

## **Appendix C: Glossary**

**Absorption basins:** A gently-sloped depression in the ground designed to fill during rainstorms. They catch stormwater and have it absorb in the ground, so that stormwater will not carry pollutants to the ocean. Both swales and absorption basins are designed to hold or convey stormwater. The difference is that during storms, swales are like creeks, while absorption basins are like ponds. Both quickly dry out between rains.

**Bio-accumulation:** The process by which chemicals become more concentrated as they are continually taken in by a living organism from its air, food, or water. This process is particularly important when an animal near the top of the food chain eats many smaller organisms and accumulates the contaminants each one has in its body.

**Biodiversity:** Variability of life. Biodiversity is the number of different species, the variation in the genetic code between different members of one species, and the multitude of different ecosystems and ecological communities they form. Often considered important in allowing an ecosystem to adapt to or recover from disturbances like climate change.

**Biofiltration:** Using plants to filter pollutants. In this report, it particularly refers to using plants to slow stormwater, so that pollutants settle out or are trapped on plant leaves.

**Biointensive gardening:** A method for maximizing food production in a small area that is sustainable indefinitely. It is an integrated system that includes deeply-digging soil, adding compost to replenish nutrients, spacing plants closely, growing crops that replenish soil organic matter, growing high calorie foods like potatoes, and using open-pollinated seeds instead of hybrids.

**Bioremediation:** Using microorganisms, plants, or other living organisms to remove contaminants from polluted water and soil.

**Blackwater:** Wastewater from the toilet, also known as sewage.

**Brownfields:** Property whose expansion, redevelopment, or reuse may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. (Source: U.S. Environmental Protection Agency).

**Community Advisory Group:** A group of citizens from a local community organized to work cooperatively with industries or governmental agencies during the process of brownfield assessment and remediation.

**Compaction:** The compression of soil particles. Compression removes the gaps and spaces between particles that allow water and air to travel through the soil.

**Detection limits:** The lowest concentration of a particular chemical that a particular laboratory procedure can detect.

**Drip irrigation:** An efficient form of irrigation in which water is delivered directly to plant roots by tubes with small holes.

**Eco-industrial park:** A type of industrial park in which businesses cooperate with each other and with the local community in an attempt to reduce waste, efficiently share resources (such as information, materials, water, energy, infrastructure, and natural resources), and produce sustainable development, with the intention of increasing economic gains and improving environmental quality. (Source: Wikipedia).

**Ecological community:** A collection of plants, animals, etc., usually found together. These species create a food web, provide habitat for one another, and interact somewhat independently of other ecological communities.

**Ecological design:** Design which imitates or integrates itself with natural processes, so that it has a neutral or positive impact on the local environment. An example is a wastewater-treatment marsh, where wastewater is cleaned in a method very similar to the way a wetland naturally filters water. Because it imitates natural processes, this wastewater-treatment marsh then provides other benefits like bird habitat.

**Ecological infrastructure:** Infrastructure designed according to ecological design principles. In order to follow these principles, this infrastructure is often smaller and less centralized than typical infrastructure.

**Ecological receptor:** Ecological communities, populations, or individual organisms that might be exposed to toxins. “Sensitive ecological receptors” are those with exceptional environmental value, where a discharge or release could pose a greater threat than a discharge to other areas, including but not limited to: wetlands; habitat used by state or federally designated endangered or threatened species; national or state fish and wildlife refuges and fish and wildlife management areas; and state and federal designated wild and scenic rivers. (Source: Mississippi Department of Environmental Quality)

**Ecotourism:** Tourism, such as bird-watching, that is based on experiencing or learning about nature. Although ecotourist endeavors can be environmentally destructive (e.g., hunting safaris), for a business to qualify as “ecotourist,” it now generally must also be environmentally sustainable. Ecotourism is sometimes pursued directly but may be perceived as more authentic when it results unintentionally from an area’s ecological restoration efforts, such as in the Arcata wetland treatment marsh.

**Environmental performance:** A building or community’s behavior on quantifiable environmental issues, such as energy use.

**Erosion:** The removal of soil particles by wind or water. Activities that clear vegetation or disturb the soil accelerate erosion.

**Estuary:** The area where a river or creek approaches the sea, and where freshwater and saltwater mix. This area is often wide, flat, and influenced by tides.

**Geographic Information Systems, GIS:** A computer software system for viewing data spatially and analyzing geographic questions. GIS helps with tasks like creating maps, layering maps on top of one another, and estimating distances.

**Green building:** The practice of: 1) increasing the efficiency with which buildings and their sites use and harvest energy, water, and materials, 2) reducing building impacts on human health and the environment, 3) through better siting, design, construction, operation, maintenance, and removal — the complete building life cycle. (Source: U.S. Office of the Federal Environmental Executive.)

**Greywater:** Wastewater from showers, sinks, dishwashers, and washing machines. Specifically excludes water from the toilet, known as sewage or blackwater.

**Groundwater:** Water under the earth's surface, which may be shallow or deep, that sometimes comes to the surface at springs or seeps, and from which wells draw their water.

**Habitat fragmentation:** The breaking up of a habitat into unconnected patches interspersed with other habitat which may not be inhabitable by species occupying the habitat that was broken up. (Source: U.S. Geological Survey)

**Habitat:** The place where an animal or plant naturally occurs, where it finds food, water, shelter, and can reproduce.

**Impermeable:** Not permitting liquids to pass through, causing stormwater to run off rather than percolate downward into the soil. It describes both materials, such as concrete and asphalt, and areas covered by these materials.

**Indicators:** Quantifiable measures that can be tracked over time to determine a group's progress towards meeting its self-defined goals. Some indicators should be minimized, others maximized. Indicators might include infant mortality, hospital visits due to asthma attacks, or percentage of local graduates who remain in the area.

**Invasive species:** Aggressive non-native species. They spread rapidly, exclude other plants and animals, and can come to completely dominate an area. Examples include gorse, scotch broom, pampas grass, and eucalyptus.

**Native species:** A plant or animal that has occurred in its current location far back in history, rather than having been recently introduced. The arbitrary cutoff date for determining whether something is "native" or not is usually European settlement. Native plants are preferred because they provide food and shelter for other plants and animals, which have had time to evolve in relationship to them, unlike new arrivals. Often, but not always, native species are rare or threatened, due to the spread of aggressive invasive plant species.

**Non-potable water:** Water that should not be used as drinking water. Non-potable water can be used for irrigation, toilet flushing, car washing, or other uses, depending on its level of treatment.

**Nutrient cycling:** The circulation and transformation of nutrients in soil, such as carbon, phosphorous, and nitrogen. Nutrients are taken up by plants, decayed by micro-organisms, dissolved by water, and transformed by other chemicals, particularly acids or bases.

**Passive solar energy:** Using the sun's energy directly, usually for heating or cooling a house. Passive solar energy differs from "active solar energy," such as photovoltaic panels, which convert sunlight into electricity, and then use the electricity to heat or cool the house. Passive energy is generally more efficient.

**Pedestrian-friendly:** See "walkable."

**Permaculture:** A system for designing sustainable human habitats. Permaculture has an ethical framework, overarching guidelines, and specific design strategies. It overlaps with ecological design concepts, but places special emphasis on the integration of food growing with buildings and neighborhoods.

**Permeable:** Permitting liquids to pass through, allowing stormwater to percolate downward into the soil rather than to run off into streets and gutters. It describes both materials, such as vegetation or special types of paving, and areas covered by these materials, such as gardens.

**Photovoltaics:** Cells that convert sunlight to electricity, typically installed as flat panels on building roofs, also known as solar panels. However, innovative applications for photovoltaic cells are constantly being developed, such as photovoltaic glass which allows photovoltaic cells to be embedded in semi-transparent skylights or windows.

**Phytoremediation:** Using plants to remove or immobilize hazardous substances from a brownfield.

**Placemaking:** Techniques for turning a lifeless "space" into a well-loved "place" for social interactions and community life.

**Potable water:** Water that is safe to drink. It requires a higher level of filtration than non-potable water.

**Preliminary remediation goals (PRGs):** Generic cleanup targets used in brownfield remediation. The targets are specific to a particular contaminant, in a particular medium (water, soil, or air), and depend upon the intended future land use (residential, commercial, industrial, or open space). These are preliminary in nature and do not account for site-specific factors such as soil type or the depth to groundwater. These usually precede a thorough risk assessment.

**Remediation:** Taking action to reduce, isolate, or remove contamination from an environment with the goal of preventing exposure to people or animals. Also known as “cleanup.” (Source: National Oceanic and Atmospheric Administration).

**Riparian:** Related to the banks of a creek or river.

**Risk assessment:** A process of measurement and calculation done to determine the risk posed by contaminants to humans or ecosystems. Risk assessment involves determining how a person or organism might be exposed, the probable duration and intensity of exposure, and the toxicity of the contaminant.

**Site assessment:** In brownfield cleanup, the process of determining likely contaminants’ type and location through historical research, interviews with former workers, review of photographs, and visits to the site.

**Site investigation:** In brownfield cleanup, the process of determining whether a site is actually contaminated by the chemicals identified as possible pollutants during the site assessment stage. Samples of soil, groundwater, surface water, and air may be collected and analyzed in a laboratory.

**Soil structure:** The arrangement of soil particles into larger soil units of particular sizes and shapes, as well as the spaces between these units that allow water and air to pass through the soil. Well-developed soil structure encourages biodiversity in the soil. Soil structure is disturbed by compaction and tilling.

**Swale:** A gently-sloped, shallow, vegetated depression in the ground, like a shallow and wide ditch, that is designed to carry and clean stormwater. After water travels 9 minutes or 250 feet in a swale, almost all street pollutants picked up by the water have been filtered out by the plants. Both swales and absorption basins are designed to hold or convey stormwater. The difference is that during storms, swales are like creeks, while absorption basins are like ponds. Both quickly dry out between rains.

**Topsoil:** The upper layer of soil, usually the most rich in decomposing organic material, soil microorganisms, nutrients, and seeds. Topsoil is the most fertile portion of the soil.

**Transit oriented development:** A mixed-use community within walking distance of a transit stop, which mixes residential, retail, office, open space, and public uses in a way that makes it convenient to travel on foot or by public transportation instead of by car. (Source: Massachusetts Community Preservation Initiative.)

**Transit:** Public transportation that serves a group of people rather than individuals. Transit includes buses, shuttles, trains, and similar types of transportation.

**Walkable:** Inviting pedestrian travel. A “walkable” neighborhood generally has necessities (groceries, workplaces, and housing) within a quarter- to half-mile of each other, as well as sidewalks that allow walking. A “walkable” street is one that is a pleasant place for pedestrians – lively and interesting, with buildings and a street width of appropriate size, without intimidating traffic, and with amenities like benches, lighting, and street trees.

**Water recycling:** Filtering water to a safe level, and then using it again for irrigation, toilet flushing, or other non-potable use.

**Wildlife corridor:** A strip, such as a creek or row of trees, that connects two habitat areas and allows animals to travel safely from one to another.