

**Metro Wastewater Project List (20-Year)
(Prioritization Results- FY 13)**

Rank	Title	Description	Facility Type
1	MBC - Chemical System Improvements (PHASE 2)	<p>BACKGROUND: Posing safety hazards to O&M personnel, isolation valves and actuators in storage tank spill containment cells are inaccessible during rain or water flooding or a tank spill. Cluttered spill containment cells also violate OSHA safe access requirements. Electrical conduits at floor level are also subject to flooding submergence, potential damage to other electrical equipment in other areas connected by the conduits may occur. As dual chemical storage tanks are piped, isolation of one tank isolation cannot be done without isolation of both tanks, requiring shutdown of that entire particular chemical system when emergency repairs are needed. Single feed connection to the chemical feed pumps requires both dual storage/feed tanks to be shutoff if O/M repair is needed on that single feed pipe. There is potential for siphoning out the contents of a storage tank when a downstream pipe leaks or is ruptured. Potential spill in the digester gallery when an overhead single-walled chemical pipe leaks or ruptures. Discontinued Ferrous and Ferric Chloride pumps and oversized actuators require replacement. Perforated roof causes flooding of storage tank spill containment cells.</p> <p>SCOPE: This project entails improvements to the ferrous/ferric and polymer chemical storage and feed systems : remove piping, motorized valves , electrical conduits from spill containment cells; improve storage tank isolation valuing and overflow piping; provide necessary access platforms for tank isolation valves; prevent siphoning of chemicals from storage tanks-install air gap standpipes; provide secondary piping on single-walled overhead piping; replace/upgrade ferric/ferrous chloride pumps and valve actuators; provide added roof supports or revise to non-perforated roof.</p>	Treatment
2	South Metro Sewer Rehabilitation Phase 3B	<p>Background: This project will rehabilitate the remaining 5,000 feet of the 108 inch pipeline from Winship Lane to Pump Station 2. Sections of the South Metro Interceptor have deteriorated significantly due to the corrosive effects of sewer gases over 40 years. Scope may change based on further condition assessment.</p> <p>Scope: Rehabilitate 5,000 feet of the 108 inch pipeline from Winship Lane to Pump Station 2</p>	Pipeline
3	Pump Station 2 Power Reliability & Surge Protection	<p>Background: EPA recommends that facilities like Pump Station 2 be equipped with two separate and independent sources of electrical power. The current Pump Station 2 power system does not comply with the EPA recommendations. The Pump Station 2 facility currently has three feeds, two of the feeds are from the same substation. All feeds are limited to two pumps, except during emergency conditions. Losing two of the three feeds the pump station is limited to a 5 pump operation only. The proposed recommendation will improve the overall power reliability and enhance standby power at Pump Station 2. Also, this option will provide force main surge protection at all times during the stations operation and in the event of a total power failure.</p> <p>Scope: Project entails the removal and disposal of the two existing natural gas reciprocating engines and the installation of two 4.6 MW natural gas turbine generators and one 206 kW diesel startup generator. Also, the two existing engine drives will be replaced with new electric motors. This new configuration will provide 100% power back-up to SDG&E thus satisfying EPA recommendations. This option will also serve as a more reliable surge protection for the force mains in the event of a power failure.</p>	Pump Station
4	MBC Dewatering Centrifuge Replacement	<p>Background: Existing centrifuges have been in operation since 1998 and are nearing end of useful life as evidenced by increase in repair frequency. Capacity of existing units is also being approached and replacement units require increased capacity for future. This project will increase the production capacity of the dewatering centrifuges to accommodate plant shutdowns for maintenance and construction, to accommodate future flows, and to address diverse types of constraining operational factors that limit current capacity. To achieve the required capacity, the existing dewatering centrifuge units must be replaced with larger units. Replacement units must fit into existing designed space with minimal modifications to limit impact on operation and reduce changeover time.</p> <p>Scope: Replace 6 of the 8 existing Alfa Laval Sharples DS 706 units with Alfa Laval G2-120 units which have very similar physical size, configuration, and power requirement and increases the unit capacity from approx 225 gpm to 350 gpm. Replace at the rate of 2 units per year with only 1 unit out at a time, (required to maintain dewatering capacity)</p>	Treatment
5	MBC - Emergency Stream Discharge and De-chlorination Facility	<p>Background: This project includes upgrading the existing storm drain outfall (energy dissipater), erosion control, dechlorination facility, plus all necessary piping to convey RW from the plant into a stream. Implementing this project would offload the sewer system during extreme rain events to reduce the risk of spilling raw sewage. This would be an interim solution until long term capital projects are implemented; IPR, SBWTP, storage tank. A necessary component of the ESD includes building a 16 mgd - 30 mgd de-chlorination structure which will be build near the stream discharge facility. Treated recycled water from a 36" RW pipeline on the MBC side will pass through the de-chlorination facility and discharge it into San Clemente stream.</p> <p>Scope: This project will include building a dechlorination structure to dechlorinate approximately 16 mgd - 30 mgd of treated RW from 36" RW pipe at MBC side and discharge it into San Clemente stream. This structure will be build near stream discharge facility.</p>	Treatment
6	MBC - Odor Control Facility Upgrades	<p>Background: The odor control facility serves various solid treatment processes and is best with numerous operational problems causing costly O&M work, safety concerns and potential regulatory violations. This project will upgrade the existing odor control system at MBC. Several areas at the Metro Biosolids Center (MBC) have been identified as causing significant odor problems due to foul air collection deficiencies because of insufficient fan capacities and high ducting pressure losses, including poorly located foul air collection registers. Capacity Upgrades to fans, installation of variable-speed motors; removal/replacement of high pressure loss ducting with Installing access platforms at the monitoring instruments and air volume control dampers will provide safe and timely access for operation and maintenance personnel.</p> <p>Scope: This project will upgrade fan capacities to provide required air changes in foul air generating areas; install fumehood foul air collection system at the truck loadout stations and at the degritting room.</p>	Treatment
7	Wet Weather Storage Facility - Phase I	<p>Background: This would provide hydraulic relief to the Pump Station 2, the South and North Metro Interceptors, and the major trunk sewers. The project will reduce the risk of potential wet weather overflows, which may be caused by the capacity limitation of the Metro Pump Station 2 during extreme rainfall events. This project assumes Emergency Stream Discharge (ESD) of reclaimed water from the North City Water Reclamation Plant during heavy rain events to offload wet weather sewer system flows is allowed. ESD will be implemented only during extreme wet weather events when PS2 capacity is approached, and it would be an interim solution until long-term capital projects are completed.</p> <p>Scope: This project will construct a 7-MG Underground Storage Tank/Tunnel at the Liberty Station (vacated Naval Training Center) in year 2026.</p>	Storage
8	EM&TS Esplanade Boat Dock & Steam Line Relocation	<p>Background: A 40,000 square foot ocean monitoring laboratory was constructed and is now in operation. As a part of the Public Benefit Conveyance of this property, Public Utilities is required to construct a boat dock and to fund a portion of the esplanade improvements along our frontage. To gain future unobstructed access to the boat dock within the adjacent boat channel, and to provide unobstructed access to the future esplanade, the existing steam line must be underground. Public Utilities currently leases boat dock space at Driscoll's Wharf, and this project would eliminate this ongoing expense.</p> <p>Scope: This project provides for the design and construction of a boat dock, an esplanade (park) within an approximately 1.25 acre parcel located between the existing Public Utilities laboratory and adjacent boat channel, as well as placing approximately 600 feet of an above ground steam line underground. This portion is situated along the frontage of the boat channel adjacent to the EMTS Laboratory.</p>	Pipeline

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9	PS 1 & 2 Screenings Conveyer Overhaul, Screen Support System Replacement, and Influent Gate Replacement	<p>Background: The screenings at Pump Station 1 and 2 are captured by traveling screens and deposited onto a conveyer belt. The conveyer experiences problems relating to stretching of belt system and it continuously jumps off its track. The support systems for the screens are deteriorated and need to be replaced. The influent gates are at the end of their life and need to be replaced.</p> <p>Scope: This project will overhaul the existing conveyer and replace the influent gates.</p>	Pump Station
10	PLWTP Hydroelectric Generator Isolation Valve and Penstock Restoration	<p>Background: The PLWTP Hydroelectric generator produces \$360,000 worth of renewable electricity yearly. The 84-inch butterfly valve that isolates the internal components of the turbine from the ocean outfall is leaking. The inability of this valve to seal the hydro discharge from the outfall makes it practically impossible to perform inspections, maintenance, and repair to the turbine, it's piping, and other components within. Failure to replace this valve will lead to eminent shutdown of the hydroelectric and therefore loss of renewable energy revenue. This work is safety related and is the part of the Hydro Federal Energy Regulatory Commission inspection every three years.</p> <p>Scope: This project will provide a new valve on the discharge side of the Hydro. A temporary isolation of the discharge valve area is required so this work can be completed and for the penstock upgrades.</p> <ol style="list-style-type: none"> 1. Replace the 84-inch butterfly valve with an 84-inch gate valve. 2. Repair and upgrade the penstock. 3. Temporary isolation of the discharge valve area so work can be performed. 	Treatment
11	NMI/SMI Junction Structure Rehabilitation (Just upstream of PS 2)	<p>Background: Heavy corrosion of concrete and gate guides - Failure would prevent any work or repairs from being done to PS2 wetwell. Inspection of facility may result in change of scope.</p> <p>Scope: Project will replace the corroded concrete and stoplog gate guides.</p>	Pipeline
12	MBC - Cooling Water System Chillers Upgrade	<p>Scope: Implement major chiller equipment upgrades (mechanical, electrical, and instrumental) to solve chronic and costly operational problems due to obsolete technology costly and frequent repairs, lack of redundancy and lack of reliability. Upgrades include replacement of chillers, primary and secondary feed pumps, control valves and operators, piping, and control system upgrades.</p>	Treatment
13	NCWRP - Primary Sedimentation Tanks Odor Control System Upgrades	<p>Background: The present odor control system at the Primary Sedimentation Tanks was designed to treat foul air from the tanks with 0-25 ppm of hydrogen sulfides. Current actual H2S readings are from 10- 80ppm posing potential SDAPCD air discharge violations including public complaints. The foul air ducting at the OCS facility are leaking at the isolation dampers due to damaged seals and leaves of the butterfly valves.</p> <p>Scope: Upgrade the Odor scrubbers to treat foul air with 0-100ppm H2S by possibly adding one unit each of the carbon and packed chemical absorbers along with increased foul air volume withdrawal from the tanks.</p>	Treatment
14	NCWRP Grit Accumulation at the Headworks and Gates Upgrades	<p>Background: The influent channels of the NCWRP's headworks were designed for the ultimate future capacity of 45 mgd/90 mgd (average/peak). Present flows are at 20-30mgd average and 45 mgd peak. Thus, existing channel velocities are very low resulting in grit settling and accumulation. A channel air agitation system is provided but gets buried by the large volume of grit. Air flows should be increased but more important, channel configuration has to be revised (sectional area reduced) to provide proper channel velocities and eliminate grit settling. Removing the grit results in costly and tedious O/M work. There is potential to overspill from the channels if screens get blinded and channels have so much grit packings. The inlet and outlet gates at the two mechanical bar screens and at the bypass channel with trash rack (total of 6 gates) and the 2 influent gates at the grit tanks are corroded and require replacement.</p> <p>Scope: This project will modify the HW Influent channels to increase flow velocities and also increase air flows for more channel flow turbulence to prevent grit accumulation. Replace existing sluice gates at screens inlets & outlets and at grit tanks inlets (total 9 gates) .</p>	Treatment
15	South Bay Waste Water Treatment Plant Phase 1	<p>Background: This facility will treat flows generated in the South Bay Area including Sweetwater Area (Spring Valley and National City). The South Bay Secondary Treatment Plant and Sludge Processing Facilities Phase 1 will be constructed on the Dairy Mart Road site adjacent to the existing SBWRP by 2030 assuming current MER limit for PLWTP discharge. The Phase 1 of the South Bay Secondary Treatment Plant (SBSTP) will be 21 mgd and the Sludge Processing Facility will process the sludge from the existing 15 mgd SBWRP and the new 21 mgd SBSTP.</p> <p>Scope: Construct a 21 mgd secondary wastewater treatment plant and sludge processing facility.</p>	Treatment
16	South Bay Pump Station and Conveyance System Phase 1	<p>Background: Conveyance facilities are required to deliver sewage flows to the planned South Bay Wastewater Treatment Plant (Phase 1). The project consists of installing a diversion structure, 21 mgd pump station and force main, and a 103 mgd pipeline (build-out flows) from Sweetwater area to the planned South Bay Secondary Treatment Plant (Phase 1). Anticipating to be needed by 2030</p> <p>Scope: Construct 21 mgd pump station and force main as well as a 103 mgd pipeline.</p>	Pump Station
17	MBC - Valve Access Platforms Installation in Biosolids Storage Building	<p>Background: Existing piping/valves arrangement causes multiple trains of equipment to be removed from service when a valve or its actuator fails and needs to be repaired or maintained. Poor and unsafe access to these valves result in lengthy and costly repair times and impacting solids storage and delivery capacities. Existing configuration is hard to access valves especially those at elevated levels pose safety problems to O/M personnel.</p> <p>Scope: This project will install scaffolding, platforms and/or catwalks to provide access for valves maintenance.</p>	Treatment
18	PLWTP - Primary Sedimentation Tank Odor Control Facilities	<p>Background: The foul air generated from each primary sedimentation tank is collected and conveyed to a dedicated odor control system. The odor control system including ducting, tanks and appurtenant equipment which services the primary sedimentation tanks have experienced corrosion.</p> <p>Scope: This project will provide protective coatings on the ducting, tanks and appurtenant equipment to eliminate and prevent further equipment deterioration.</p>	Treatment

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19	PS 1 & 2 Main Pump Header Pipe Support Rehabilitation	Background: Heavy corrosion has been found at interface between steel sole plate and concrete pedestals at PS 1 & 2. Main header piping needs to be replaced due to corrosion. Scope: This project will install new pipe support system which includes seismic upgrades at PS1 and PS2	Pump Station
20	MBC - AHU Piping Modifications	Background: Chilled water valves and piping for air handling units are dangerously located above MCC's and pose risk of damaging electrical equipment in the event of a leak or spill from these assets during repair/ maintenance work. Potential safety hazard (electrocution) from damaged electrical equipment. Scope: Abandon existing AHUs in place. Install new outdoor packaged AHUs	Treatment
21	PS 1 & 2 Main Pump Motor speed controller upgrades	Background: Project needed as existing pump motor speed controllers are old and obsolete. This obsolete technology makes it difficult to obtain spare parts. Scope: Project proposes to overhaul the six speed controls at PS 1 & eight speed controls at PS2 on the main pump motors.	Pump Station
22	MBC - Biosolids Receiving Tanks Isolation and Drain Valves	Scope: This project will install tank isolation and drain valves for emergency and/or seismic events.	Treatment
23	NCWRP - Grit Piping Y-Access Ports	Scope: This project will entail the installation of Y-access ports (cleaning ports) to improve pipe cleaning. Due to adhesive nature of grit, it tends to plug and obstruct the existing 4-inch discharge piping of the grit piping to allow flushing to take place.	Pipeline
24	NCWRP - Vault Drainage System Implementation	Scope: This project will provide adequate drain system to prevent potential flooding and damage of mechanical including electrical equipment.	Pipeline
25	SBWRP - Emergency Strobe Lights	Scope: Install strobe lights in noisy process areas for alerting O&M staff of emergency calls/events	Treatment
26	MBC - Area 76: Control Room Emergency Air Supply	Background: During a power outage, foul air and hazardous gases accumulate in the centrifuge building, including the operation control room posing safety concern besides absence of Air-conditioned air for delicate electrical equipment and room comfort for the MBC operators. Scope: Provide HVAC capability for Area-76 Control Room during emergency MBC power shutdowns.	Treatment
27	NCWRP - Emergency Strobe Lights	Scope: Install strobe lights in noisy process areas for alerting O&M staff of emergency calls/events	Treatment
28	MBC - Emergency Strobe Lights	Scope: Install strobe lights in noisy process areas for alerting O&M staff of emergency calls/events	Treatment
29	PS 1 & 2 Roofing Project	Background: Pump Station 1 and 2 Main Operating building serves as a pump motor housing, as well as a control room, lunch room, women's locker room, storage room, and ventilation room. Improper roof water drainage (ponding) has been experienced on the second floor balcony next to the air intake room on the east side of the building. Failure may cause potential leaks into facility electrical instruments. Scope: Design and construct a new drainage system for the PS1 and PS2 Main Operating building.	Pump Station
30	NCWRP - Utility Trench Cover Replacement	Background: The utility trench covers are made of very heavy one-foot thick reinforced concrete blocks and are difficult to remove without a crane or a forklift, thus making it difficult to gain immediate access to the trench. Originally, these covers were designed to handle H2 traffic loading. However, the O&M staff believes that the design was excessive and should be revisited. Scope: The existing covers (at a number of strategic locations) will be replaced with lighter covers that can be removed without difficulty. The traffic load design for the covers need to be considered.	Treatment
31	NCWRP - Butterfly Valve Upgrade	Scope: This project is to upgrade the existing 24-inch butterfly valve to 36 or 48-inch on the tertiary filter's 48-inch main effluent pipe. The existing 24-inch valve is too small and incapable of carrying the required reclaimed water flow of 15 mgd.	Pipeline