

APPENDIX H

Pollutants commonly found in Urban Runoff & Anticipated and Potential Pollutants Generated by Land Use Type

Table 1: Pollutants Commonly Found in Urban Runoff

Pollutant	Major Sources	Potential Effects
Nutrients <ul style="list-style-type: none"> • Nitrogen • Phosphorus 	<ul style="list-style-type: none"> • Fertilizers • Animal waste • Detergents • Atmospheric deposition • Leaking sewage pipes 	<ul style="list-style-type: none"> • Lowers oxygen levels • Destroys habitat • Promotes algal blooms • Limits recreation • Interferes with navigation
Pathogens <ul style="list-style-type: none"> • Bacteria • Viruses 	<ul style="list-style-type: none"> • Animal waste • Illicit connections between storm sewers and sewage lines • Leaking sewage pipes 	<ul style="list-style-type: none"> • Poses human health risks • Closes beaches • Closes shellfish harvesting areas
Hydrocarbons <ul style="list-style-type: none"> • Oil • Grease • Petroleum-based products • Polycyclic aromatic hydrocarbons (PAHs) 	<ul style="list-style-type: none"> • Parking lots • Roads • Automobile emissions • Improper disposal of used motor oil • Illicit connections to drain systems 	<ul style="list-style-type: none"> • Lowers levels of dissolved oxygen in receiving waters • Causes toxic impacts • Damages habitat
Toxic Organics <ul style="list-style-type: none"> • Pesticides • Polychlorinated biphenyls (PCBs) 	<ul style="list-style-type: none"> • Lawn care • Agricultural lands • Industrial uses • Illicit connections to storm drain systems 	<ul style="list-style-type: none"> • Causes toxic impacts • Leads to human and animal reproductive abnormalities • Increases animal mortality rates
Sediments	<ul style="list-style-type: none"> • Construction sites • Agricultural lands • Logged forest lands • Eroded stream banks 	<ul style="list-style-type: none"> • Increases water turbidity • Alters water flows • Destroys benthic habitat • Blocks sunlight • Attracts particulate forms of metals and nutrients
Metals <ul style="list-style-type: none"> • Lead • Copper • Cadmium • Zinc • Mercury • Chromium • Selenium • Nickel 	<ul style="list-style-type: none"> • Illicit storm drain connections • Automobile use – emissions, brake pad residues • Atmospheric deposition • Industrial activities • Commercial activities 	<ul style="list-style-type: none"> • Increases toxicity of sediment and water column • Adds toxins to food chain • Causes genetic defects and reproductive abnormalities; increases mortality rates among fish and wildlife • Increases risks of cancer, neurological disorders, and birth defects among humans
Litter	<ul style="list-style-type: none"> • Human activities 	<ul style="list-style-type: none"> • Affects aesthetics • Impairs recreational uses • Threatens aquatic life
Chlorides	<ul style="list-style-type: none"> • Outdoor storage and use of salts on roads, driveways, and sidewalks in cold areas 	<ul style="list-style-type: none"> • Toxic to freshwater organisms

Pollutant	Major Sources	Potential Effects
Elevated Temperatures	<ul style="list-style-type: none">• Industrial sources• Removal of trees next to streams and rivers• Impervious surfaces and conveyances	<ul style="list-style-type: none">• Threat to insects, fish, and other temperature-sensitive aquatic species

Sources: Terrene Institute 1996, U.S. EPA 1995

Table 2: Anticipated and Potential Pollutants Generated by Land Use Type

Development Type	General Pollutant Categories								
	Pathogens	Heavy Metals	Nutrients	Pesticides	Organic Compounds	Sediments	Trash & Debris	Oxygen Demanding Substances	Oil & Grease
Detached Residential Development	A		A	A		A	A	A	A
Attached Residential Development	P		A	A		A	A	p ^(a)	p ^(b)
Commercial / Industrial Development >100,000 ft ^(b)	p ^(c)		p ^(a)	p ^(e)	p ^(b)	p ^(a)	A	p ^(e)	A
Automotive Repair Shops		A			A ^(d,e)		A		A
Restaurants	A						A	A	A
Hillside Development >5,000 ft ^(b)			A	A		A	A	A	A
Parking Lots		A	p ^(a)	p ^(b)		p ^(a)	A	p ^(e)	A
Streets, Highways & Freeways		A	p ^(a)		A ^(d)	A	A	p ^(e)	A

A = Anticipated

P = Potential

(a) A potential pollutant if landscaping exists onsite.

(b) A potential pollutant if the project includes uncovered parking areas.

Source: CASQA 2003.

(c) A potential pollutant if land use involves food or animal waste products.

(d) Including petroleum hydrocarbons.

(e) Including solvents.