

5 AGENCY CONSULTATION AND COORDINATION

The proposed project is planned to extend from the BPAWWTP to just south of RFK Stadium. If constructed, the facilities related to the ARPs would be in close proximity to properties and facilities owned by or under the jurisdiction of District, federal government agencies, and private entities. Because of its size and length of construction, the need for coordination with agencies and organizations external to DC WASA is implicit in a project of this type. Coordination is required for many reasons including:

- Property acquisition;
- Permission for ROW access;
- Previously planned projects in the area;
- Permitting;
- Geotechnical information;
- Physical land conditions;
- Access requirements/restrictions; and
- Scheduling.

5.1 Primary Stakeholders

The following agencies or entities are primary stakeholders for this project with respect to jurisdiction or ownership of properties.

5.1.1 District Department of Transportation and Federal Highway Administration

Coordination with DDOT and Federal Highway Administration (FHWA) includes both physical and functional interface areas. The physical interfaces include proximity to existing and planned District and federal infrastructure. The functional interfaces include coordinating hauling routes. Both local roads and interstate highways of interest to the project are under the jurisdiction of DDOT.

Coordination has been ongoing with DDOT and has included identification of several areas which require further evaluation. The primary concerns include:

- The proximity of the tunnel and planned shaft excavations to bridge foundations and abutments;
- Timing of planned improvements to or construction of new DDOT facilities in relation to timing of tunnel and shaft construction; and
- Coordination of areas used for construction staging, particularly in the Poplar Point area.

5.1.2 United States Military

DC WASA has held several meetings with representatives of both the Air Force and Navy regarding planned tunnel alignments and associated facilities at BAFB, the adjacent ANA, and the Washington Navy Yard. Ongoing coordination would need to address, but is not limited to, the following:

- Access for future investigations,
- Details of construction,
- Specific facility design and location,
- Potential security issues, and
- Required approvals.

5.1.3 National Park Service

The majority of the proposed project would be located on or under NPS-controlled property. As such, NPS is the co-lead agency for this EA. Extensive coordination has taken place with NPS to solicit feedback on alignment alternatives, assess potential impacts to NPS land, and to develop the EA. Coordination has resulted in the dismissal of certain alignment alternatives, most specifically, options that would have impacted the Anacostia Park Helipad location and portions of a forested area near the Malcolm X/I-295 interchange. Coordination with NPS was on-going throughout the EA process.

5.1.4 District Office of Planning

The District Office of Planning is facilitating a number of developments in the District that are in close proximity to the proposed project. Continued coordination is required with respect to the physical interfaces between the proposed project and developments to minimize potential impacts to the developments that could be caused by DC WASA's construction, as well as to minimize the potential for impacts on DC WASA's proposed project that could be caused by the construction of the planned developments. The timing of construction for the proposed project with respect to the timing of the various developments must also be coordinated.

5.1.5 Deputy Mayor's Office for Planning and Economic Development

The planned development of Poplar Point is of particular interest because of its proximity to the project elements.. Previous coordination has occurred between DC WASA, the Deputy Mayor's office, and Clark Realty (former site developer) that included discussions on the preliminary location of project infrastructure in relation to the planned development. Coordination activities would include obtaining formal agreements and necessary easements for the construction of the planned tunnels, shafts, and associated facilities.

5.1.6 Washington Metropolitan Area Transportation Authority

The planned tunnel alignments are in proximity to existing WMATA METRO facilities. During previous meetings, DC WASA obtained available geotechnical information from WMATA. This information would help ensure that WMATA facilities are avoided by proposed tunneling. The proper measures to monitor and protect WMATA facilities would be incorporated into final design and implemented during construction.

5.1.7 CSX Transportation, Inc.

The proposed tunnel alignments cross CSX facilities at several locations. Preliminary coordination has occurred with CSX. Typically, CSX becomes more involved in projects that potentially impact their facilities during the final design phase. As final design approaches, coordination would include obtaining formal agreements to allow crossings and identification of construction monitoring requirements of CSX facilities.

5.2 Permit Coordination

Coordination with government agencies and some private entities must also be undertaken in order to obtain the permits necessary to begin and complete construction, as discussed below.

5.2.1 Utility Companies

DC WASA is in the process of coordinating with utility companies that have underground (and in some cases, overhead) transmission lines or other apparatuses that would be affected by the proposed surface and near-surface structures during and after construction. There would also be a need to coordinate with certain utility companies to establish short-term services to support construction activities, as well as long-term service for the completed structures. The utility companies from which DC WASA would require permits include:

- Potomac Electric Power Company (PEPCO),
- Washington Gas,
- Verizon, and
- COMCAST.

The project design team and the contractor would need to obtain the existing utility records and field-verify the utility locations via site survey prior to the start of construction. Follow-up meetings would need to be arranged with the utility company representatives to discuss the project and establish preliminary contact regarding the provision for services, capacity and availability; any needed relocations; or the possibility of short-term or long-term discontinuation of the service.

5.2.2 Permitting Agencies

Numerous permits associated with Alternative B would be required from District, regional, and federal agencies. As such, coordination with the agencies listed in **Table 5.2-1** would be ongoing throughout the design and construction phases:

Table 5.2-1: Permitting Agencies	
Agency	Permit or Review
District Agencies	
Department of Consumer and Regulatory Affairs (DCRA)	Grading Permit, Public Space Permits, Sheeting and Shoring Permit, Utility Excavation Permit, Temporary Use Permits, Property Boundary Change
District Department of Public Works	Site Layout Permit
DDOT – Traffic Services Administration	Maintenance of Traffic Review
United States Commission of Fine Arts	Design review of all above ground facilities.
Deputy Mayor’s Office for Planning and Economic Development	Review of possible site acquisitions
DOH / Fire and Emergency Medical Services	Tunnel Ventilation
DDOE	Erosion and Sediment Control, Stormwater Management Plan, National Pollution Discharge Elimination System, Section 401 Water Quality Certification, Flood Hazard Area Rules
District Department of Parks & Recreation	Tree Protection Permit
Regional Agencies	
WMATA	Temporary/Permanent Easement Request
NCPC	Design Review
Federal Agencies	

Table 5.2-1: Permitting Agencies

Agency	Permit or Review
EPA	Surface Water Discharge Permit, Water Appropriation and Use Permit, Non-Tidal Wetlands and Waterways Permits, and 100-Year Floodplain (Non-Tidal Wetland and Waterways Permit)
BAFB (Department of Defense) or Department of the Air Force	Site Access Permit/Document Review
U.S. Navy	Site Access Permit/Document Review
USACE	Section 404 and/or Section 10 Permits
NPS	Temporary Construction Permit/Document Review
NMFS	Shortnose Sturgeon Consultation
U.S. Coast Guard	River Crossing and Notice to Mariners
Other	
CSX Corporation	Right of Entry Permit/Document Review

Coordination with the above identified organizations would be ongoing throughout the final design and construction of the project.

5.3 Rare, Threatened, and Endangered (RTE) Species

The Endangered Species Act (16 USC 1531 et seq.) mandates that all federal agencies consider the potential impacts of their actions on species listed as threatened or endangered. DC WASA corresponded with USFWS, NMFS, and the District Fisheries and Wildlife Division in October 2009 to determine if any RTE species exist within the study area. At this time, DC WASA has received responses from each agency, as discussed in **Section 1.7.5**.

5.4 Cultural Resources

Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on historic properties that are listed on or eligible for listing on the NRHP. DC WASA is conducting ongoing coordination with the SHPO, and other interested parties (such as community and preservation organizations) to satisfy the Act's implementing regulations mandate (See **Appendix G**).

6 LIST OF PREPARERS

Alverna R. Durham, Jr., Environmental Planner
Straughan Environmental Services Inc.

Chimere M. Lesane-Matthews, Environmental Planner
Straughan Environmental Services Inc.

Devin Ray
U.S. Fish & Wildlife Service
Chesapeake Bay Field Office

Drew Shelton, Environmental Planner
Straughan Environmental Services Inc.

John Nichols, Fisheries Biologist
National Marine Fisheries Service
Habitat Conservation Division

Julie Crocker, Fisheries Biologist
National Marine Fisheries Service
Protected Resources Division

Justin Haynes, Environmental Scientist
Straughan Environmental Services Inc.

Kate K. Traut, Environmental Scientist
Straughan Environmental Services Inc.

Ken Scarlatelli, Major Projects Manager
Straughan Environmental Services Inc.

Lisa Thurston, Environmental Scientist
Straughan Environmental Services Inc.

Leyla Emine Lange, Senior Environmental Scientist
Straughan Environmental Services Inc.

Nikki Radke, Environmental Scientist
Straughan Environmental Services Inc.

Matthew Rescott, Environmental Scientist
Straughan Environmental Services Inc.

Rob Pauline, Senior Environmental Planner
Straughan Environmental Services Inc.

Sarah Michailof, Cultural Resources Specialist
Straughan Environmental Services Inc.

- 1 Tim J. Harvey, Director of Environmental Assessments, Permitting, & Planning
- 2 Straughan Environmental Services Inc.
- 3 Amanda Deering, Environmental Planner
- 4 Straughan Environmental Services
- 5
- 6

1 7 GLOSSARY

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Accommodate	To change current conditions or to make room for change, without crowding or creating an inconvenience.
Adjacent	Having a common endpoint or border.
Adjustable Intake Damper	A movable plate for controlling the draft or air taken into an apparatus.
Advisory Neighborhood Commission (ANC)	An elected board representing a geographic subarea of the District charged with advising in policies and programs affecting traffic, parking, recreation, street improvements, liquor licenses, zoning, economic development, police protection, sanitation and trash collection, and the District's annual budget. There are 37 ANCs in the District.
Aldrin	An organo-chlorine insecticide (a pesticide used to treat seed and soil); widely used until the 1970s, when it was banned in most countries, because of its reputation as a persistent organic pollutant.
Ambient	Pertaining to the surrounding area or environment particularly used to describe background noise levels.
Anacostia River Tunnel (ART)	The CSO Storage/Conveyance Tunnel defined in the Consent Decree to extend from Poplar Point to the Northeast Boundary. The ART would extend from the Poplar Point/Junction Shaft (PP-JS) to the CSO 019 North Shaft (CSO 019-N).
Anacostia Waterfront Initiative (AWI)	Multi-agency program initiated aimed at improving environmental quality, creating new parks and trails, establishing new communities, and rebuilding infrastructure along both sides of the Anacostia River.
Anadromous (fishes)	Ascending rivers from the sea to freshwater for spawning/breeding.
Anomaly	Abnormality or deviation (often inexplicable)
Aquatic	Pertaining to water, either in the natural or built environment. Aquatic "habitats" include rivers, streams, lakes, ponds, etc. Aquatic "facilities" include swimming pools, boathouses, piers, etc.
Archaeological	Relating to material remains of past human life or activities. May refer to Native American remains or to remains of early American or European settlement.
Architect of the Capitol	Federal agency responsible for the maintenance, operation, development, and preservation of the US Capitol, congressional office buildings, Supreme Court, US Botanic Garden, and other related facilities.
BAFB Drop/Overflow Shaft	Tunnel overflow shaft located along the east bank of the Potomac River at BAFB. This shaft would serve to convey flows from the tunnel system to the BAFB Overflow Facility (BAFB-OF) when the CSO tunnels system reaches an overflow condition. It would also serve to drop flows into the BPT.
Benthic	Of or relating to or happening on the bottom, under a body of water.
Benzene / Toluene / Ethylbenzene / Xylene (BTEX) Compounds	Benzene, toluene, ethylbenzene, and xylene compounds are some of the volatile organic compounds (VOCs) found in petroleum derivatives such as gasoline, and have harmful effects on the central nervous system.

Biochemical (sometimes Biogeochemical) Oxygen Demand	A chemical procedure for determining the uptake rate of dissolved oxygen by the biological organisms in a body of water; used as an indicator of the quality of water; used as a gauge of the effectiveness of wastewater treatment plants; listed as a conventional pollutant in the U.S. Clean Water Act.
Blue Plains Tunnel (BPT)	The CSO Storage/Conveyance Tunnel extending from the BPT-DS at DC WASA's Blue Plains Advanced Wastewater Treatment Plant to the MPS-DC at WASA's Main and O Street Pumping Station site.
Blue Plains Tunnel Dewatering Shaft	The construction shaft at the downstream end of the BPT in which a tunnel dewatering pumping station and grit handling facilities would be constructed that would serve to dewater the combined storage/conveyance tunnel system during and following a wet-weather event. This shaft would serve as the mining shaft for BPT construction. The shaft is located on the northeast corner of the parking lot at the southwest corner of the intersection of Operations Road and Perimeter Road East at the BPAWWTP.
Brentwood Reservoir Junction Shaft	The construction shaft at the upstream end of the NEBT. It is located at the junction of the NEBT, RIBT and RSBT. It would serve as the extraction shaft for the TBM mining the NEBT, and it would serve as the mining shaft for the RIBT and the RSBT.
Carbon Absorption System	Use of activated carbon filters to absorb nitrogenous and other volatile gaseous compounds.
Catadromous (fishes)	Living in fresh water but migrating to marine waters to breed.
Catch Basin (a.k.a., storm drain inlet, curb inlet)	An inlet to the storm drain system that typically includes a grate or curb inlet where stormwater enters and a sump to capture sediment, debris and associated pollutants; also used in combined sewer watersheds to capture floatables and settle some solids; (catch basins act as pretreatment for other treatment practices by capturing large sediments); (performance of catch basins at removing sediment and other pollutants depends on the design of the catch basin, e.g., the size of the sump, and routine maintenance to retain the storage available in the sump to capture sediment.).
Carbonaceous Biological Oxygen Demand (CBOD)	A method-defined test measuring the depletion of dissolved oxygen by biological organisms in a body of water in which the contribution from nitrogenous bacteria has been suppressed. CBOD is a method-defined parameter and is widely used as an indication of the pollutant removal from wastewater. It is listed as a conventional pollutant in the U.S. Clean Water Act.
CERCLIS – No Further Remedial Action Planned (NFRAP)	Comprehensive Environmental Response, Compensation, and Liability Act –(Superfund) decision / notification that a fund site does not pose a significant risk and no further action is warranted in EPA's opinion.
Chlordane	Also called chlordane; an organo-chlorine compound that was used as a pesticide; sold widely in the U.S. until 1983 as an insecticide for crops like corn and citrus and on lawns and domestic gardens; used for termite control until 1988; now banned entirely because of concern about damage to the environment and harm to human health.

Chlorinated Solvent	Various classes of chemicals including (1) Methylene chloride: (used in pharmaceuticals, chemical processing, aerosols, food extraction, urethane foam blowing and surface treatment including paint stripping), (2) Perchloroethylene: (used in dry cleaning and metal cleaning), and (3) Trichloroethylene: (used in metal cleaning and specialty adhesives).
Circular De-aeration Facility	A hydraulic component within a Drop Shaft that allows for entrained air in the influent stream of Combined Sewage, introduced as a result of the drop, to separate from the liquid under a controlled condition.
Combined Sewer	A single pipe that carries both sanitary wastewater (dry weather flow) and stormwater runoff (wet weather flow).
Combined Sewage	A mixture of both sanitary wastewater and stormwater runoff.
Combined Sewer Overflow	The event of discharge of Combined Sewage into a Receiving Water Body that occurs when the Combined Sewage flow exceeds the carrying capacity of the CSS. CSO is the portion of the Combined Sewage flow that, during certain wet weather events, is not conveyed to the BPAWWTP for treatment or to the CSO Storage/Conveyance Tunnel for storage and subsequent treatment, but rather is discharged to a Receiving Water Body, such as the Anacostia River.
Combined Sewer Overflow Outfall	A structure that is a permitted control point in a Combined Sewer System that provides for the release of Combined Sewer Overflow into a Receiving Water Body.
Combined Sewer System	A network of Combined Sewers and other ancillary physical facilities that collect, convey, channel, hold, inhibit, or divert flow that originates from both sanitary wastewater (dry weather flow) and storm runoff (wet weather flow) sources.
Comprehensive Plan	A long-range (20-25 year) plan containing maps and policies to guide the future physical development of a city or county. It consists of "District" elements prepared by the Office of Planning and "Federal" elements prepared by the National Capital Planning Commission.
Conservation	Planned management of a natural or man-made resource to prevent exploitation, destruction, or neglect.
Construction Shaft	A general term for a shaft that is typically constructed to support the excavation, lining, and general fit-out of a tunnel. A construction shaft is typically located at both of the ends of a tunnel to be constructed. Construction shafts may be completed as permanent shaft structures designed to serve other long-term functions for the tunnel being constructed. For this project, construction shafts would also be constructed at the locations of Vortex Drop Facilities. Such shafts are referred as "Drop Shafts."
Contaminated site	Any parcel of land containing soil or groundwater which has been contaminated by past activities and which requires clean-up before re-use.
Corridor	Any major transportation route; may also be used to describe land uses along these routes.
Cumulative impact	The combined impact of a series of otherwise independent actions.

CSO 019 North Shaft	The construction shaft at the junction of the ART and NEBT. This shaft is also the northernmost of the two shafts to be constructed as part of the facilities at the location of CSO 019. It would function only as a tunnel overflow shaft to convey flows from the tunnels system to the COS 019 North Overflow Facility when the CSO tunnels system reaches an overflow condition.
CSO 019 South Shaft (CSO-019-S)	One of two construction shafts that would be completed at the CSO 019 site as part of the drop and tunnel overflow facilities at that location. The vortex drop component would serve to divert flows to the ART from the NEBTS. The shaft would also function as a tunnel overflow shaft to convey flows from the tunnels system to the CSO 019 South Overflow Facility when the CSO tunnels system reaches an overflow condition. The two shafts would straddle the CSO 019 outfall sewer, with one shaft being located to the south of the outfall sewer and one shaft being located to the north. The two shafts are located on the National Park Service property along the RFK Stadium Access Road and the outfall sewer location. This shaft would serve as the mining shaft for the ART.
Density	The quantity per unit volume, unit area, or unit length.
Dewatering	Construction dewatering, unwatering, or water control are common terms used to describe removal or draining groundwater or surface water from a riverbed, construction site, caisson, or mine shaft, by pumping or evaporation. On a construction site, this dewatering may be implemented before subsurface excavation for foundations, shoring, or cellar space to lower the water table. This frequently involves the use of submersible "dewatering" pumps, centrifugal ("trash") pumps, educators, or application of vacuum to well points.
Diversion Sewer	A near-surface conveyance pipe (conduit) that connects the underflow from a Diversion Chamber to a near-surface Junction Chamber or Vortex Drop Facility.
Diversion Chamber	A structure that includes a regulator to intercept a controlled amount of flow from an existing near-surface Combined Sewer and convey the intercepted flow into a Diversion Sewer. Flow regulation is performed through the use of Static Controls, such as a Horizontal and Vertical Fixed Orifice Regulators, Side-Spill Regulators, and Leaping Weir Regulators. A Diversion Chamber can provide either Partial Diversion or Full Diversion.
Doghouse Manhole	A precast riser section with openings (that look like an entrance for a dog house) placed over an existing pipe and set on a precast slab; the riser cemented to the base (and existing pipe) with mortar or concrete; and with the active pipe then broken out to expose the channel.
DRO	See Total Petroleum Hydrocarbons (TPH), Diesel Range Organics (DRO).
Drop Shaft	A construction shaft at the location of a Vortex Drop Facility that houses specific hydraulic components located downstream of the Vortex Drop Facility. These components are the Vortex Drop Pipe and Circular De-aeration Facility. Drop Shafts on this project follow a nomenclature that is described under Vortex Drop Facility
Ecosystem	An interacting system formed by a biotic community and its physical environment.

Environmental Assessment	A preliminary assessment of the likely influence a project may have on the environment, used to determine if more detailed evaluations of environmental impacts are needed.
Erosion	The loosening and transport of rock and soil debris by wind, rain, or running water.
Downgradient	The direction that groundwater flows; similar to 'downstream' for surface water
Drop Shaft	A Construction Shaft at the location of a Vortex Drop Facility that houses specific hydraulic components located downstream of the Vortex Drop Facility. These components are the Vortex Drop Pipe and Circular Deaeration Facility. Drop Shafts on this project follow a nomenclature that is described under "Vortex Drop Facility."
<i>E. Coli</i> (enteric bacteria)	<i>Escherichia coli</i> , any rod-shaped bacterium commonly found in the lower intestine of warm-blooded organisms (known as endotherms); most <i>E. coli</i> strains are harmless, and their ability to survive for brief periods outside the body makes them an ideal indicator organism to test environmental samples for fecal contamination.
Extraction Shaft	The Construction Shaft at the end of a tunnel that is used to extract the TBM at the conclusion of the tunnel excavation process (or tunnel drive). The Extraction Shaft is typically located at the upstream end of a tunnel to be constructed, but can be located at either the upstream or downstream end.
Environmental Justice	Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EPA has this goal for all communities and persons across the U.S. It will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process resulting in a healthy environment in which to live, learn, and work.
Fabridam	An inflatable barrier used to arrest the movement of water and raise the water levels behind (up-gradient from) itself.
Fecal Coliform	An assay intended to be an indicator of fecal contamination; more specifically of <i>E. coli</i> ; an indicator microorganism for other pathogens that may be present, (the presence of fecal coliform in water may not be directly harmful, and does not necessarily indicate the presence of feces).
Fugitive Dust	A type of nonpoint source air pollution - small airborne particles that do not originate from a specific point such as a gravel quarry or grain mill; originates in small quantities over large areas; significant sources include unpaved roads, agricultural cropland and construction sites.

Geoarchaeology	A recent field of research that uses the computer cartography, the Geographic Information System (GIS) and the Digital Elevation Models (D.E.M.) in combination with disciplines from Human and Social Sciences and Earth Sciences. A multi disciplinary approach using techniques of geography, geology and other Earth sciences (e.g., studying the natural physical processes that affect archaeological sites such as geomorphology, the formation of sites through geological processes and the effects on buried sites and artifacts post-deposition) to examine topics which inform archaeological knowledge and thought. This work frequently involves studying soil and sediments as well as other geographical concepts to contribute an archaeological study.
Gradient	A directional derivative or vector; a change in the value of a quantity (as temperature, pressure, or concentration) with change in a given variable and especially per unit distance in a specified direction.
GRO	See Total Petroleum Hydrocarbons (TPH), Gasoline Range Organics (GRO)
Groundwater	
Heptachlor Epoxide	
Horizontal Fixed Orifice Regulator	A type of regulator that may be included in a Diversion Chamber. The Horizontal Fixed Orifice Regulator consists of a fixed horizontal orifice and a weir across the existing near-surface Combined Sewer configured to create a positive head on the orifice. Flow topping the weir, which is the flow in excess of the amount of flow required to be diverted, continues downstream to the CSO Outfall.
Hydraulic Grade Line	The line connecting points of piezometric elevation (grade) along the path of flow.
Hydraulic Gradient	The direction of groundwater flow due to changes in the depth of the water table.
Hydric (Soils)	Formed under conditions of saturation, flooding, or ponding, long enough during the growing season to develop anaerobic conditions in the upper part of the soil; exhibiting redoxomorphic features (gleying or mottles, manganese concretions, etc.).
Hydrocarbons (also see TPH)	An organic compound consisting of hydrogen and carbon.
Hydrology	The study of movement, distribution, and quality of water throughout an environment; thus addressing both the hydrologic cycle and water resources.
Hydrophytic	Growing as a plant partly or wholly in water or wet conditions ("water loving").
Impairment	Water bodies rated as "impaired" by the states because they cannot support one or more of their designated uses. Impaired water bodies are places on the CWA Section 303(d) List.
Inorganic Constituent	Compounds considered being of a mineral, not biological, origin; in general, not containing carbon (bonded with oxygen/nitrogen/hydrogen).
Junction Chamber	A near-surface structure that accepts influent flow from multiple Diversion Sewers and discharges flow (effluent) into a single Junction Sewer.
Junction Sewer	A near-surface conduit that connects a Junction Chamber to a Vortex Drop Facility.
Junction Shaft	A construction shaft that serves as the connection point for two or more CSO storage/conveyance tunnel segments.

Leaping Weir Regulator	A type of regulator that may be included in a Diversion Chamber. The Leaping Weir Regulator consists of an orifice located in the invert of an existing near-surface Combined Sewer designed to allow the required diversion flow to drop down into a Diversion Sewer. Flow in the Combined Sewer in excess of the amount required to be diverted ‘leaps’ over the weir and continues downstream to the CSO Outfall.
LQG	See RCRA Large Quantity Generator (LQG)
LTCP Consent Decree (Consent Decree)	The legal documentation that describes and mandates the terms of agreement among the litigants in Consolidated Civil Action No. 1:CV00183TFH, filed in the United States District Court for the District of Columbia, with the date of entry of March 23, 2005.
Mean High Water (MHW) Level	A tidal datum. The average of all the high water heights observed over the National Tidal Datum Epoch. For NOAA tidal stations with shorter series, simultaneous observational comparisons are made with a control tide station in order to derive the equivalent datum of the National Tidal Datum Epoch.
Microtunneling (Machine)	A trenchless method of boring small-diameter pipelines; and the machines capable of being steered in such fashion.
Mining Shaft (Mining)	The Construction Shaft from which a tunnel is excavated, meaning the start of the tunnel drive. The Mining Shaft is typically located at the downstream end of a tunnel to be constructed, although it can be located at either the upstream or downstream end. It is the location where the TBM and all supporting equipment are inserted to complete the tunnel excavation, and it is the primary location from which the tunneling operation is supported while in progress.
Negative-pressure	Below atmospheric pressure.
Northeast Boundary Tunnel (NEBT)	The CSO Storage/ Conveyance Tunnel defined in the Consent Decree as being constructed approximately parallel to the existing Northeast Boundary Trunk Sewer (NEBTS). As planned, the NEBT would not parallel the existing NEBTS along Florida Avenue. Rather, it would extend from the CSO 019 North Shaft to the Brentwood Reservoir Junction Shaft, located on land adjacent to WASA’s Brentwood Reservoir near the intersection of New York Avenue and 9 th Street NE.
Ossuaries	Any container for the burial of human bones, such as an urn or vault
Partial Diversion	Only a portion of the flow in the Combined Sewer upstream of the Diversion Chamber is diverted through a Diversion Sewer and to the CSO Storage/Conveyance Tunnel. Required diversion rates are set in DC WASA’s NPDES Permit. However, the diversion rates to be used for design are the Peak Diversion Rates defined elsewhere in this Glossary. Flow exceeding the required diversion flow rate is discharged through the existing CSO Outfall, as necessary, to achieve the design tunnel hydraulic grade line.
Peak Diversion Rate	The peak flow rate required to be diverted from a Diversion Chamber through a Diversion Sewer and ultimately through a Vortex Drop Facility into the CSO Storage/Conveyance Tunnel.
Physiographic province	A landform region, an area delineated according to similar terrain that has been shaped by a common geologic history.

Plume	An elongated and mobile column or band (such as smoke, exhaust gases, or diffusing spread of liquid or water – i.e., the form of effluent in water or emissions in air).
Polyaromatic Hydrocarbons (PAHs)	Chemical compounds consisting of fused aromatic rings; occurring in oil, coal, and tar deposits; also produced as byproducts of fuel burning (fossil fuel or biomass). As a pollutant, they are of concern because some compounds have been identified as carcinogenic (cancer-causing), mutagenic (DNA-damaging), and teratogenic (deformation-related).
Polychlorinated Biphenyls (PCBs)	A class of organic compounds with 1 to 10 chlorine atoms attached to biphenyl, which is a molecule composed of two benzene rings; widely used for many applications, especially as dielectric fluids in transformers, capacitors, and coolants; exhibiting toxicity and classified as a persistent organic pollutant,
Rare, Threatened, and Endangered (RTE) Species	An inventory of species that are considered rare; a species that has only a few populations in the state and that faces threats to its continued existence, threatened; are likely to be at the brink of extinction in the near future, and endangered; are currently at the brink of extinction.
Reaeration (Re-aeration)	Condition when oxygen from the air dissolves into the water and raises (replenishes) the dissolved oxygen levels to ambient levels. This process reverses the effects of CBOD or BOD loads, over time.
RCRA – Large Quantity Generator (LQG) and Small Quantity Generator (SQG)	As part of the Resource Conservation and Recovery Act (RCRA), small quantity generators (SQGs): generate between 100 kg and 1000 kg of hazardous waste; Large Quantity Generators (LQGs) generate more than 1000 kg of hazardous waste per year.
Routine On-Site Determination Method	One of two approaches (routine and comprehensive) for making wetland determinations, in the USACE Wetland Delineation Manual; which also presents criteria for deciding the correct approach to use.
Residual Contaminants	Contamination which remains after steps have been taken to remove it; or allowing it to decay normally.
Short-circuiting	A low-resistance connection where current tends to flow, bypassing the rest of the circuit.
Side-Spill Regulator	A type of regulator that may be included in a Diversion Chamber. The Side-Spill Regulator consists of a weir parallel to the direction of flow in an existing Combined Sewer. Flow topping the weir, which is the flow excess of the amount required to be diverted, continues downstream to the CSO Outfall Structure.
Skid-mounted Odor Control Facility	A mobile scrubber system to treat emissions.
“Sorbed” or Sorption of Pollutants (Absorbed / Adsorbed)	“Sorption” refers to the action of both absorption and adsorption taking place simultaneously. As such it is the effect of gases or liquids being incorporated into a material of a different state <i>and</i> adhering to the surface of another molecule. Absorption is the incorporation of a substance in one state into another of a different state (e.g., liquids being absorbed by a solid or gases being absorbed by a liquid). Adsorption is the physical adherence or bonding of ions and molecules onto the surface of another molecule. “Sorbed” pollutants are therefore undesirable chemical constituents absorbed or adsorbed to molecular or ionic surfaces, within the system.
SQG	See RCRA Small Quantity Generator (SQG).

Total Petroleum Hydrocarbons (TPH) – Diesel Range Organics (DRO) and Gasoline Range Organics (GRO)	EPA methods for measuring TPH include constituents that are both heavier/extractable (DRO for quantifying #4-#6 fuel oil) and volatile (GRO for quantifying #2 fuel oil).
Total Suspended Solids (TSS)	A water quality measurement listed as a conventional pollutant in the U.S. Clean Water Act; this parameter measuring the retained solids or residue material; (not including Total Dissolved Solids, TDS).
Tunnel Boring Machine (TBM)	Also known as a "mole", a machine used to excavate tunnels with a circular cross section through a variety of soil and rock strata; a TBM can bore through hard rock, sand, and almost anything in between. Tunnel diameters can range from a yard (done with micro-TBMs) to almost 40 feet to date; used as an alternative to drilling and blasting (D&B) methods in rock and conventional 'hand mining' in soil; a TBM has the advantages of limiting the disturbance to the surrounding ground and producing a smooth tunnel wall compared to other methods of excavating.
Total Petroleum Hydrocarbons (TPH)	A term used to denote a large family of several hundred chemical compounds that originally come from crude oil. Crude oil is used to make petroleum products which can contaminate the environment. Because there are so many different chemicals in crude oil and in other petroleum products, it is not practical to measure each one separately. However, it is useful to measure the total amount of TPH at a site. Some chemicals that may be found in TPH are hexane, jet fuels, mineral oils, benzene, toluene, xylenes, naphthalene, and fluorene, as well as other petroleum products and gasoline components. However, it is likely that samples of TPH will contain only some, or a mixture, of these chemicals.
Tunnel Hydraulic Grade Line	The maximum permissible Hydraulic Grade Line, which is set at Elev. 8.00 DC Vertical Datum, for the CSO Storage/Conveyance Tunnels, Tunnel Overflow Facilities, interconnected side tunnels, branch tunnels, shafts and related facilities.
Tunnel Overflow Facility	<p>A structure designed to discharge dilute Combined Sewage from the CSO Storage/Conveyance Tunnel, when the Tunnel is full, into a receiving water body at a designed maximum rate of flow. A tunnel Overflow Facility is comprised of the following major components:</p> <ul style="list-style-type: none"> • Screening Facility: Percent retained would be site specific and would relate to available hydraulic head, available land/site, special requirements based on Facility location, and accessibility for maintenance. • Tidal Protection: Possibly a combination of fixed weir, bending weir, conventional tide gates, elastomeric check valves (duck bills) or hinged gates. • Flow measurement: Flow metering would be measured by level sensor over fixed weir, where applicable, or by channel flow measurement. • Overflow shaft to connect the Tunnel to the surface facilities. • Stop logs and sluice gates to safely isolate the CSO Storage Tunnel Overflow Facility from the Receiving Water Body, allowing for inspection and maintenance. <p>There are tunnel overflow facilities at two locations- BAFB and adjacent to</p>

	the CSO 019 outfall.
Total Suspended Solids (TSS)	A water quality measurement listed as a conventional pollutant in the U.S. Clean Water Act; this parameter was at one time called non-filterable residue (NFR), the dry-weight of particles trapped by a filter, typically of a specified pore size.
Unexploded Ordnance (UXO)	Explosive weapons (bombs, bullets, shells, grenades, land mines, naval mines, etc.) that did not explode when they were employed and still pose a risk of detonation. While "UXO" is widely and informally used, munitions and explosives of concern (MEC) is the current preferred terminology within the remediation community.
Vertical Datum	A reference system used to establish vertical coordinates of project facilities. For this Project, all vertical coordinates (elevations) shall be reference to District of Columbia Department of Public Works of Engineering Datum, referred to herein as DC DPW Datum or DC Vertical Datum.
Vertical Fixed Orifice Regulator	A type of regulator that may be included in a Diversion Chamber. A Vertical Fixed Orifice Regulator consists of a fixed vertical orifice and a weir across the existing near-surface Combined Sewer, configured to create a positive head on the orifice. Flow topping the weir, which is the flow in excess of the amount required to be diverted, continues downstream to the CSO Outfall Structure.
Volatile Organic Compound (VOC)	Compounds emitted as gases from certain solids or liquids; including a variety of chemicals widely used as ingredients in household products – (e.g., solvents in paints, varnishes, and wax), many cleaning, disinfecting, cosmetic, degreasing, and hobby products, and fuels (products that can release organic compounds).
Vortex Drop Facility	<p>A group of structures designed to convey diverted combined sewage flow from a near-surface Diversion Sewer or Junction Chamber to the CSO Storage/Conveyance Tunnel via a vortex drop pipe and at most locations, a circular de-aeration facility. A Vortex Drop Facility is comprised of the following major components:</p> <ul style="list-style-type: none"> • Influent pipe extending from the terminal point of the Diversion Sewer or Junction Sewer to the Approach Channel. • Approach Channel • Tangential Inlet <p>Each Vortex Drop Facility would:</p> <ul style="list-style-type: none"> • Include a set of stop logs to safely isolate the near-surface facilities from the CSO Storage/Conveyance Tunnel. Flow metering would be by level sensor over weir, where applicable, or by flow meter in Approach Channel. • Where needed, include a surge control system (tide gates) to prevent surge flow from the CSO Storage/Conveyance Tunnel traveling upstream of the influent pipe or conduit. <p>Vortex drop facilities are not named separately from the associated drop shafts or drop/junction shafts with the exception of the vortex drop facility associated with the R Street Drop/Junction Shaft, which is termed the 1st Street Vortex Drop Facility.</p>

Vortex Drop Pipe	Vertical pipe within a drop shaft that conveys diverted flows from a vortex drop facility to the tunnel, generally through a circular de-aeration facility.
Weir	A dam in a stream or river to raise the water level or divert its flow.

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