

# Upper South Creek Advanced Water Recycling Centre

Sydney  
**WATER**

## Environmental Impact Statement Volume 5 Glossary and References

September 2021


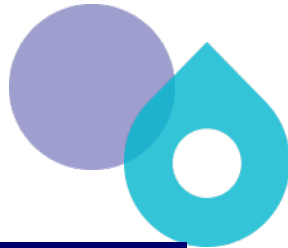






# 16 Glossary and Terms

## 16.1 Glossary



Term	Meaning
3d photomontage	The process of making a composite image by mixing a 3- dimensional building model and a photograph
50th percentile value	50 percent of sample values (for example flow, concentrations) are lower than this value. 50 percent of sample values are above this value. Equivalent to median
95th percentile value	95 percent of sample values (for example flow, concentrations) are equal to or lower than this value
Aboriginal artefact	An item of Aboriginal heritage origin
Acid Sulfate Soils	Soils that contain appreciable sulfide and may general sulfuric acid where exposed to atmospheric oxygen and rainfall
Advanced treated water	Water that is treated to an advanced level, including microfiltration, ultrafiltration and reverse osmosis to filter out very fine particles. Also known as very high quality treated water
Alluvial river	The bed and banks of the river are made up of mobile sediment and/or soil and the channel is shaped by the magnitude and frequency of flooding
Ambient conditions	The existing condition of the receiving waterway including water quality, bathymetry and flow rates
Anabranh	An anabranh is a section of a river or stream that diverts from the main channel of the watercourse and rejoins the main watercouse downstream
Anaerobic digestion	Anaerobic digestion is part of the wastewater treatment process that occurs where bacterial processes break down organic matter to produce methane gas, which can be used to generate electricity
Ancillary infrastructure	Infrastructure that supports the operation of the AWRC and project pipelines
Annual Exceedance Probability	A measure of the frequency of a rainfall event. It is the probability that a given rainfall total accumulated over a given duration will be exceeded in any one year. For example, a one per cent event is a rainfall event with a one per cent chance of being exceeded in magnitude in any given year
Annual median concentrations	The median concentration of a water quality parameter over a one year period



Term	Meaning
Aquatic ecology	The study of plants and animals that live in rivers and streams
Area of Environmental Concern	Areas of land that may be sources of contaminants of potential concern, the presence which is determined through intrusive and desktop investigation
Average dry weather flow	The average amount of incoming wastewater the AWRC receives during operation over a 24 hour period under dry weather conditions
Backwater	Part of a river where there is little or no water movement
Bankfull	The maximum water level in the waterway channel before overtopping into the floodplain occurs
Bathymetry	The measurement of the depth of water in a watercourse
Bioavailable nutrients	Nutrients that are readily available for microbial and plant uptake
Biodiversity stewardship site	Land covered by a biodiversity stewardship agreement to permanently protect and manage land to improve biodiversity value
Bioenergy	A form of renewable energy that is derived from recently living organic materials (biomass)
Biosolids	Organic solids produced during wastewater treatment is processed to convert it into biosolids. Biosolids are a safe fertiliser product and can be used in farming and gardening as an economic alternative to chemical fertilisers
Biota	The animals and plants living in a particular habitat.
Brine	Concentrated solution of salt and other chemicals in water; a by-product of the reverse osmosis process.
Brine pipeline	A pipeline that is used to transport brine for disposal.
Catchment	The land area contributing to surface runoff and flow within rivers and creeks
Cease to flow	Zero flows within the waterway
Centralised servicing	Provision of bulk treatment of wastewater in a central location, where the treatment facilities are generally large.
Channel migration	A process that involves the lateral migration of an alluvial river channel across its floodplain
Circular economy	A circular economy values resources by keeping products and materials in use as long as possible. In a water context, circular economy may include use of water, energy and materials to restore and regenerate the natural environment



Term	Meaning
Co-digestion	The process of treating different types of organic waste in a digester
Cofferdams	A watertight enclosure from which water is pumped to expose the bed within a waterway to allow safe construction
Co-generation	A process where gas generated in wastewater treatment is delivered to engines that convert it to electricity. A type of renewable energy
Confluence	The place where two or more waterways join
Connection with Country	The interdependent relationship between Aboriginal and Torres Strait Islander people and their ancestral lands and waters. It includes a strong spiritual connection sustained by the environment and cultural knowledge. (definition based on content at <a href="https://www.commonground.org.au/learn/connection-to-country">https://www.commonground.org.au/learn/connection-to-country</a> )
Contaminated land	The presence within land of a substance at a concentration above the level the substance is normally present in the land and that may also harm human health or any other aspect of the environment
CORMIX near field and toxicity modelling	Numerical software for the analysis of near field mixing of wastewater in watercourses
Cyanobacteria	Also called 'blue green algae'. Microscopic organisms that live in waterways
Decentralised servicing	Provision of treatment of wastewater locally in the catchment. The treatment facilities are generally smaller in capacity
Detention basin	Surface storage areas or facilities that provide flow control through controlling stormwater runoff.
Dewatering	The removal of groundwater or surface water by various solid-liquid separation processes.
Digital Elevation Model	A representation of the bare ground (bare earth) surface of the earth excluding trees, buildings and any other surface objects
Disinfection	The process of destroying bacteria and pathogens in wastewater. This can be achieved mechanically, chemically or through ultra violet radiation
Dispersive soils	Dispersive soils occur when clumps of soil collapse as individual clay particles disperse when the soil gets wet by fresh water.
Dissolved oxygen	The amount of oxygen present in water
Drawdown	The lowering of the surface level of the water table caused by dewatering (pumping) activities



Term	Meaning
Dry year	A representative dry climatic year. Selected as 2013/14 in key waterway assessments
Ecohydraulics	Instream water conditions that relate to habitat such as velocity, shear stress and wetted perimeter
Ecohydrology	The study of linking ecosystem response to instream water conditions
Ecosystem	A community of organisms and their physical environment interacting together
Effluent	Partially treated wastewater that is passing through the different stages of treatment at the AWRC
End-of-pipe concentrations	Water quality concentrations predicted at the end of a pipe where it releases to the environment
Environmental flows (e-flows)	Water that is released from the dam to maintain downstream river health. The project proposes treated water from the AWRC can replace some of these drinking water environmental flows
Environmental flows (e-flows) pipeline	A pipeline that transports treated water from the AWRC to Warragamba River
Environmental planning instruments	Collective name for Local Environmental Plans (LEPs), State Environmental Planning Policies (SEPPs) and Regional Environmental Plans (REPs) under the <i>Environmental Planning and Assessment Act 1979</i> (NSW)
Ephemeral waterway	Waterways which generally only flow during or after rainfall
Eutrophication	Excessive plant and algal growth in waterways due to the increased availability of nutrients
Evapotranspiration	A natural process where water is removed from an area with vegetation and into the atmosphere
Excavated Natural Material	Excavated Natural Material is naturally occurring rock and soil that has been excavated from the ground, is mostly natural material (98% by weight) and does not meet the definition of Virgin Excavated Natural Material
Fauna	Animals
Flood	A high stream flow which overtops the riverbank and inundates land that is usually dry
Flood Hazard	The relationship between velocity and depth for floods within flood-prone land

Term	Meaning
Flood modelling	A combination of hydrologic and hydraulic models used to describe flood behaviour
Flood-prone land	The maximum extent of floodplain inundation caused by the Probable Maximum Flood
Floodplain	Area of land next to a river or creek which is subject to inundation from high stream flows
Flora	Plants
Flow conveyance	Flow carrying capacity (available space for a given flow) of the channel
Flow (in waterways)	The flow of water in rivers and creeks. Water flowing in rivers or creeks comes from surface runoff and groundwater.
Flow gauge	A measuring device installed on a river or creek to measure how fast and how much water is flowing
Flow regime	Patterns of high and low flows within a stream, river or creek
Flow splitter	A mainly below-ground structure that is used to divide pipeline flow into two or more parts and divert to different places
Flushing times	Time to replace the water within a river with new input from other waterways, rainfall, etc
Friable	Materials that are easily crumbled
Geomorphology	The study of the physical form and function of features on the earth's surface and their relation to geological structures
Geotechnical	Relates to the engineering behaviour of earth materials (such as soil and rock)
Green space area	Parcel of land about 38 ha in size adjacent to the operational area of the AWRC.
Groundwater	Water that accumulates underground within cracks or pores in rocks. This water forms groundwater resources, which eventually flow into rivers, lakes or the ocean
Groundwater Dependent Ecosystem	Ecosystems that need access to groundwater to meet all or some of their water requirements to maintain their communities of plants and animals
Habitat	The natural resource, physical and biotic factors that are present in an area that support the survival of plants and animals






Term	Meaning
HEC-RAS	Hydraulic modelling software that can describe the hydraulic conditions of river channels
Hydraulic control	A structure that controls the flow of water in a waterway, for example a weir or dam
Hydrodynamics	The mathematical study that deals with the motion of water within a waterway
Hydrologic model	A predictive mathematical tool that describes catchment runoff and flow in rivers and creeks
Hydraulic model	A predictive mathematical tool which is used to describe the flow behaviour of waterways
Impact area	The area that will be impacted by the project
Impact assessment area	An area slightly larger than the impact area, within which Sydney Water is seeking flexibility to locate project infrastructure
Impervious	Surfaces that significantly limit the amount of rainfall that will soak through (eg pavements, roads, roofs and heavily compacted soils)
Indicators	A parameter that can be used to provide a measure of a pressure, stressor and/or ecosystem condition response
Inlet works	The location where untreated wastewater enters the AWRC prior to treatment
In-stream	The area within a river channel from top of bank to top of bank
Integrated Water Management	A process that brings together all stakeholders involved in the planning and management of all water across the entire water cycle. It ensures the liveability, resilience and sustainability outcomes are maximised across cities and regions
Interim servicing	Temporary infrastructure that is put in place to service customers before delivery of the permanent infrastructure
Intrusive investigation	A study that provides information on the type, extent and level of contamination at the site through soil sampling and laboratory analysis for contaminants
Inundation area	An area temporarily or permanently covered by water
Iron bacteria	Small living organisms that naturally occur in soil, shallow groundwater, and surface waters
Irrigation	The artificial process of applying controlled amounts of water (including harvested stormwater) to land






Term	Meaning
Land use zones	Areas defined in environmental planning instruments that specify objectives and development controls for use of that land
Landfill airspace	The volume of space on a landfill site allowed for disposal of waste
Landscape character	The combined built and cultural aspects that make up an area and give it a sense of place
Landscape-led	A term used in planning for new development. The focus is creating a sense of community and liveability through outdoor spaces as well as buildings and considering the surrounding environment and site context in design. Place-making is a similar term
Light spill	When light falls outside the object or area to be illuminated
Lines of evidence	Information sources that will be used to assess impacts on metrics/indicators
Long-term (needs, requirements, investment)	Represents infrastructure and/or non-infrastructure needs, requirements and investment to service development that is typically associated with later stages and/or ultimate development (beyond 10 years). This is tied to the long-term strategy, which by nature incorporates a level of uncertainty, and therefore represents a higher-level outlook that is more conservative in nature
Low flow (waterway)	Slow moving sustained flows sometimes limited to a narrow area of the river channel
Macroinvertebrate	Small animals that live for all or part of their lives in water (eg insect larvae, beetles and snails)
Macrophytes	Aquatic plants growing in or near water
Malabar system	The pipes, pump stations and treatment plants that collect, treat and transport wastewater from properties to Malabar Wastewater Treatment Plant and Malabar Deep Ocean Outfall.
Management goal (waterway objectives)	A statement used to assess whether community values or uses are being attained or maintained.
Mean annual flows	The average value of all recorded flows in one year
Mean annual runoff volume	The average volume of stormwater runoff or stream flow occurring over a year
Model calibration and validation	The use of real world data (eg water quality, hydrodynamic and flow data) to demonstrate a hydraulic, hydrologic or water quality model is capable of representing the waterway environment


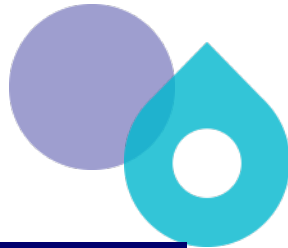




Term	Meaning
Model scenarios - background	Represents catchment and waterway conditions expected in future years, including conditions relating to land use, WWTP and WRP releases, extractions, etc
Model scenarios - baseline	Represents current (circa 2020) waterway and catchment conditions relating to land use, WWTP and WRP releases, extractions, etc
Model scenarios - impact	Represents catchment and waterway conditions expected in future years with the addition of the releases from the AWRC
Non-potable (non-drinking water)	Water that is not intended for human consumption, but which has many other uses
Non-potable/non-drinking recycled water schemes ('third pipe' or 'purple pipe' recycling)	Where highly treated wastewater is supplied to industry or households where it can be used for industrial processes, irrigation and some non-drinking uses, such as flushing the toilet. This requires a separate plumbing system in the building and a 'third pipe' (purple pipe) distribution network.
Numerical criteria (waterway objectives)	Qualitative or quantitative criteria used to assess the change in an indicator
Nutrients	Chemical elements and compounds essential to the growth and survival of living organisms
Operational area (AWRC)	The area on which facilities required for the operation of the AWRC are located
Pathogen	A very small organism that causes disease
Pollutant/nutrient load	Describes the quantity of pollutants or nutrients that may enter a waterway in a year
Potable (drinking water)	Water intended for human consumption, but which also has other uses
Probable Maximum Flood	The largest possible theoretical flood that can occur at a location within a catchment
Project	The 'project' as referenced throughout this Environmental Impact Statement is the whole Upper South Creek Advanced Water Recycling Centre project, including the AWRC and associated pipelines
Purified recycled water for drinking ('potable reuse')	Where highly treated recycled water is further treated to drinking water quality using advanced water treatment technologies before being returned to the drinking water system, usually via a dam, river or groundwater aquifer where it is diluted with other water sources and treated again at a conventional water filtration plant.

Term	Meaning
Recycled water	Recycled water is water that has been used before and is then cleaned to remove impurities. Recycled water (sometimes called reclaimed water) comes from wastewater, which includes greywater and stormwater. Sydney Water treats recycled water to Australian Recycled Water Guidelines and NSW Health standards so that it is suitable and safe for its intended use.
Reference design	Preliminary design to establish feasibility and design parameters, and to set the boundary conditions for approvals. During the tender and detailed design process, the contractor may change the design arrangement, as long as it is done within the approval footprint and conditions.
Release plume	The spread of treated water releases in the receiving waterway.
Releases ('treated water releases')	Treated water from the AWRC entering the waterway. The release point is location of the release.
Renewable energy	Energy from a source that is not depleted when used. In the case of this project, the main types of renewable energy discussed are co-generation and solar energy
Residence time	The amount of time water remains within a pool or ponded area within a river
Resource recovery	Recovery of valuable material from wastewater
Reticulated recycled water	Recycled water supplied by a water authority via pipeline networks for non-potable (non-drinking) uses
Reverse osmosis	Reverse osmosis is a water purification process that uses membranes to remove particles such as nutrients, chemicals, bacteria and viruses
Riffles	Riffles are the shallower faster moving sections of a stream or river
Rip rap	Rocky material placed to protect surrounding areas from scouring and erosion
Riparian vegetation	Plants that grow on the water's edge, the banks of rivers and creeks and along the edges of wetlands
Riparian zone	The interface between land and a river or stream
Runoff	Flow of water on ground surfaces due to rainfall
Saline soil	A soil which contains sufficient soluble salts to adversely affect plant growth and/or land use
Sediment and erosion control	An approach to managing stormwater runoff during construction limiting soil loss from exposed surfaces and reducing sediment loads in runoff prior to entering waterways






Term	Meaning
Sediment basins	A pond like structure designed reduce flow velocities from runoff which then allows sediments to settle and be removed prior to discharge to a waterway
Shear stress	A measure of the force of friction from the flow acting on the bed of the waterway. Bed load movement and sediment transport are a function of the shear stress
Short-term (needs, requirements, investment)	Represents infrastructure and/or non-infrastructure needs, requirements and investment to service development that is typically associated with a 0-10 years planning horizon. This typically provides visibility in order to adequately respond over the short-term and in the context of the longer-term strategy and associated planning
Sinuosity	Tendency to curve or bend easily
Sodicity	A measure of a form of sodium in the soil. High levels adversely affect soil stability, plant growth and/or land use
Source pathway receptor model	A tool which allows the evaluation of contamination movement in the environment
Staged approval	A type of State significant infrastructure approval under the <i>Environmental Planning and Assessment Act 1979</i> where project approvals are staged in accordance with an overall project concept
Stormwater	Rainwater that runs off hard surfaces like roofs and roads and is carried away by stormwater drains flowing into local waterways
Stormwater reuse/ harvesting	Water generated from stormwater capture that is treated to provide fit-for-purpose water quality for non-potable use
Strahler stream order	Describes the hierarchy of streams from the top to the bottom of a catchment (where stream order 1 indicates the top of the catchment)
Taxa	Units used for the classification of plants and animals
Tertiary treated water	Water that is treated to a tertiary level where any remaining organic particles and suspended materials are filtered out. Also known as high-quality treated water.
The aquatic ecodynamics modelling library	Community-driven library of modules and algorithms for simulation of 'aquatic ecodynamics' - water quality, aquatic biogeochemistry, biotic habitat and aquatic ecosystem dynamics
Tidal influence	Parts of a river affected by tidal fluctuations from the sea
Timed irrigation	Relates to irrigation with lower quality recycled water. Time restriction may be applied to minimise human exposure






Term	Meaning
Toxicant	A toxic substance introduced into the environment
Translucent flow	Where a portion of inflows from a dam are released to water shortages during periods of low flow
Transparent flow	Where all inflows from a dam are released to water shortages during periods of low flow
Treated water or treated effluent	Water that is produced after treatment at wastewater treatment or water recycling plants
Treated water pipeline	A pipeline that transports treated water
Treatment by-product	Secondary product derived from wastewater treatment or recycling processes. For example, this can include biosolids (organic matter by-product of wastewater treatment) or brine (by-product of reverse osmosis process in advanced water treatment)
Treatment level – advanced	Advanced treatment may include microfiltration, ultrafiltration and reverse osmosis to filter out very fine particles
Treatment level – primary	Primary treatment removes large solid particles from wastewater
Treatment level – secondary	Secondary treatment removes organic matter and nutrients
Treatment level – tertiary	Tertiary treatment filters out remaining organic particles and suspended materials
Tributary	A stream or river that flows into a larger stream or main watercourse
TUFLOW	Hydraulic modelling software that enables flooding to be described
TUFLOW FV - finite volume hydrodynamic software	A finite volume numerical modelling software that simulates hydrodynamic, and advection/dispersion processes in oceans, coastal waters, estuaries and rivers
Tunnelling	A method of building a pipeline by drilling an underground bore in which the pipe is installed. It is a method of construction that reduces environmental and community impacts
Turbulent flow	Fast moving water with a highly variable surface level
Ultimate capacity	The capacity of the project once all future stages are built, treating average dry weather wastewater flows up to 100 ML/day



Term	Meaning
Upper South Creek Servicing Area	The wastewater catchment serviced by the Upper South Creek Advanced Water Recycling Centre. It includes most of the Western Sydney Aerotropolis Growth Area and South West Growth Area
Value (related to waterways or environment)	A particular value or use of the environment that is important for a healthy ecosystem or for public benefit, health, safety or welfare, and requires protection from the effects of stressors ( <a href="https://www.waterquality.gov.au/anz-guidelines/resources/key-concepts/community-values">https://www.waterquality.gov.au/anz-guidelines/resources/key-concepts/community-values</a> ).
Virgin excavated natural material	A natural material (such as clay, gravel, sand, soil or rock fines) that has been excavated or quarried from areas that are not contaminated or contain sulfidic ores, soils or any other waste.
Vista/viewpoint	Views observed from specific receptors
Waste classification	The classification of wastes into groups that pose similar risks to the environment and human health
Waste management hierarchy	Describes the management of waste from the most desirable (avoid the generation of waste) to the least desirable (disposal of waste at landfill)
Wastewater	Water used in homes, schools, businesses and industries that goes down drains from sinks, baths, showers, laundries and toilets and other drains inside buildings. Sometimes known as sewage.
Wastewater catchment	A wastewater catchment is a geographical area of the wastewater network that drains into a single point within the wastewater network
Wastewater collection network	The network of pipes and other infrastructure that transfers wastewater from homes, schools, businesses and industries to wastewater treatment plants or water recycling plants for treatment
Wastewater treatment plant	A facility where various processes are used to treat wastewater and remove pollutants
Water balance	Strategic estimate of water flows into and out of the study area (including rainfall, evaporation, potable water use, recycling and wastewater production)
Water quality modelling	A predictive mathematical tool that describes the condition (chemical, physical and biological characteristics) of the water in waterways
Water quality response model (WQRm)	Combination of numerical models used to simulate hydrodynamic and water quality responses in waterways
Water recycling plant	A facility where various processes are used to treat wastewater and remove pollutants and some or all of the treated water is reused

Term	Meaning
Water sensitive urban design	Measures to improve the ability of urban areas to capture, treat, and re-use stormwater before it enters waterways
Water surface elevation	The surface of the water in metres (using Australian Height Datum or AHD) along the waterway
Water velocity	The speed of water in a given direction
Waterway objectives	Waterway objectives consist of the community's environmental values and uses of the waterway and indicator(s) and criteria to assess whether the waterway will support a particular environmental value or use
Weir	A structure built across a river to control the upstream water level
Wet weather overflow	Discharge of untreated wastewater into the environment that is a result of rainfall
Wet weather quality water	Water that is produced after primary level of treatment and disinfection
Wet year	A representative wet climatic year. Selected as 2014/15 in the key waterway assessments
Wetted perimeter	The length of the cross-sectional area that is 'wet', meaning in contact with the flow. This is used to calculate changes in inundation
XP RAFTS	Hydrological modelling software that enables a catchment or site response to rainfall to be described

## 16.2 Abbreviations

Abbreviation	Definition
ABS	Australian Bureau of Statistics
ACHAR	Aboriginal Cultural Heritage Assessment Report
ACM	Asbestos-containing material
ADWF	Average dry weather flow
ADWG	Australian Drinking Water Guideline
AEC	Areas of Environmental Concern
AED2	Aquatic Ecodynamics Modelling Library
AEP	Annual exceedance probability
AHD	Australian Height Datum




Abbreviation	Definition
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
AMBS	Australian Museum Business Services
ANEC / ANEF	Australian Noise Exposure Concept / Australian Noise Exposure Forecast
ANZECC	Australian and New Zealand Environment and Conservation Council.
ANZG	Australian and New Zealand Guidelines for Fresh and Marine Water Quality
AQIA	Air Quality Impact Assessment
ARDEM	Archaeological Research Design and Excavation Methodology
ARR	Australian Rainfall and Runoff
ASC	Assessment of Site Contamination
ASS	Acid Sulfate Soils
AWRC	Advanced Water Recycling Centre
AWTP	Advanced Water Treatment Plant
BAM	Biodiversity Assessment Method
BAU	Business as Usual
BC	Biodiversity Conservation
BDAR	Biodiversity Development Assessment Report
BGL	Below ground level
BOS	Biodiversity Offset Scheme
BTEX	Benzene, Tolulene, Ethylbenzene, Xylene
CALD	Culturally and linguistically diverse
CASA	Civil Aviation Safety Authority
CEEC	Critically Endangered Ecological Community
CEMP	Construction Environmental Management Plan
CMP	Conservation Management Plan
CNVS	Construction Noise and Vibration Strategy
CO	Carbon monoxide
CoA	Commonwealth of Australia
COPC	Contaminants of Potential Concern
CSEP	Community and Stakeholder Engagement Plan
CZMP	Coastal Zone Management Plan




Abbreviation	Definition
DAWE	Department of Agriculture Water and the Environment (Commonwealth)
DCP	Development Control Plan
DEM	Digital Elevation Model
DoS	Degree of saturation (a ratio of demand to capacity of the traffic network)
DPC	Department of Premier and Cabinet
DPIE	Department of Planning, Industry and Environment
EEC	Endangered Ecological Community
EES	Department of Planning Industry and Environment – Environment, Energy and Science
EFRHOG	Environmental Flows and River Health Outcomes Group
EIS	Environmental Impact Statement
EMS	Environmental Management System
ENM	Excavated Natural Material
EP	Equivalent person (used for calculating water and wastewater demand)
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
EP&A Regulation	Environmental Planning and Assessment Regulation 2000 (NSW)
EPA	Environment Protection Authority
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
EPI	Environmental Planning Instrument
EPL	Environment Protection Licence
EPT	Ephemeroptera, Plecoptera and Trichoptera groups
ESD	Ecologically Sustainable Development
FFA	Flood Frequency Analysis
FPL	Flood Planning Level
FRP	Filterable reactive phosphorus
GBMWA	Greater Blue Mountains World Heritage Area
GBN	Ground-borne noise
GDE	Groundwater Dependant Ecosystem
GHG	Greenhouse gas
GL	Gigalitre / billion litres
GPEC	Greater Penrith to Eastern Creek Growth Area






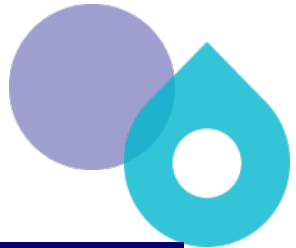

Abbreviation	Definition
GPT	Gross Pollutant Traps
GSC	Greater Sydney Commission
GSWnp	General Solid Waste non putrescible
GSWp	General Solid Waste putrescible
GSWS	Greater Sydney Water Strategy
ha	Hectare
HAA	Heritage Archaeological Assessment
HAZID	Hazard identification study
HDD	Horizontal directional drilling
HEC RAS	Hydraulic Engineering Centre River Analysis Centre
HGL	Hydrogeological Landscape
HIA	Health Impact Assessment
HIPAP	Hazardous Industry Planning Advisory Paper
HNRMF	Hawkesbury Nepean River Management Forum
HRC	Healthy Rivers Commission
HSFM	Housing Supply Forecast Model
IAP	International Association of Public Participation
ICNG	Interim Construction Noise Guideline
ICOMOS	International Council on Monuments and Sites
IEP	Independent Expert Panel
ILUA	Indigenous Land Use Agreement
INSW	Infrastructure New South Wales
IPART	Independent Pricing and Regulatory Tribunal
ISCA	Infrastructure Sustainability Council of Australia
IWM	Integrated Water Management
KFH	Key Fish Habitat
LAP	Liverpool to Ashfield Pipeline (part of Malabar System)
LCVIA	Landscape Character and Visual Impact Assessment
LCZ	Landscape Character Zone
LEP	Local Environmental Plan
LGA	Local government area




Abbreviation	Definition
LLS	Local Land Services
LoS	Loss of Service (measure of the average delay experienced by vehicles)
LSPS	Local Strategic Planning Statement
LUCRA	Land use conflict risk assessment
MARV	Mean Annual Runoff Volume
MCA	Multi-criteria analysis
ML	Megalitre / million litres
ML/day	Million litres per day
MLRA	Multi-level Risk Assessment
MNES	Matters of National Environmental Significance
MOUSE	Model for Urban Sewers
MUC	Multi-utility corridor
MUSIC	Model for Urban Stormwater Improvement Conceptualisation
NASF	National Airports Safeguarding Framework
NCA	Noise catchment area
NEPC	National Environment Protection Council
NEPM	National Environmental Protection Measure
NGRS	North Georges River Submain
NML	Noise Management Level
NO <sub>2</sub>	Nitrogen dioxide
NoRBE	Neutral or Beneficial Effect
NOx	Oxides of nitrogen
NPfI	Noise Policy for Industry
NPV	Net present value
NSW	New South Wales
NSW FDM	New South Wales Flood Plain Development Manual
NTC	National Transport Commission
NWQMS	National Water Quality Management Strategy
OCP	Organochlorine pesticides
OCU	Odour control unit
OLS	Obstacle Limitation Surface


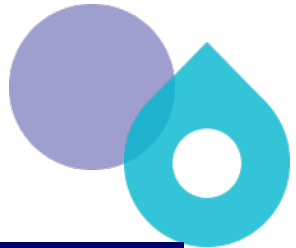



Abbreviation	Definition
OOHW	Out of hours work
OPP	Orthophenylphenol
OSD	Onsite Detention basin
OU	Odour unit
OUV	Outstanding Universal Value
PAD	Potential archaeological deposit
PAH	Polycyclic Aromatic Hydrocarbons
PAS	Potential Archaeological Sites
PCB	Polychlorinated Biphenol
PCT	Plant Community Types
PE	Polyethylene
PFAS	Polyfluoroalkyl substances
PHA	Preliminary Hazard Analysis
PIC	Place-based Infrastructure Compact
PM10	Particulate matter with equivalent aerodynamic diameter of 10 microns or less
PM2.5	Particulate matter with equivalent aerodynamic diameter of 2.5 microns or less
PMF	Probable Maximum Flood
PNL	Predicted Noise Level
POEO	<i>Protection of the Environment Operations Act 1997</i> (NSW)
PRW	Purified recycled water
PVC	Poly Vinyl Chloride
RAP	Registered Aboriginal Party
RBM	Relevant Biodiversity Measures
RCP	Representative Concentration Pathways
RNP	Road Noise Policy
RO	Reverse osmosis
RRA	Rapid Riparian Appraisal
SAIL	Serious and irreversible impacts
SCA	Sydney Catchment Authority
SCCS	South Creek Corridor Strategy
SCIP	Strategic Capital Investment Plan

Abbreviation	Definition
SDS	Safety data sheet
SDWC	Sydney Drinking Water Catchment
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environment Planning Policy
SESA	Socio-economic study area
SIA	Socio-economic Impact Assessment
SIC	Significant Impact Criteria
SIGNAL SG	Stream Invertebrate Grade Number Average Level (Sydney G) genus taxonomic level
SIIA	Serious and Irreversible Impact Assessments
SO <sub>2</sub>	Sulfur dioxide
SOC	State-owned corporation
SOHI	Statement of Heritage Impact
SSCTMP / CTMP	Site Specific Construction Traffic Management Plans / Construction Traffic Management Plans
SSD	State significant development
SSI	State significant infrastructure
STEL	Short-term exposure limit
SWGA	South West Growth Area
SWSOOS	Southern and Western Suburbs Ocean Outfall Sewer (part of Malabar System)
TEC	Threatened ecological communities
TfNSW	Transport for New South Wales
TN	Total Nitrogen
TOBAN	Total fire ban
TP	Total Phosphorus
TRH	Total Recoverable Hydrocarbons
TSP	Total suspended particulates
TSS	Total Suspended Solids
TUFLOW FV	Two dimensional unsteady flow model
UDIA	Urban Development Institute of Australia
USC	Upper South Creek
VCE	Vapour cloud explosion



Abbreviation	Definition
VEC	Vulnerable Ecological Community
VENM	Virgin Excavated Natural Material
WCAA	Western City Aerotropolis Authority
WFP	Water filtration plant (water treatment)
WHA	Wildlife Hazard Assessment
WM Act	<i>Water Management Act 2000</i> (NSW)
WPCA	Western Parkland City Authority
WQRM	Water Quality Response Model.
WRC	Water recycling centre (wastewater treatment with advanced recycled facility)
WRP	Water recycling plant (wastewater treatment with recycling facility)
WSAA	Water Services Association of Australia
WSAGA	Western Sydney Aerotropolis Growth Area. Also known as Aerotropolis or Western Sydney Aerotropolis
WSAP	Western Sydney Aerotropolis Plan
WSIA	Western Sydney Nancy Bird-Walton International Airport
WSPT	Western Sydney Parklands Trust (now Greater Sydney Parklands)
WSUD	Water-sensitive urban design
WWTP	Wastewater Treatment Plant



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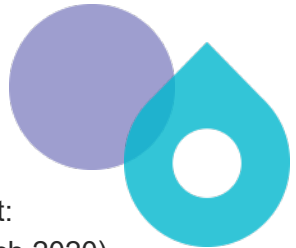

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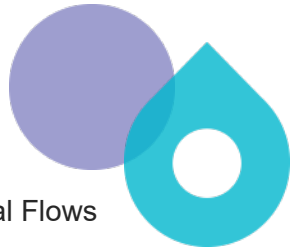

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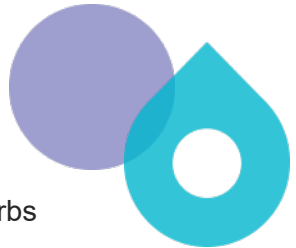

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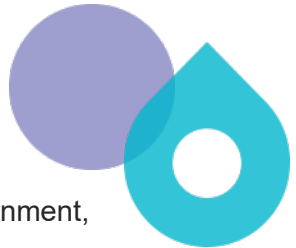
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## Specialist consultants

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Avisure	Airport safeguarding – wildlife
Aurecon, Arup	Airport safeguarding, Flooding, Groundwater, Hydrodynamics and water quality*, Landscape character and visual amenity, Noise and vibration, Preliminary Hazard Analysis, Socio-economics, Soils and contamination, Surface water, Sustainability, Traffic and transport, Urban Design, Waste management
Biosis	Terrestrial biodiversity
CTEnvironmental	Aquatic ecology
EMM Consulting	World and National heritage
EnRiskS	Human health
Extent Heritage	Non-Aboriginal heritage
Jacobs	Air quality
Kelleher Nightingale Consulting	Aboriginal heritage
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