

*Water for the Future Program:
Delaware Aqueduct Rondout-West Branch Tunnel Repair FEIS
Glossary and Acronyms*

“A” weighting—The system of modifying measured sound pressure levels to simulate the actual response of the human ear to different sound frequencies.

ACM—asbestos-containing material

actuated signal—A traffic signal with timed limits for intersection movements that can automatically adjust timing for each part of an intersection depending on where traffic demand is highest.

air pollution—The presence of unwanted material in the air in sufficient amount and under such circumstances as to interfere significantly with human comfort, health, or welfare, or with full use and enjoyment of property. National and state ambient air quality standards identify pollutant concentrations not to be exceeded over a specified time.

AM peak period—Peak morning travel period (usually from 6 AM to 10 AM).

ambient air quality—A physical and chemical measure of the concentration of various pollutants in the outside air, usually determined over a specified time period (e.g., 1 hour, 8 hours).

ambient air quality standards—See *National Ambient Air Quality Standards*

ambient noise level—The total noise level in the acoustical environment, excluding a proposed project.

AMR—Automated Meter Readers

ANSI—American National Standards Institute

aqueduct—A closed conduit (pipe) or open channel designed to transport water from a remote source, usually by gravity.

aquifer—A geological formation that yields or is capable of yielding significant amounts of water to wells and springs.

AR—Agricultural Residential zoning district

arterial—A street that serves primarily through-traffic and provides access to abutting properties as a secondary function.

AST—above-ground storage tank

ATR—Automatic traffic recorder, which is used to collect data on roadway volumes by laying tubes across a road connected to machines for several days.

attenuation—To reduce in level. Generally, noise attenuates at a rate of 6 dB for each doubling of distance from the source.

AUV—autonomous underwater vehicle

BAC—Biologically active carbon. Carbon filter media that purify water by adsorption and biological activity.

BAT—Best Available Technology cited in Local Law 77.

benthic macroinvertebrate—Bottom-dwelling aquatic invertebrates visible to the naked eye; primarily insects, crustacean, mollusks, and worms.

BMP—Best management practices. Activities that minimize the impact of construction on the environment. BMPs include structural practices, such as building detention ponds, infiltration ditches, and installation of silt fences, and non-structural practices, including moving construction areas to less sensitive zones, timing activities when impacts are minimized, and providing alternative habitats for wildlife.

buffer zone—An area surrounding an environmentally sensitive site that alleviates impacts to it.

build year—A year of analysis used to assess impacts.

CAA—Clean Air Act

CAFE—corporate average fuel economy

CAL3QHC model—Mathematical dispersion model for predicting air pollution by simulating carbon monoxide and particulate matter concentrations near roadway intersections.

capacity—Room available for vehicles to queues along a roadway segment before the queues spill back to the adjacent intersection.

Catskill system—A series of interconnected reservoirs located in New York State's Catskill region. These reservoirs supply water to New York City's drinking water system through a series of gravity-fed aqueducts.

CBS—chemical bulk storage

CEQR—City Environmental Quality Review, the local New York City law set forth by Executive Order No. 91 of 1977, governing environmental review for actions undertaken by New York City agencies.

CEQR Technical Manual—A guidance document in the procedures and substance of New York City's environmental quality review process for use by government agencies, project sponsors, and the public.

cfs—cubic feet per second

CHASP—Construction Health and Safety Plan

CHG&E—Central Hudson Gas & Electric

City Tunnel No. 1—Activated in 1917 and in continuous operation for almost 90 years, City Tunnel No. 1 is currently the primary source of Manhattan’s water supply. It has a capacity of approximately 1 billion gallons per day of water and brings water, originating in the Catskill and Delaware systems, from the Hillview Reservoir into New York City.

City Tunnel No. 2—Activated in 1936, City Tunnel No. 2 delivers Catskill and Delaware system water from the Hillview Reservoir into New York City. It has a capacity of approximately 1 billion gallons per day.

City Tunnel No. 3—Under construction since 1970, City Tunnel No. 3 is being constructed to facilitate inspection and repair of City Tunnel No. 1, increase distribution system redundancy, maintain sufficient water pressure in the neighborhoods it serves, and improve water supply and pressure reliability.

CMP—Coastal Management Program

CO—carbon monoxide

CO₂e—carbon dioxide equivalent

cofferdam—A dam placed in the water and used to isolate a portion of a water body for dewatering.

confluence—A flowing together of two streams.

contiguous—Near, next to, or adjacent.

CPP—Construction Protection Plan

Croton system—New York City’s oldest water supply system. The Croton system, located east of the Hudson River, provides approximately 10 percent of New York City’s water supply.

culvert—A pipeline that passes under a road.

CWA—Clean Water Act

cycle failure—A condition when motorists may have to wait for more than one green phase to proceed through an intersection.

CZM—Coastal Zone Management

dB—See *decibel*

dBA—A-weighted decibel. A sound pressure level that simulates the human ear’s sensitivity to pitch.

dbh—diameter at breast height

decibel (dB)—The unit for measuring noise, which is 10 times the logarithm of the ratio of the sound pressure squared to a standard reference pressure squared.

DEIS—Draft Environmental Impact Statement

Delaware system—A series of interconnected reservoirs, located in New York State’s Delaware region. These reservoirs supply water to New York City’s drinking water system through a series of gravity-fed aqueducts.

De minimis criteria—The minimum incremental increase in 8-hour average carbon monoxide levels that constitutes a potential significant adverse air quality impact as defined by the 2010 *CEQR Technical Manual*.

DEP—New York City Department of Environmental Protection

dewatering—The removal of water from solid material or soil by wet classification, centrifugation, filtration, or similar solid-liquid separation processes (compare with *unwatering*, below).

DO—dissolved oxygen

DOC—diesel oxidation catalysts. An air pollution control device that reduces particulate matter (PM) emissions.

DPF—diesel particulate filters. An air pollution control device that reduces particulate matter (PM) emissions.

east of Hudson (study area)—Refers to the study area in Dutchess County, NY, surrounding the east connection site (Shaft 6) that was selected to analyze the effects of Project 1 construction.

ECL—Environmental Conservation Law

EFH—essential fish habitat

EIS—Environmental Impact Statement

EPA—U.S. Environmental Protection Agency

ESA—Environmental Site Assessment

FEIS—Final Environmental Impact Statement

FEMA—Federal Emergency Management Agency

FFMP—Flexible Flow Management Program

final acceleration delay—Delay from accelerating from a complete stop to free-flow conditions speed.

footcandle—A unit used to measure light illumination.

fps—feet per second

fugitive emissions—Air pollution that does not originate from a smokestack or tailpipe. For example, windblown dust from vehicles traveling on unpaved roads.

FY—fiscal year

GAC—granular activated carbon

GB—General Business zoning district

GHG—greenhouse gas

GIS—Geographic Information System

gpd—gallons per day

gpm—gallons per minute

GWP—global warming potential

HAL—high accident location

HASP—Health and Safety Plan

hazardous waste—A substance, as defined under the Federal Resource Conservation and Recovery Act (RCRA), that is chemically reactive, ignitable, corrosive, or toxic.

HCM—Highway Capacity Manual. A national standard methodology used by traffic engineers to analyze roadway intersection operations.

HFC—hydrofluorocarbon

Hp—horsepower

IESNA—Illuminating Engineering Society of North America

initial deceleration delay—Delay from vehicles slowing down as they approach an intersection.

inundation plug—Plugs consisting of gravel and poured concrete that would be constructed in the existing RWBT during Project 1 to block off the leaking area of the RWBT in Roseton in the event that water inflow from the Hudson River exceeds DEP's ability to pump water out of the tunnel during construction of Project 2B.

L₁₀—Statistical sound level descriptor used to indicate sound levels that are exceeded 10 percent of the time. For example, the *CEQR Technical Manual* recommends an interior noise limit of 45 dBA L₁₀₍₁₎, where L₁₀₍₁₎ is the noise level exceeded 10 percent of the time over a 1-hour period. See also *L_{eq}* below.

L_{eq}—Equivalent sound level, or an energy average sound level, usually specified over a period of time. This is the constant sound level that, in a given period, conveys the same sound energy as the actual time-varying sound.

L_{max}—A measurement of a maximum instantaneous sound level.

level of service (LOS)—A set of descriptive characteristics used to indicate the quality of transportation service provided, including characteristics that are quantifiable (e.g., frequency, travel time, vehicle delay). Levels of service are usually qualified with letter designations, ranging from “A” (LOS A) with the least amount of congestion to “F” (LOS F) with the greatest amount.

LIAW—Long Island American Water

Local Law 77—Adopted December 22, 2003, the New York City Administrative Code §24-163.3 requires that any diesel-powered non-road engine with a power output of 50 hp or greater that is owned by, operated by or on behalf of, or leased by a City agency shall be powered by ultra low sulfur diesel fuel and utilize the best available technology (BAT) for reducing the emission of pollutants, primarily particulate matter and secondarily nitrogen oxides.

LT2ESWTR (or LT2)—Long Term Enhanced Surface Water Treatment Rule

LOS—See *level of service*

LWRP—Local Waterfront Revitalization Program

mgd—million gallons per day

mitigation—Measures designed to lessen or eliminate the adverse impacts resulting from a proposed project or action. Mitigation for Project 1 is discussed in Section 2.19 of the EIS.

MOBILE6.2—Vehicle emissions simulation model developed by the Environmental Protection Agency to predict emissions from on-street motor vehicles.

mobile source—Vehicular sources of air pollution, such as automobiles, trucks, and buses.

MSGP—New York State Department of Environmental Conservation Multi-Sector General Permit

MTMC—Manual turning movement counts of vehicles turning left, right, or proceeding straight through an intersection.

muck—excavated mud and rock debris from shaft construction and bypass tunneling operations that would be temporarily stored on and removed from the connection sites.

MWC—Middlesex Water Company

MWh—megawatt-hour

MY—model year, of a vehicle

NAAQS—See *National Ambient Air Quality Standards*

National Ambient Air Quality Standards (NAAQS)—Standards established by Congress under the Clean Air Act for six major air pollutants (carbon monoxide, nitrogen oxides, photochemical oxidants or ozone, inhalable particulates, sulfur dioxide, and lead). These are also New York State’s air quality standards.

National Register of Historic Places (N/R)—The federal list of buildings and sites determined to have historic significance, established by the National Historic Preservation Act.

New York State Drinking Water Revolving Fund Program—The Safe Drinking Water Act, as amended in 1996, established the Drinking Water State Revolving Fund to make funds available to drinking water systems to finance infrastructure improvements. The program also emphasizes providing funds to small and disadvantaged communities and to programs that encourage pollution prevention as a tool for ensuring safe drinking water. (*Source:* www.epa.gov)

New York State Pollutant Discharge Elimination System (SPDES)—SPDES (pronounced “SPEE-deez”) is a state permit program under Article 17, Title 8, of the New York State Environmental Conservation Law to protect the state’s waters from polluted discharges.

nitrous oxide (N₂O)—An air pollutant and one of the primary greenhouse gases.

nitrogen dioxide (NO₂)—An air pollutant and precursor to ozone.

nitrogen oxides (NO_x)—A group of air pollutants that contribute to the formation of ozone.

NJAW—New Jersey American Water

NJDEP—New Jersey Department of Environmental Protection

NJDWSC—North Jersey District Water Supply Commission

NJWSA—New Jersey Water Supply Authority

NMFS—National Marine Fisheries Service

NMHC—non-methane hydrocarbon

non-attainment area—The Environmental Protection Agency’s classification for an area or region where federal ambient air quality standards are not being met.

NRCS—Natural Resources Conservation Service

NTNCWS—Non-Transient Non-Community Water System

NWI—National Wetlands Inventory

NYCL—New York City Landmarks and Historic Districts

NYCMWFA—New York City Municipal Water Finance Authority

NYCRR—New York Codes, Rules, and Regulations

NYNHP—New York Natural Heritage Program

NYSBA—New York State Bridge Authority

NYSDEC—New York State Department of Environmental Conservation

NYSDOH—New York State Department of Health

NYSDOT—New York State Department of Transportation

NYSOPRHP—New York State Office of Parks, Recreation, and Historic Preservation

NYSSMDM—New York State Stormwater Management Design Manual

off-peak period—Periods of the day outside the busiest travel periods.

OSHA—U.S. Occupational Safety and Health Administration

ozone—(O_3) An unstable form of oxygen formed by a photochemical reaction of atmospheric gases with solar ultraviolet radiation. While a valuable component of the upper atmosphere, it is a harmful air pollutant in the lower atmosphere and contributes to the formation of smog.

particulate matter—Airborne particles consisting of a variety of materials, such as dust, soot, and aerosols.

PCB—See *polychlorinated biphenyls*

PCE—passenger car equivalent

peak hour—The hour during which the highest number of vehicles is found to be passing over a section of a lane or roadway.

PM₁₀—Particulate matter of 10 microns or less. Particulates of this size are small enough to be inhaled.

PM_{2.5}—Particulate matter of 2.5 microns or less.

polychlorinated biphenyls (PCBs)—A class of semi-volatile organic compounds (SVOCs) that were commonly used in electrical equipment, especially transformers.

potable—Used to describe water that is suitable for human consumption.

ppm—parts per million

progression—The coordination of signal timings so that a group of vehicles traveling on a street arrive at a succession of green lights and proceed through multiple intersections without stopping.

PWS—Potable Water Source

RAP—Remedial Action Plan

REC—recognized environmental conditions

receptor—An off-site discrete location chosen to help address air, noise, and vibration impacts. They are locations where the general public may be directly exposed to existing or new sources of air, noise or vibration. For noise and vibration, they are sensitive locations, such a land use, community facility, or open space considered sensitive to potential environmental impacts that is chosen for assessment of potential impacts. A receptor is near, but not at, the source of air pollution, noise, or vibration being analyzed.

RGGI—Regional Greenhouse Gas Initiative

RIMS II—Regional Input-Output Modeling System

RRv—runoff reduction volume

runoff—The part of precipitation that ends up in surface water bodies.

RWBT—Rondout-West Branch Tunnel

SCFWH—Significant Coastal Fish and Wildlife Habitat

scoping—The process of defining the studies to be undertaken for an Environmental Impact Statement.

semi-volatile organic compound (SVOCs)—Organic compounds that exhibit some evaporation under normal circumstances

SEQRA—New York State Environmental Quality Review Act, which requires New York State agencies to examine the environmental effects of their discretionary actions.

shaft—A vertical passage sunk into the earth that can convey water or be used as an access point for workers and equipment for construction efforts, such as Project 1.

shotcrete—Premixed concrete or mortar applied to a surface by spraying from a hose.

SHPO—State Historic Preservation Office

signalized—Refers to roadway intersections that have traffic lights.

SIP—See *State Implementation Plan*

S/NR—State and National Registers of Historic Places

SO₂—See *sulfur dioxide*

soil borings—Deep, cylindrical soil samples taken to ascertain geological conditions and often used to assist in the determination of whether archaeological resources or hazardous materials are found on the site.

solid waste—Waste from residential, medical, commercial, or industrial sources that is considered non-hazardous.

SPCC (40 CFR 110, 112)—See *Spill Prevention, Control, and Countermeasures*

SPDES—See *New York State Pollutant Discharge Elimination System*

Spill Prevention, Control, and Countermeasures—A federal policy established pursuant to (40 CFR Parts 110 and 112) that limits discharges to navigable waters so as not to produce visible sheens.

spoils—Soil, crushed rock, and other material excavated from tunnel construction.

SR—New York State Register of Historic Places

SRF—New York State Revolving Fund Program

SSURGO—Natural Resources Conservation Service’s Soil Survey Geographic Database

staging area—An area from which certain construction activities (such as storage, delivery of materials, and layover of equipment) occur.

State Implementation Plan (SIP)—A SIP is a state plan mandated by the Clean Air Act to bring an area into compliance with the National Ambient Air Quality Standards for a given air pollutant.

State Register of Historic Places—The state list of buildings and sites determined to have historic significance, established by the New York State Historic Preservation Act.

stopped delay—Delay from vehicles sitting at an intersection approach.

sulfur dioxide (SO₂)—An air pollutant mainly associated with the combustion of sulfur-containing fuels such as diesel and fuel oil.

SVOC—See *semi-volatile organic compound*

swale—A grass-lined depression used to drain water.

SWPPP—Stormwater Pollution Prevention Plan

TBM—tunnel boring machine

Tc—time of concentration

TMC—turning movement count

trip—A single or one-way movement to or from a location.

turbidity—The opaqueness (reduced clarity) of water or any other fluid due to the presence of suspended sediment or some other matter.

ULSD—ultra-low sulfur diesel

unsignalized—Refers to roadway intersections that do not have traffic lights.

unwatering—The process of draining and emptying water from water tunnels, shafts, etc., to enable construction, maintenance, or other work (compare with *dewatering*, above).

USACE—U.S. Army Corps of Engineers

USDA—U.S. Department of Agriculture

USFWS—U.S. Fish and Wildlife Service

USGS—U.S. Geological Survey

UST—Underground storage tank

UWWD—United Wappinger Water District

v/c—See *volume-to-capacity ratio*

vehicle queues—The lines of traffic that form while vehicles wait at an intersection.

VMT—vehicle mile traveled

volatile organic compound (VOC)—A family of highly evaporative organic materials used in a variety of industrial applications, such as paints and solvents and a major constituent of petroleum-based fuels.

volume—The number of passengers or vehicles that can be accommodated by a train, train platform, train tracks and tunnels, stairwell, mezzanine, bus, sidewalk, or street's traffic lanes (or combination of any of the previous).

volume-to-capacity ratio (v/c)—To determine the severity of crowding in a transportation system, volumes (the amount of passengers or vehicles) are compared with capacities (the ability of such a system to carry travelers from one point to another during a specified time frame). Higher v/c ratios indicate greater congestion.

WAWN—Water Authority of Western Nassau County

west of Hudson (study area)—Refers to the study area in Orange County, NY, surrounding the west connection site that was selected to analyze the effects of Project 1 construction.

WZTCP—Work Zone Traffic Control Plan

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