuum truck (see Photo 20). Once crews could see inside the downstream pipe, there was a concern that running too much flow in the pipe might cause damage to the pipe underneath the building, so it was determined that the pipe required CCTV inspection prior to restoring flow. On January 2, 2022, the collapsed soil and debris were sufficiently removed from the downstream sewer to begin CCTV inspection to assess the condition of the sewer and determine whether it was safe to accept flow (see Photo 21). The downstream sewer was determined to be in good condition and on the evening of January 3, 2022 flow was restored to the sewer (see Photo 22).

On January 7, 2022, the 42-inch corrosion-resistant Centrifugally Cast Fiberglass-Reinforced Polymer Mortar Pipe (CCFRPM) was delivered to the emergency repair site to slip-line the existing 48-inch sewer, arriving three days ahead of the original schedule. Repair of the damaged sewer and approximately 200 feet of the downstream sewer began that evening (see Photo 23). By 3:20 a.m. on January 8, 2022, the downstream segments had been installed. By approximately 6:00 p.m. on January 8, 2022, the remaining CCFRPM segments had been installed (see Photo 24). On January 9, 2022 grout was injected in the annular space between the outside of the new 42-inch CCFRPM pipe and the inside of the existing 48-inch reinforced concrete pipe. On Monday, January 10, 2022, the excavation where the sinkhole occurred was backfilled. Site restoration, including general cleanup, restoration of disturbed landscaping, and equipment demobilization began on January 11, 2022 and was completed at approximately 1:00 p.m. on January 13, 2022 (see Photo 25). Caltrans was contacted at approximately 1:00 p.m. on January 13, 2022 and decided to reopen the off-ramp in the evening when traffic was lighter. The I-110 Freeway off-ramp was reopened on January 13, 2022 at approximately 8:00 p.m.

LACSD staff visited impacted residents along West 212th Street where the SSO occurred on January 1, 2022 and provided a notice explaining LACSD's provision of complimentary driveway cleaning and car washes. On January 2, 2022, LACSD staff visited residents again and clarified the restoration efforts including replacement of parkway grass and pavers and the option for onsite car washes. On January 3, 2022, Clean Harbors conducted additional cleaning and disinfection of the area impacted by the SSO (see Photo 26). Clean Harbors power washed and sanitized all affected driveways and sidewalks, and conducted additional washing and disinfection of the street, curb and gutter on the south side of West 212th Street which had previously been cleaned by LACSD staff on December 31, 2021⁹. On the same day, residents were visited by the LACSD Chief Engineer and General Manager, along with the City of Carson Mayor and a community leader to ensure that residents' concerns were being addressed. On January 5, 2022, Clean Harbors returned to the SSO site and conducted additional cleaning and disinfection of the street, curb, and gutter on the north side of West 212th Street which had previously been cleaned by LACSD staff on December 31, 2021 and January 1, 2022 (see Photo 27). On January 6, 2022, LACSD staff provided a mobile car washing service to impacted residents that continued over

⁹ The north side of West 212th Street was not able to be washed and disinfected on January 3, 2022 due to parked cars on the north side of the street. City street sweeping service was being conducted that day on the south side of the street.

several days (see Photo 28). LACSD staff also contracted with a landscaping company to replace parkway vegetation and pavers on the south side of West 212th Street and replace topsoil in the landscape area on the north side of the street. Landscape repair began on January 7, 2022 and is expected to be essentially complete by the end of January 2022¹⁰ (see Photo 29).

The total duration of the SSO was approximately 32 hours. There were a number of challenging factors and field conditions that contributed to the SSO duration, which include but are not limited to:

- Identification of location of the sewer blockage:
 - Initial troubleshooting of MSPP operation to rule out pumping operations and downstream sewer capacity as the principal cause.
 - Inability to access MHs located on private property to check flow conditions for pinpointing the location of the blockage.
 - Onset of darkness, heavy rain, and peak traffic conditions during field investigations.
 - Distance that blockage occurred from the SSO site (approximately 3/4 mile downstream).
- Challenges with the setup of sewage bypass pumping systems due to:
 - Location of the sinkhole next to the 110 Harbor Freeway off-ramp, requiring coordination/closures with Caltrans and California Highway Patrol.
 - Challenging terrain and access issues that made infeasible the setup of a larger bypass pump and piping system. Instead multiple smaller bypass pump and piping (lay flat hose) systems were installed over a couple of days to manage sewer flows.
 - Challenging terrain for the placement of bypass pumping hoses over a long distance (approximately 730 feet) to the bypass pumping discharge manhole location.
 - Lack of access to downstream manhole on private property requiring the cutting of the freeway soundwall to access the bypass pumping discharge manhole location.
 - Persistent higher than normal sewage flows due to inflow and infiltration of stormwater into the sewer which required installation of additional bypass pumping systems to stop the SSO.
 - Tight site constraints and access issues at the sinkhole location and suction/discharge manholes for the bypass pumping systems.
 - Coordination and access challenges between the sewer construction/excavation equipment and bypass pumping systems, which slowed down both bypass pumping installation and sewer construction/excavation activities.
- Excavation, clearing of sewer blockage and cleaning/removing of debris challenges in the downstream sewer reach due to:
 - Tight site constraints and access issues at the sinkhole location.
 - Coordination and access challenges between the sewer construction/excavation equipment and bypass pumping systems, which slowed down both bypass pumping installation and sewer construction/excavation activities.
 - Installation and modification of shoring systems throughout the duration of construction/excavation activities.

¹⁰ One resident requested a type of grass that is not available during winter months. Landscaping for this resident will be completed when the grass becomes available.

- Unexpected large quantity of soil and debris encountered in the sewer downstream of the sinkhole which nearly completely blocked the sewer for approximately 20 feet downstream of the sinkhole and had to be removed before restoring flow in the sewer.

The investigation into the cause of the pipe collapse is ongoing. LACSD has hired a third-party expert to assist with the investigation and determine the cause of the sewer collapse. LACSD programs, procedures and methods will be reviewed to determine recommended improvements.



Photo 1: Wastewater overflowing from LACSD MH 08 0719 during SSO event on December 30, 2021 at 2:15 p.m. immediately after arrival of LACSD staff. View facing north at the intersection of West 212th Street and South Lynton Avenue.



Photo 2: Wastewater overflow in West 212th Street on December 30, 2021 at 6:28 p.m. View facing east on West 212th Street. Based on operational data from Main Street Pumping Plant, the overflow rate at the time of this photo was the maximum that occurred during the SSO.



Photo 3: Catch basin where the SSO entered the storm drain system. View facing east on West 212th Street, west of the intersection with South Moneta Avenue.



Photo 4: Sinkhole between MHs 08 0644 and 08 0476 on the 216th Street Relocation Trunk Sewer immediately after it was found at approximately 5:03 p.m. on December 30, 2021. View facing southwest, approximately 30 feet east of the I-110 Freeway northbound off-ramp to 220th Street.



Photo 5: Preparation of discharge hoses for the emergency bypass between MHs 08 0644 and 08 0475 on the 216th Street Relocation Trunk Sewer. Photo taken on December 30, 2021 at 8:47 p.m. View facing south from the I-110 Freeway northbound off-ramp to 220th Street.



Photo 6: Discharge piping for bypass pumps along I-110 Freeway soundwall while piping was being installed for fifth bypass pump on December 31, 2021 at 7:21 p.m. Difficult terrain and thick vegetation presented challenges for installing the bypass piping. View facing south.



Photo 7: A hole was cut in the I-110 Freeway soundwall to gain access to the downstream discharge manhole for the bypass system. The hole was later repaired after the bypass system was removed. View facing north on the morning of January 1, 2022 with piping for all eight bypass pumps installed.

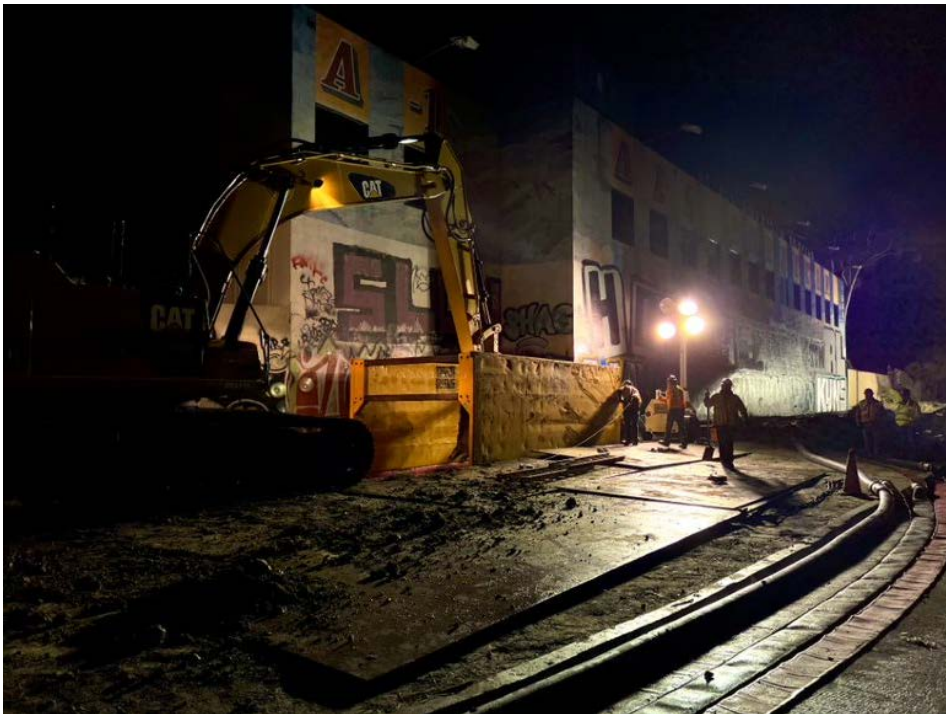


Photo 8: Installation of shoring at the sinkhole site on December 31, 2021 at 2:45 a.m. View facing southeast from the I-110 Freeway northbound off-ramp to 220th Street.



Photo 9: Removal of collapsed soil and debris in the excavation pit using a combination jetter-vacuum truck on December 31, 2021 at 6:44 a.m.



Photo 10: West 212th Street facing east toward South Moneta Avenue on December 31 at 2:04 p.m. The overflow was significantly reduced and contained to the north gutter (at left) during the entire day due to the operation of four bypass pumps.



Photo 11: LACSD staff washing down affected areas on the south side of West 212th Street on December 31, 2021 at 1:48 p.m. while the overflow was contained to the north gutter. View facing northeast toward South Moneta Avenue.



Photo 12: Emergency repair site on January 1, 2022 showing five of the eight bypass pumps installed to bypass flow around the collapsed sewer to MH 08 0475. Tight site conditions presented challenges for installing the bypass pumping equipment. View facing southeast from the I-110 Freeway off-ramp to 220th Street.



Photo 13: Pump suction piping in one of two suction manholes on the morning of January 1, 2022 after all eight bypass pumps were in operation. Installation of the final four pumps required modifications to the suction piping of the first four pumps to fit the additional suction pipes into the manhole.



Photo 14: Pump discharge piping into MH 08 0475 on the morning of January 1, 2022 after all eight bypass pumps were in operation. Installation of the final four pumps required modifications to the discharge piping of the first four pumps to fit the additional discharge pipes into the manhole.



Photo 15: West 212th Street on January 1, 2022 at 9:22 a.m. after initial cleaning of the areas affected by the SSO was completed. View facing east at intersection of West 212th Street and South Lynton Avenue.



Photo 16: LACSD staff using a water truck to flush storm drain with potable water on January 1, 2022. View facing west on West 212th Street.



Photo 17: Storm drain flush water containment setup at the storm drain outlet to the Torrance Lateral on January 1, 2022. Green dye was used as an indicator to ensure that all flush water was captured. All flush water was returned to the sewer system.



Photo 18: Sinkhole excavation pit on December 31, 2021 at 8:03 a.m. A large amount of soil and debris was encountered in the downstream sewer pipe that slowed progress with restoring flow in the sewer.



Photo 19: Closeup of the soil and debris found in the sewer just downstream of the sinkhole on December 31, 2021 at approximately 1:30 p.m. The soil and debris filled the pipe up to a couple inches from the top of pipe for about 20 feet downstream of the sinkhole.

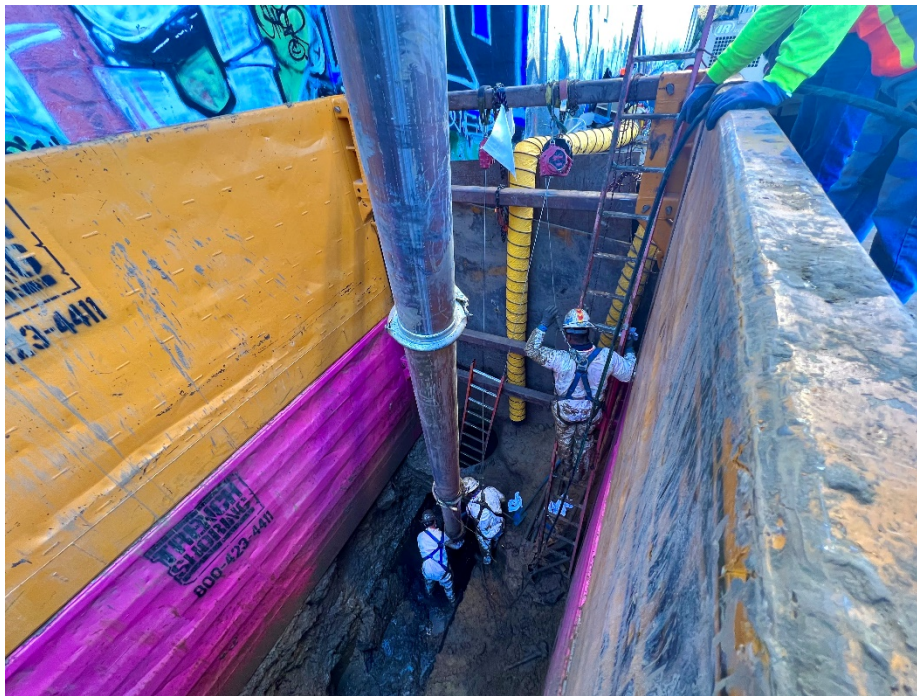


Photo 20: Soil and debris being vacuumed from the sewer downstream of the sinkhole excavation after being pulled back with the jetting function of the combination jetter-vacuum truck on January 1, 2022 at 9:35 a.m.



Photo 21: Combination jetter-vacuum truck working to remove soil and debris from the downstream sewer pipe while CCTV inspection is intermittently used to check the condition of the pipe (black CCTV van at right). View facing south on January 2, 2022 at 9:51 a.m.



Photo 22: Wastewater flow restored to the sewer on January 3, 2022 at approximately 6:00 p.m.



Photo 23: Emergency construction contractor installing the first segment of 42-inch CCFRPM pipe on January 7, 2022 to repair the 216th Street Relocation Trunk Sewer by slip-lining the existing 48-inch pipe.



Photo 24: Final segment of 42-inch CCFRPM pipe installed on January 8, 2022 at approximately 6:00 p.m. to repair the damaged sewer.



Photo 25: Restoration of the sinkhole site was completed on January 13, 2022 and the I-110 Freeway off-ramp was reopened that night at approximately 8:00 p.m. View facing southeast from the I-110 Freeway off-ramp.



Photo 26: Clean Harbors, Inc. washing and sanitizing an impacted sidewalk on the morning of January 3, 2022. View facing south on West 212th Street.



Photo 27: Clean Harbors, Inc. washing and sanitizing the impacted street area on the morning of January 5, 2022. View facing northwest at the intersection of West 212th Street and South Moneta Avenue.



Photo 28: Mobile car washing service providing car washes to impacted residents on January 7, 2022.



Photo 29: Landscapers replacing parkway vegetation on the south side of West 212th Street on January 7, 2022. View facing west on West 212th Street.

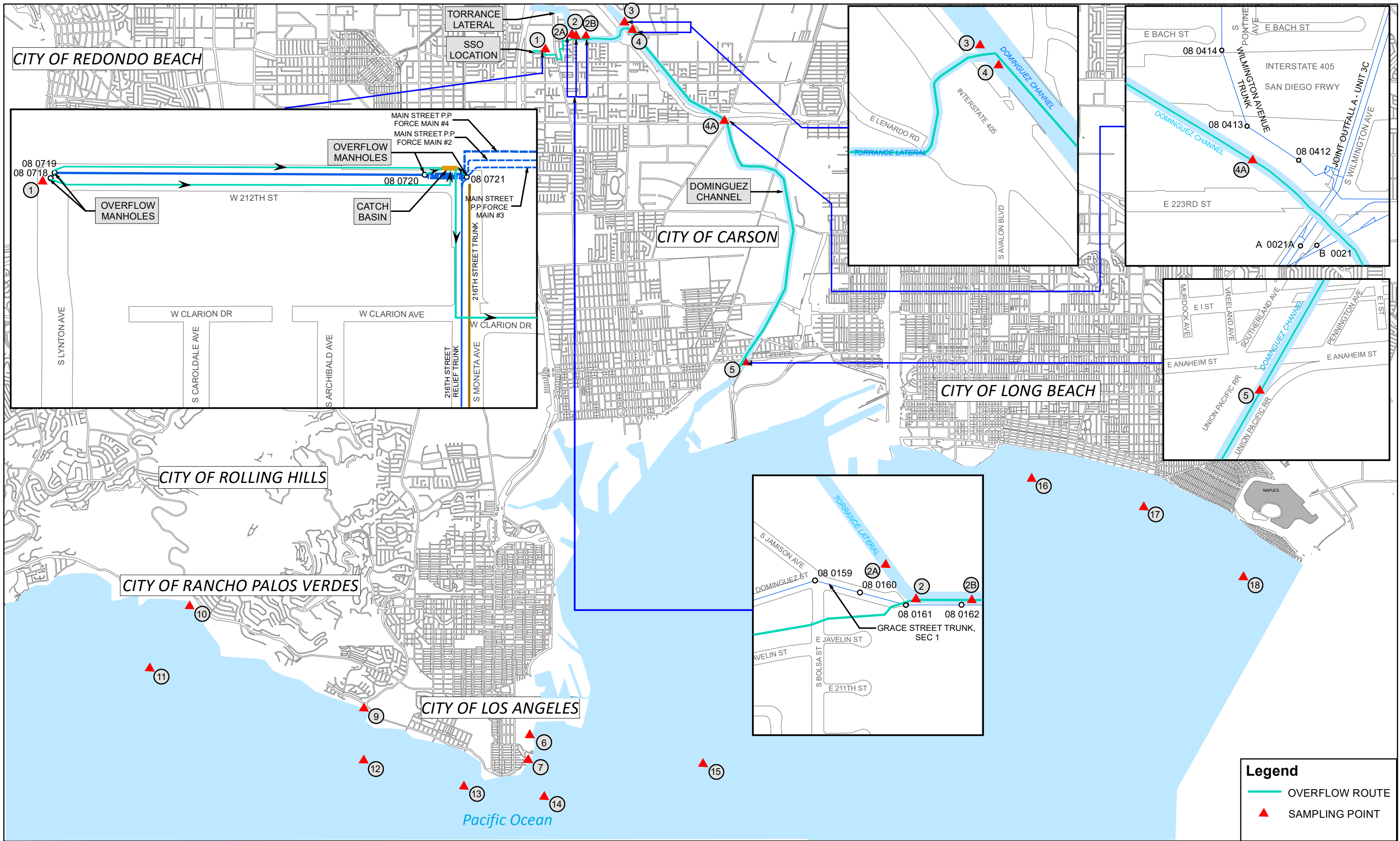


FIGURE 2: WATER QUALITY SAMPLE LOCATIONS

Electronic Spill Report Worksheet

SSO Date: 12/30/2021

CIWQS SSO Event ID: 878549

CIWQS Question No.	Question	Answer
*1	Spill Category	SSO Category 1
*2	<u>Estimate Spill Volumes</u>	
a)	Estimated spill volume that reached a separate storm drain that flows to a surface water body?	8,578,558 gallons
b)	Estimated spill volume recovered from the separate storm drain that flows to a surface water body? (Do not include water used for clean-up)	0 gallons
c)	Estimated spill volume that reached a drainage channel that flows to a surface water body?	0 gallons
d)	Estimated spill volume recovered from a drainage channel that flows to a surface water body?	0 gallons
e)	Estimated spill volume discharged directly to a surface water body?	0 gallons
f)	Estimated spill volume recovered from the surface water body?	0 gallons
g)	Estimated spill volume discharged to land? (Includes discharges directly to land, and discharges to a storm drain system or drainage channel that flows to a storm water Infiltration/retention structure, field, or other non-surface water location.)	35,000 gallons
h)	Estimated spill volume recovered from the discharge to land? (Do not include water used for clean-up.)	35,000 gallons
	Estimated Total spill volume to Reach Surface Water (a-b+c+e).	8,578,558 gallons
	Estimated Total spill volume to Reach Land (g).	35,000 gallons
	Estimated Total spill volume Recovered (b+d+f+h).	35,000 gallons
	Estimated Total spill volume (a+c+e+g).	8,613,558 gallons

Electronic Spill Report Worksheet

SSO Date: 12/30/2021

CIWQS SSO Event ID: 878549

*3	Did the spill discharge to a drainage channel and/or surface water?	Yes
*4	Did the spill reach a storm drainpipe that is not part of a combined sewer system?	Yes
*5	If spill reached a separate storm drainpipe, was all of the wastewater fully captured from the separate storm drain and returned to the sanitary sewer system?	No
*6	Spill location name:	216 th Street Replacement Trunk (District 8)
*7	Latitude of spill location:	33° 50' 12.8538" N
*8	Longitude of spill location:	118° 17' 3.6168" W
*9	County:	Los Angeles
*10	Regional Water Quality Control Board:	Region 4 – Los Angeles
11	Spill Location Description: (Use attachment if location description is more than 2000 characters)	West 212 th Street between South Lynton Avenue and South Moneta Avenue
*12	Number Of appearance points:	4
*13	Spill appearance point: (Hold Ctrl key to Select Multiple answers from the list)	Manhole
*14	Spill appearance point explanation: (Required if spill appearance point is "Other" and/or multiple appearance points are selected)	4 LACSD sewer manholes: 08 0718, 08 0719, 08 0720, 08 0721
**15	Final spill destination: (Hold Ctrl key to Select Multiple answers from the list)	Other
16	Explanation of final spill destination: (Required if final spill destination is "Other")	The spill entered the storm drain system tributary to the Dominguez Channel and reached the Pacific Ocean at the Los Angeles Harbor
*17	Estimated spill start date/time:	December 30, 2021 @ approximately 1:30 p.m. (1330 hr)
*18	Date and time sanitary sewer system agency was notified of or discovered spill:	December 30, 2021 @ approximately 1:50 p.m. (1350 hr)
*19	Estimated Operator arrival date/time:	December 30, 2021 @ approximately 2:14 p.m. (1414 hr)
**20	Estimated spill end date/time:	December 31, 2021 @ approximately 9:38 p.m. (2138 hr)
**21	Spill cause:	Pipe Structure Problem/Failure
22	Spill cause explanation: (Required if spill Cause is "Other")	Pipe collapse on the 216 th Street Relocation Trunk Sewer between MHs 08 0644 and 08 0476. The

Electronic Spill Report Worksheet

SSO Date: 12/30/2021

CIWQS SSO Event ID: 878549

		ground surface elevation at the spill site is lower than the ground surface elevation at the pipe collapse. Investigation into the cause of the pipe collapse is ongoing.
**23	Where did failure occur?	Gravity Mainline
24	Explanation of Where Failure Occurred: (Required if Where Failure Occurred is "Other")	
**25	Was this spill associated with a storm event?	Yes
26	Diameter of sewer pipe at the point of blockage or failure:	48-inch
27	Material of sewer pipe at the point of blockage or failure:	RCP
28	Estimated age of sewer asset at the point of blockage or failure (years):	61 Years
**29	Spill response activities: (Hold Ctrl key to Select Multiple answers from the list)	-Clean-Up -Mitigate Effects of Spill -Other -Restored Flow -Returned Portion of Spill to Sanitary Sewer System
30	Explanation of spill response activities: (Required if spill response activities is "Other", use attachment if the text is more than 1700 characters)	-Repair of collapsed sewer pipe -Flushed, washed and sanitized street/curb and gutter with potable wash water -Washed and sanitized impacted driveways and sidewalks -Flushed storm drain with potable wash water -All wash/flush water was collected and returned to the sewer system -Sampling -Biological observations
**31	Spill response completion date:	January 1, 2022 @ approximately 5:55 p.m. (1755 hr)
**32	Spill corrective action taken: (Hold Ctrl key to Select Multiple answers from the list)	-Other (specify below)
33	Explanation of spill corrective action taken: (Required if spill corrective action is "Other")	The collapsed 48-inch RCP sewer was repaired by slip-lining with 42-inch Centrifugally Cast Fiberglass-Reinforced Polymer Mortar Pipe. The repair included slip-lining approximately 200 feet of the sewer

Electronic Spill Report Worksheet

SSO Date: 12/30/2021

CIWQS SSO Event ID: 878549

		downstream of the collapse. LACSD programs, procedures and methods will be reviewed to determine recommended improvements.
**34a	Is there an ongoing investigation?	Yes
34b	Reason for ongoing investigation?	Cause of pipe collapse requires independent investigation by third-party expert
35	Visual inspection results from impacted receiving water:	The LACSD Biology Group conducted biological observations between January 1 and January 7, 2022 at 28 surface water, shoreline, and offshore locations and found no adverse impacts from the spill.
**36	Health warnings posted?	Yes
**37	Did the spill result in a beach closure (If YES, answer questions 38)?	Yes
**38	Name of impacted beach(es) (enter NA if None):	Portuguese Bend, Point Fermin, Royal Palms, White Point, Cabrillo, all beaches in Long Beach, Seal Beach and Sunset Beach
**39	Name of impacted surface water(s) (enter Un-named Tributary to XXXXX where XXXXX is the name of first named downstream tributary if receiving surface water body is un-named):	Dominguez Channel, Los Angeles Harbor and Pacific Ocean
**40	Water quality samples analyzed for: (Hold Ctrl key to Select Multiple answers from the list)	-Dissolved Oxygen -Biological indicator(s) -Other Chemical indicator(s)
41	Explanation of water quality samples analyzed for: (Required if water quality samples analyzed for is "Other chemical indicator(s)", "Biological indicator(s)", or "Other")	Total Coliform, Fecal Coliform, Enterococcus, E. Coli, Ammonia
**42	Water quality sample results reported to: (Hold Ctrl key to Select Multiple answers)	-County Health Agency -Regional Water Quality Control Board -Other (specify below)
43	Explanation of water quality sample results reported to: (Required if water quality sample results reported to is "Other")	Preliminary bacterial monitoring results were shared with Los Angeles County Department of Public Health, Long Beach Health, and Orange County Health Care Agency as they became available.

Electronic Spill Report Worksheet

SSO Date: 12/30/2021

CIWQS SSO Event ID: 878549

**44	Explanation of volume estimation methods used: (Describe how you developed spill volume estimates for this spill)	The overflow volume was calculated using pump flow meter data from LACSDs Main Street Pumping Plant and bypass pump operational data. See SSO Report for additional details.
**45	Cal OES Control Number (Required for Category 1 - see SSO Monitoring and Reporting Program Requirements):	21-7503
**46	Cal OES Called Date/Time (Required for Category 1 - see SSO Monitoring and Reporting Program Requirements):	December 30, 2021 @ approximately 3:41 p.m. (1541 hr)
*47a	Name and Title (Contact person who can answer specific questions about this SSO)	Darrell Hatch, Supervising Engineer
*47b	Contact Person Phone Number	(310) 638-1161
	Spill Response Cost	\$319,008.98 – WAM to date
	Work Order No.	0934093

“Questions with “*” are required to be answered for ‘Save Work in Progress’.

Questions with “*” are required to be answered for ‘Submit Draft’, to be submitted within 3 business days after becoming aware of the SSO, and the rest of the questions to be submitted within 15 calendar days of the SSO end date, for “Ready to Certify.”

From: [LBMOperators](#)
To: [SpillNotify](#)
Subject: Involves Districts Facilities - Notification of a Potential Sewage Spill
Date: Thursday, December 30, 2021 2:50:57 PM

This is **A. TORRES** with the Los Angeles County Sanitation Districts Alarm Center.

The Districts received a report on 12/30/21 at 1: 52 PM of a sewer spill at W. 212 St. AND S. MONETA AVE in the city of CARSON 90745

Sewerage system personnel will investigate. If you need to reach this alarm center please call (562)437-6520 or (562)437-1881

This email certifies notification of the potential discharge has been given by telephone or by this email to: The Los Angeles County Department of Public Health, California Emergency Management Agency, Los Angeles and Lahontan Regional Water Quality Control Board, City of Long Beach Department of Health and Human Services, City of Vernon Health and Environmental Control, and Pasadena Public Health Department.

Attachment 2

Attachment 3

Outreach and Assistance Provided to Residents

Summary of Direct Impacts to Residents

The spill caused an overflow on 212th street between Lynton Avenue to the west and Moneta Avenue to the east. The spill flowed from west to east and into a storm drain catch basin. There are homes on the south side of the street and a planter on the other side. The spill flowed mostly between the curbs, but some flow went into the planter and partly into the driveways and parkway on south side of the street. The spill also reached a limited portion of sidewalk on the south side of the street.

The spill also impacted two homes on the west side of Lynton near 212th street-the parkway for one and a portion of the front yard for the other (which does not have a parkway). Residents had to drive through the spill to leave/return to home.

Outreach and Assistance Offered

Notices

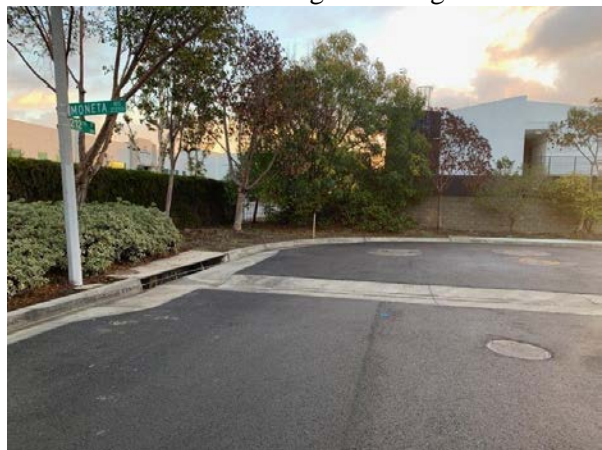
On Friday 12/31/21, Sanitation Districts staff provided a handout to residents describing the spill situation and where to go for more information (Attachment 3A). On Saturday 1/1/22, Sanitation Districts staff provided residents a handout describing complimentary car washes, driveway cleaning, contact information, and a form for submitting claims (Attachment 3B). On Sunday 1/2/22, Sanitation Districts staff provided residents an update to the 1/1 handout (Attachment 3C). On Thursday 1/6/22, Sanitation Districts staff provided another update expanding the options for parkway materials (Attachment 3D). The first notice was provided in English while the second, third and fourth were provided in English and Spanish. On 1/6/22, Sanitation Districts staff also provided a Korean translation of all four of the preceding handouts (Attachment 3E) to a household that speaks Korean.

Street, Sidewalk and Driveway Cleaning

On the morning of Friday 12/31/21, the overflow had been significantly reduced and the overflow was confined to the north side gutter. Sanitation District crews cleaned the south half of street and sidewalk that day. At 9 p.m. on Friday 12/31/21, the overflow was entirely stopped and Sanitation District crews cleaned the north half of the street. Photos of the street the following morning are below.



Looking east on 212th Street at ~8 a.m. on 1/1/22



Corner of 212th and Moneta at ~8 a.m. on 1/1/22

On Saturday, 1/1/22, Sanitation District crews cleaned the north half of the street again to make sure cleanup during the night before was thorough.

On Monday 1/3/22, a third-party provider (Clean Harbors) hired by the Sanitation Districts cleaned the south half of street as well as affected sidewalks and driveways (the north half of the street was unavailable due to cars parked there). On Wednesday 1/5/22, Clean Harbors cleaned the north half of the street (when that area was clear of vehicles for regularly scheduled street sweeping).

Car Washing

Some cars were parked in the area where the spill occurred while other cars drove through the spill as people left or returned to their homes. On Saturday 1/1/22, Sanitation Districts staff provided a handout to residents that offered to reimburse residents for car washes. This offer was later expanded to include a car wash at the resident's home or a gift card to use at a nearby car wash. Residents could choose whichever option they preferred.

As of January 14, 43 car washes had been requested by residents. All 28 requested onsite car washes had been completed and gift cards had been handed out for the remaining 15 car washes. No residents opted to get their vehicle washed and submit a receipt.

Parkway Replacement

Between the curb and sidewalk on the south side of the street is a parkway. Residents are responsible for maintaining these and parkways had different contents. Some parkways were filled with grass, some had limited vegetation, and one had masonry pavers. At the request of residents, we offered to replace the existing parkway materials with one the following options as selected by each resident: grass, pavers, pea gravel, decomposed granite, or mulch. This work started on January 7 and, as of January 13, three Superior fescue grass parkways and two pea gravel parkways had been completed. Paver installation is expected to be complete by the end of January or early February. One of the residents did not want changes to their front yard and the remaining resident requested Saint Augustine grass. This grass is not available until March or April and will be installed once it becomes available.

Planter Topsoil Replacement

On the north side of 212th Street there is a planter filled with trees and shrubs backed by a block wall. The Sanitation Districts' standard practice when a spill occurs on bare soil is to remove the top two inches of soil. In this area, our landscaper will remove the top 2 inches of soil where such removal can be done without potential harm to trees, shrubs, or their roots. As recommended by our landscaper, the soil will be replaced with mulch to provide a healthier environment for trees and shrubs. This work began on January 14 and is expected to be complete by the end of January.

Claims

As mentioned above, a claims form was handed to residents on Saturday 1/1/22. This form was also made available to the City of Carson which posted the form to their Twitter account (ReadyCarson) on Thursday 1/6/22 and their Facebook and Instagram accounts the following day. Inquiries have been accepted at Sanitation Districts' phone numbers (562-908-4288, ext. 2303 and 2310) and emails (info@lacsdsd.org and claims@lacsdsd.org).



ADVISORY REGARDING SEWAGE SPILL

12/31/21 10:25 a.m.

Yesterday afternoon, we became aware of a sewage spill on 212th Street between Lynten Ave. and Moneta Ave. in the City of Carson. The spill occurred due to a sewer collapse near the 110 northbound off-ramp to Carson Street. We immediately mobilized crews to investigate.

At about 5 p.m., our crews discovered the collapsed sewer and we called out emergency contractors to address the sewer collapse. By around 6:30 p.m., one emergency contractor was onsite working to bypass flow around the clogged section of sewer. We decided to shore up the area of the sewer collapse so that we could excavate debris from the sewer and restore the pipe's flow. The shoring and excavator were onsite by 11:30 p.m.

The first sewer bypass was started at 2:10 a.m. and a second bypass pump began 2:40 a.m. These two bypasses were almost enough to stop the spill but more was needed. Sewage initially stopped overflowing onto 212th street around 8 a.m. By 8:50 a.m., a third bypass was running, which provides some protection in case sewer flows increase. At 9:00 a.m., staff was working to install a fourth bypass to provide additional protection.

As of 10:00 a.m., a small amount of overflow had restarted. We are implementing additional measures to completely eliminate the overflow, including removal of the debris blockage so that we can restore the sewer capacity. We have crews working to clean the area where the spill occurred. The cleanup is expected to be completed this afternoon.

Our preliminary estimate of amount spilled is 6 to 7 million gallons. The spilled sewage went to a nearby storm drain and then Dominguez Channel and the LA Harbor. Devices monitored for hydrogen sulfide and none was detected overnight.

As a safety precaution due to spilled sewage reaching the ocean, the LA County Department of Public Health issued a closure beaches from Long Beach to Rancho Palos Verdes.

We will be working with health officials over the coming days to monitor water quality to determine when beaches are safe to reopen and assess environmental impacts.

For more information, check www.lacsd.org for updates or email info@lacsd.org.



**LOS ANGELES COUNTY
SANITATION DISTRICTS**
Converting Waste Into Resources

ADVISORY REGARDING SEWAGE SPILL AND CLAIM FORMS

01/01/2022 3:40 p.m.

By adding a 5th sewer bypass system to our collapsed sewer located near the 110 off-ramp, we stopped the sewage overflow on 212th Street last night. Since then, we have added three additional bypasses as further protection against high sewer flows. We are also continuing our work to repair the collapsed sewer.

We understand that overflowing sewage may have dirtied your car or your driveway, so we are offering residents complimentary cleaning of your driveway and reimbursement for a car wash.

To have your driveway cleaned, please contact us at 562-360-2145. For car wash reimbursements and for any other claim, please submit attached claim form by email to info@lacsds.org.

If you have any other questions, please contact us at info@lacsds.org. For updates on this incident, visit www.lacsds.org/sewagespill.

Thank you for your continued patience and understanding.

ASESORAMIENTO SOBRE EL DARRAME DE AGUAS NEGRAS Y FORMULARIOS DE RECLAMACIÓN

Al agregar un quinto sistema de derivación de alcantarillado a nuestra alcantarilla colapsada ubicada cerca de la rampa de salida del freeway 110, detuvimos el desbordamiento de aguas negras en la calle 212 anoche. Desde entonces, hemos agregado tres desvíos adicionales como protección adicional contra los altos flujos de alcantarillado. También continuamos nuestro trabajo para reparar la alcantarilla colapsada.

Entendemos que las aguas negras desbordadas pueden haber ensuciado su automóvil o su entrada, por lo que ofrecemos a los residentes limpieza gratuita de su entrada y reembolso por un lavado de autos.

Para que le limpien la entrada, comuníquese con nosotros al 562-360-2145. Para reembolsos de lavado de autos y cualquier otro reclamo, envíe el formulario de reclamo adjunto por correo electrónico a info@lacsds.org.

Si tiene alguna otra pregunta, comuníquese con nosotros a info@lacsds.org. Para obtener actualizaciones sobre este incidente, visite www.lacsds.org/sewagespill.

Gracias por su paciencia y comprensión.



ADVISORY REGARDING SEWAGE SPILL AND CLAIM FORMS - UPDATE

01/02/2022 12:30 p.m.

Below is additional information of the work being done to restore 212th Street:

- Driveway cleaning will take place on Monday, January 3. If you would like to have your driveway washed, please contact us if you haven't done so already. If this day does not work for you, contact us so that we may arrange for another day.
- A complimentary mobile car wash will be coming to your street this upcoming week. If you prefer to use another car wash company, please send us the receipt and we will reimburse you.
- Upon request, we will replace the grass parkway in front of your homes and any landscaping affected by the spill.
- We will be replacing the top layer of soil on the other side of the street (north side).
- To clarify, there is no need to complete a claim form. The form was primarily intended as a convenient way to get a resident's contact information and the details about their claim. We will also respond to concerns received by email or phone.

We want to make this process as convenient for you as possible. If you have any claims, concerns or comments, please contact us at info@lacsdsd.org, 562-908-4288 ext. 2303 or ext. 2310. For updates on the sewer repairs, visit www.lacsdsd.org/sewagespill.

Thank you for your continued patience and understanding.

ASESORAMIENTO SOBRE EL DARRAME DE AGUAS NEGRAS Y FORMULARIOS DE RECLAMACIÓN

A continuación se muestra información adicional sobre el trabajo que se está realizando para restaurar la calle 212:

- La limpieza de la entrada se llevará a cabo el lunes 3 de enero. Si desea que le laven la entrada, comuníquese con nosotros si aún no lo ha hecho. Si este día no le funciona, comuníquese con nosotros para que podamos programar otro día.
- Un móvil para lavar carros llegará a su calle la semana que viene. Estas lavadas serán gratuitas. Si prefiere utilizar otra empresa de lavado de autos, envíenos el recibo y se lo reembolsaremos.
- Si lo solicita, reemplazaremos la avenida con césped frente a sus hogares y cualquier jardín afectado por el derrame.
- Reemplazaremos la capa superior de tierra en el otro lado de la calle (lado norte).
- Para aclarar, no es necesario completar un formulario de reclamación. El formulario fue diseñado principalmente como una forma conveniente de obtener la información de contacto de un residente y los detalles sobre su reclamo. También responderemos a las inquietudes recibidas por correo electrónico o por teléfono.

Queremos que este proceso le resulte lo más conveniente posible. Si tiene alguna reclamación, inquietud o comentario, comuníquese con nosotros a info@lacsdsd.org, 562-908-4288 ext. 2303 o ext. 2310. Para obtener actualizaciones sobre las reparaciones de alcantarillado, visite nuestro sitio web www.lacsdsd.org/sewagespill.

Gracias por su paciencia y comprensión.



**LOS ANGELES COUNTY
SANITATION DISTRICTS**
Converting Waste Into Resources

UPDATE REGARDING 212TH STREET RESTORATION

01/06/2022 1:30 p.m.

As of yesterday, Clean Harbors finished disinfecting driveways, the sidewalk and road on 212th Street between Lynton Ave. and Moneta Ave. Their work was split between two days: Monday, January 3, and Wednesday, January 5.

We have scheduled a free car wash or arranged for a car wash voucher with all residents affected by the spill. A contractor began washing cars this morning.

We have contracted with a landscaper to replace parkways with either grass or a drought-tolerant option. Below are options that each resident can choose:

1. Grass – The contractor will use Superior Fescue grass since this grass is most prevalent on the street. The contractor will continue to water your parkway for one month to ensure that the new grass takes root. It will be the resident's responsibility to maintain their grass afterwards.
2. Drought-tolerant – This option will require no water and little to no maintenance.
 - a. Mulch
 - b. Pea gravel
 - c. Decomposed granite

For residents that have elected to change their parkway, the landscaper will begin removing existing parkway material on Friday, January 7. This removal work is expected to last until approximately January 18. Afterwards, grass will be installed followed by drought-tolerant options.

Work on replacing topsoil with mulch on the other side of the street will begin after the parkway landscaping is completed.

If you have any claims, concerns or questions, please contact us at info@lacsdsd.org or 562-908-4288, ext. 2303 or ext. 2310. For updates on the sewer repairs, visit our website at www.lacsdsd.org/sewagespill.

Thank you for your continued patience.



**LOS ANGELES COUNTY
SANITATION DISTRICTS**

Converting Waste Into Resources

NOTICIAS CON RESPECTO A RESTAURACIÓN DE LA CALLE 212

6 de enero de 2022 a la 1:30 p.m.

A partir de ayer, Clean Harbors terminó de desinfectar los caminos de entrada, la acera y la carretera en la calle 212, entre Lynton Ave. y Moneta Ave. El trabajo se dividió en dos días, el lunes 3 de enero y el miércoles 5 de enero.

También programamos un lavado de autos o hicimos arreglos para un cupón de lavado de autos gratuitos para todos los residentes afectados por el derrame. Un contratista ya ha comenzado a lavar carros a partir de esta mañana.

Hemos contratado a una compañía de jardinería para reemplazar las avenidas con zacate o con una opción tolerante a la sequía. A continuación hay las opciones que cada residente puede elegir:

1. Zacate – El contratista utilizará el zacate Superior Fescue, ya que este zacate es más común en la calle. El contratista continuará regando su avenida durante un mes para asegurarse de que la grama/zacate nueva eche raíces. Será responsabilidad del residente mantener su césped después.
2. Tolerante a la sequía – Esta opción no requerirá agua y poco o ningún mantenimiento.
 - A. Mantillo/Pajote
 - B. Grava
 - C. Granito descompuesto

Para los residentes que han optado por cambiar su avenida, el contratista comenzará a quitar el zacate y tierra de la avenida el viernes 7 de enero. Se espera que este trabajo de remoción dure aproximadamente hasta el 18 de enero. Luego, se instalará zacate seguido de opciones tolerantes a la sequía.

El trabajo para reemplazar la capa superior del suelo con mantillo en el otro lado de la calle comenzará después de que se complete el trabajo de la avenida.

Si tiene alguna reclamación, inquietud o pregunta, comuníquese con nosotros por correo electrónico a info@lacsdsd.org, 562-908-4288 ext. 2303 o ext. 2310. Para obtener actualizaciones sobre las reparaciones del alcantarillado, visite nuestro sitio web www.lacsdsd.org/sewagespill.

Gracias por su paciencia.



하수 유출에 관한 보고

2021/12/31 오전 10:25

어제 오후, Carson 시의 Lynten Ave.와 Moneta Ave. 사이의 212 번가에서 하수 유출 사고를 알게 되었습니다. 유출은 Carson Street 으로 향하는 110 번 북쪽 방향 진입로 근처에서 하수관 붕괴로 인해 발생했습니다. Los Angeles County Sanitation Districts (LACSD)는 즉시 조사팀을 동원했습니다.

오후 5 시경, 우리 직원들은 무너진 하수관을 발견했고 하수관 붕괴 문제를 해결하기 위해 긴급 계약자를 불렀습니다. 오후 6 시 30 분경 한 긴급 계약자가 현장에 도착해서 막힌 하수관을 우회하기 위해 작업했습니다. 우리는 하수관에서 잔해물을 발굴하고 파이프의 흐름을 복원할 수 있도록 하수관 붕괴 지역을 지지하기로 결정했습니다. 지주와 굴착기는 오후 11 시 30 분에 현장에 도착했습니다.

첫 번째 하수관 우회는 오전 2 시 10 분에 시작되었고 두 번째 우회 펌프는 오전 2 시 40 분에 시작되었습니다. 이 두개의 우회로가 유출을 막는 데 거의 충분했지만 더 많은 우회로가 필요했습니다. 오전 8 시경 212 번가 하수 유출이 멈췄고, 하수량이 증가할 경우를 위한 보호 기능을 위해 오전 8 시 50 분에 세 번째 우회로가 설치되었습니다. 오전 9 시에는 추가 보호를 제공하기 위해 네 번째 우회로를 설치하는 작업을 하고 있었습니다.

오전 10 시 현재 소량의 하수 유출이 다시 시작되었습니다. LACSD 는 하수관 용량을 복구할 수 있도록 잔해물 막힘 제거를 포함하여 유출을 완전히 제거하기 위한 추가 조치를 시행하고 있습니다. 유출이 발생한 지역은 청소하고 있습니다. 청소는 오늘 오후에 완료될 예정입니다.

유출된 양의 예비 추정치는 6 백만에서 7 백만 갤런입니다. 유출된 하수는 인근의 홍수 방지 배수관으로 흘러간 다음 Dominguez 해협과 LA 항만으로 흘러갔습니다. 황화수소 (hydrogen sulfide) 를 모니터링했지만 밤새 아무 것도 감지되지 않았습니다.

바다로 유출된 하수로 인한 안전 예방책으로 LA 카운티 공중 보건국은 Long Beach 에서 Rancho Palos Verdes 까지 해변을 폐쇄했습니다.

LACSD 는 해변을 재개방하기에 안전한 시기를 결정하고 환경 영향을 평가하기 위한 수질 모니터링을 위해 앞으로 며칠 동안 보건 당국과 협력할 것입니다.

자세한 내용은 www.lacsd.org 에서 업데이트를 확인하거나 info@lacsd.org 로 이메일을 보내십시오.



LOS ANGELES COUNTY
SANITATION DISTRICTS
Converting Waste Into Resources

ADVISORY REGARDING SEWAGE SPILL AND CLAIM FORMS

01/01/2022 3:40 p.m.

By adding a 5th sewer bypass system to our collapsed sewer located near the 110 off-ramp, we stopped the sewage overflow on 212th Street last night. Since then, we have added three additional bypasses as further protection against high sewer flows. We are also continuing our work to repair the collapsed sewer.

We understand that overflowing sewage may have dirtied your car or your driveway, so we are offering residents complimentary cleaning of your driveway and reimbursement for a car wash.

To have your driveway cleaned, please contact us at 562-360-2145. For car wash reimbursements and for any other claim, please submit attached claim form by email to info@lacsds.org.

If you have any other questions, please contact us at info@lacsds.org. For updates on this incident, visit www.lacsds.org/sewagespill.

Thank you for your continued patience and understanding.

하수 유출 관련 권고 및 청구 양식

110 번 진입로 근처에 있는 무너진 하수관에 5 번째 하수 우회 시스템을 추가하여 지난 밤 212 번가의 하수 유출을 막았습니다. 그 이후로 하수량 증가에 대비한 추가 보호로 3 개의 우회 시스템을 더 추가했습니다. 무너진 하수관 복구 작업도 계속하고 있습니다.

유출된 하수가 귀하의 차나 차도를 더럽힐 수 있다는 점을 이해하고 있으므로, 거주자들에게 무료로 차도 청소를 제공하고 세차 비용을 환급해 드리고 있습니다.

차도 청소를 원하시면 562-360-2145 로 연락해 주십시오. 세차 환급 및 그외 기타 청구에 대해서는 첨부된 청구 양식을 이메일 info@lacsds.org 로 제출하십시오.

다른 질문이 있으면 info@lacsds.org 로 문의하십시오. 이 사건에 대한 업데이트를 보려면 www.lacsds.org/sewagespill 을 방문하십시오.

귀하의 지속적인 인내와 이해에 감사드립니다.



LOS ANGELES COUNTY
SANITATION DISTRICTS

Converting Waste Into Resources

ADVISORY REGARDING SEWAGE SPILL AND CLAIM FORMS - UPDATE

01/02/2022 12:30 p.m.

Below is additional information of the work being done to restore 212th Street:

- Driveway cleaning will take place on Monday, January 3. If you would like to have your driveway washed, please contact us if you haven't done so already. If this day does not work for you, contact us so that we may arrange for another day.
- A complimentary mobile car wash will be coming to your street this upcoming week. If you prefer to use another car wash company, please send us the receipt and we will reimburse you.
- Upon request, we will replace the grass parkway in front of your homes and any landscaping affected by the spill.
- We will be replacing the top layer of soil on the other side of the street (north side).
- To clarify, there is no need to complete a claim form. The form was primarily intended as a convenient way to get a resident's contact information and the details about their claim. We will also respond to concerns received by email or phone.

We want to make this process as convenient for you as possible. If you have any claims, concerns or comments, please contact us at info@lacs.org, 562-908-4288 ext. 2303 or ext. 2310. For updates on the sewer repairs, visit www.lacs.org/sewagespill.

Thank you for your continued patience and understanding.

하수 유출 관련 권고 및 청구 양식 - 업데이트

다음은 212 번가 복원 작업에 대한 추가 정보입니다.

- 차도 청소는 1 월 3 일 월요일에 진행됩니다. 아직 저희에게 연락을 취하지 않았을 경우, 차도 청소를 원하시면 저희에게 연락해 주십시오. 이 날이 귀하에게 적합하지 않으면, 다른 날을 스케줄 할 수 있도록 저희에게 연락하십시오.
- 다음 주에 무료로 모바일 세차 서비스가 제공됩니다. 다른 세차업체 이용을 원하실 경우 영수증을 보내주시면 환급해 드리겠습니다.
- 요청 시 귀하의 집 앞 잔디 공원과 유출로 영향을 받는 모든 조경을 교체할 것입니다.
- 도로 반대편(북쪽)의 최상층 흙을 교체할 것입니다.
- 명확히 하자면, 청구서를 작성할 필요가 없습니다. 청구 양식의 주된 목적은 거주자의 연락처 정보와 청구에 대한 세부 정보를 편리하게 얻기 위함이었습니다. 이메일이나 전화로 접수된 우려 사항에도 답변해 드리겠습니다.

귀하를 위해 이 프로세스를 최대한 편리하게 만들고자 합니다. 청구, 우려 사항 또는 의견이 있으면 info@lacs.org, 562-908-4288 내선 번호 2303 또는 2310 으로 문의하십시오. 하수 수리에 대한 최신 정보는 www.lacs.org/sewagespill 을 방문하십시오.

귀하의 지속적인 인내와 이해에 감사드립니다.



LOS ANGELES COUNTY SANITATION DISTRICTS

Converting Waste Into Resources

212번가 복원 관련 업데이트

2022년 1월 6일 오후 1시 30분

어제 기준으로 Clean Harbours는 Lynton Ave.와 Moneta Ave 사이의 212번가에서 차도, 인도 및 도로의 소독을 완료했습니다. 이 작업은 1월 3일 월요일과 1월 5일 수요일에 나누어 이루어 졌습니다.

LACSD는 유출의 영향을 받은 모든 주민들에게 무료 세차 예약 또는 세차권을 마련했습니다. 계약자는 오늘 아침부터 세차를 시작했습니다.

LACSD는 공원도로 (Parkways)를 잔디 또는 가뭄 내성 옵션으로 교체하기 위해 조경사와 계약했습니다. 다음은 각 거주자가 선택할 수 있는 옵션입니다.

1. 잔디 (Grass) - 계약자는 수페리어 페스큐 (Superior Fescue) 잔디가 길거리에서 가장 흔하게 볼수 있는 잔디이기 때문에 수페리어 페스큐 (Superior Fescue) 잔디를 사용할 것입니다. 계약자는 새로운 잔디가 뿌리를 내릴 수 있도록 한 달 동안 계속해서 공원 도로 (Parkways)에 물을 줄 것입니다. 이후의 잔디 관리는 거주자의 책임입니다.
2. 가뭄 내성 (Drought-Tolerant) - 이 옵션은 물이 필요하지 않으며 유지 관리가 거의 또는 전혀 필요하지 않습니다.
 - a. 뿌리 덮개 (Mulch)
 - b. 완두콩 자갈 (Pea gravel)
 - c. 분해된 화강암 (Decomposed Granite)

공원도로 (Parkways)를 변경하기로 선택한 주민들을 위해 조경사는 1월 7일 금요일부터 기존 공원도로 (Parkways) 자재를 제거하기 시작합니다. 이 제거 작업은 대략 1월 18일까지 계속될 것으로 예상됩니다. 이후 잔디가 설치되고, 이어서 가뭄 내성 (Drought-Tolerant) 옵션이 진행 될 것입니다.

도로 반대편의 표토 (Topsoil)를 뿌리 덮개 (Mulch)로 교체하는 작업은 공원도로 (Parkways) 조경이 완료된 후 시작될 예정입니다.

청구, 우려 사항 또는 질문이 있는 경우 info@lacsds.org 또는 562-908-4288, 내선 2303 또는 내선 2310 으로 문의하십시오. 하수도 수리에 대한 최신 정보를 원하시면 웹사이트 www.lacsds.org/sewagespill를 방문하십시오.

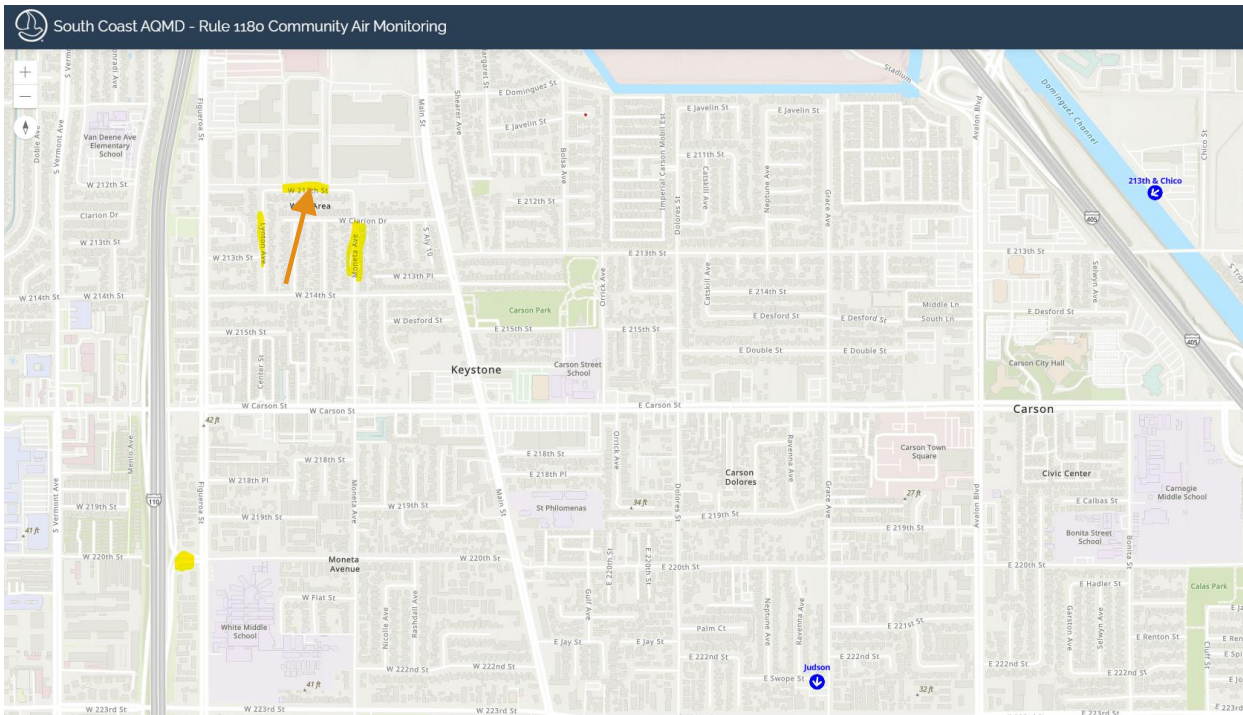
Attachment 4

Hydrogen Sulfide (H2S) Readings Near December 30, 2021 Sewer Spill

Source: AQMD [Rule 1180 Community Air Monitoring \(aqmd.gov\)](https://aqmd.gov) on 1/2/2022

Locations

As shown on the map, there are two monitoring locations near the spill site (orange arrow) on 220th Street between Lynton Avenue and Moneta Avenue: Hudson station (the southernmost blue dot) and the 213th and Chico station (the easternmost blue dot). The Hudson station is on 223rd Street and Grace Avenue, southeast of the spill site and is east of the Carson refineries. The 213th and Chico station is directly east of the spill site and east of the Dominguez Channel and 405 Freeway. H₂S levels were reviewed at both sites.



Time Period Evaluated

The time period reviewed was from 12/16/2021 to 1/2/2022, which includes two weeks prior to the incident for background levels. Background levels were compared to the levels after the spill which began on 12/30/2021 at approximately 2 pm.

Hydrogen Sulfide Levels

223rd and Chico Station

Blue arrows on the chart below indicate when the spill began and ended. As can be seen from the chart, pre-spill (background) levels range from about 2.7 parts per billion (ppb) to 4.3 ppb. After the spill, H₂S levels varied from 2.2 ppb to 2.8 ppb. Thus, the range after the spill never exceeded pre-spill levels.

Hudson Station

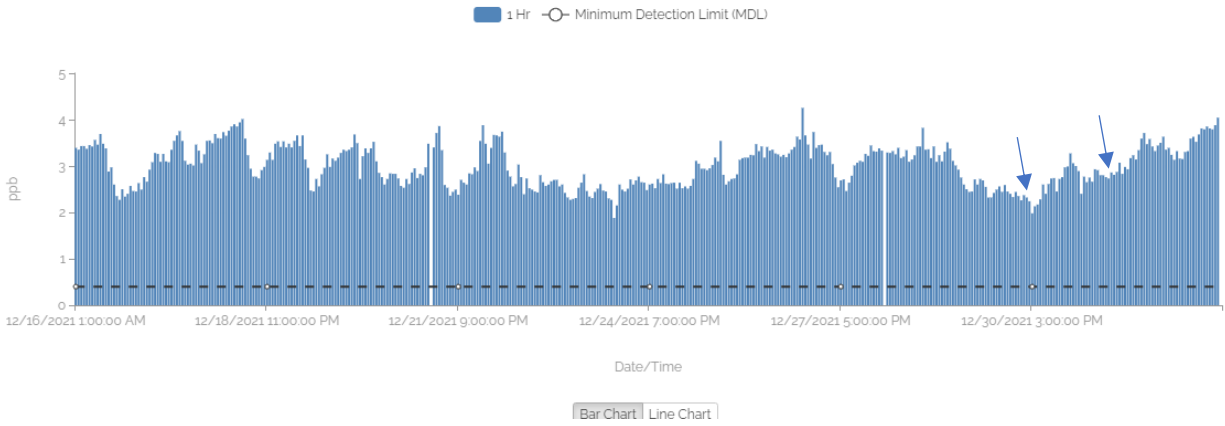
Like the previous chart, blue arrows on the chart below indicate when the spill began and ended. As can be seen from the chart, pre-spill levels vary from 0.2 ppb (sometimes even lower than the minimum detection level) to as about 6.0 ppb. After the spill, H₂S levels varied from 0.8 ppb to 2.2 ppb. Thus, the range after spill never exceeded pre-spill levels.

223rd and Chico Station



SEARCHED CRITERIA

Pollutant	Duration	From Date	To Date
Hydrogen Sulfide	1 Hr	12/16/2021	1/2/2022



Hudson Station



SEARCHED CRITERIA

Pollutant	Duration	From Date	To Date
Hydrogen Sulfide	Rolling 1 Hr	12/16/2021	1/2/2022

