

## LIDA Swale Operation and Maintenance Plan

**Annual inspections are required.** It is recommended that the facility is inspected on a monthly basis to ensure proper function. The plan below describes inspection and maintenance activities, and may be used as an inspection log. Contact the design engineer, Clean Water Services or City representative for more information.

Identified Problem	Condition to Check for	Maintenance Activity	Maintenance Timing	✓ Task Complete Comments
Sediment Accumulation in Treatment Area	Sediment depth exceeds 3 inches	Remove sediment deposits in treatment area. Swale should be level from side to side and drain freely toward outlet	 SUMMER  FALL Ideally in Dry Season	
Standing Water	Standing water in the swale between storms that does not drain freely	Remove sediment or trash blockages; improve grade from end to end of swale; no standing water 24 hours after any major storm (1 inch in 24 hours)	 WINTER  SPRING Inspect after any major storm (1-inch in 24 hours)	
Flow Not Distributed Evenly	Flows unevenly distributed through swale due to uneven or clogged flow spreader	Level the spreader and clean so that flows spread evenly over entire swale width	As Needed	
Poor Vegetation Coverage	80% survival of approved vegetation and no bare areas large enough to affect function of facility	Determine cause of poor growth and correct the condition; replant with plugs or containerized plants per approved plans and applicable standards at time of construction. Remove excessive weeds and all invasive plants.	 FALL  SPRING Ideal time to plant is Spring and Fall seasons	
Excessive Vegetation	Vegetation grows so tall it competes with or shades approved emergent wetland grass/shrubs; interferes with access or becomes a fire danger	Prune overhanging limbs if possible. Prune emergent wetland grass/shrubs that have become overgrown	 SPRING Ideal time to prune emergent wetland grass is Spring	

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Identified Problem	Condition to Check for	Maintenance Activity	Maintenance Timing	✓ Task Complete Comments
Invasive Vegetation as outlined in Appendix A	Invasive vegetation found in facility. Reed Canary Grass; Teasel, English Ivy; Nightshade; Clematis; Cattail, Thistle; Scotch Broom	Remove excessive weeds and all invasive plants. Attempt to control even if complete eradication is not feasible. Refer to Clean Water Services Integrated Pest Management Plan for appropriate control methods, including proper use of chemical treatment	 SPRING SUMMER FALL	
Hazard Trees	Observed dead, dying or diseased trees	Remove hazard trees. A certified arborist may need to determine health of tree or removal requirements	As Needed	
Obstructed Inlet/Outlet	Material such as vegetation, sediment or debris is blocking more than 10% of the inlet/outlet pipe	Remove blockages from facility	 WINTER SPRING Inspect after any major storm (1-inch in 24 hours)	
Damage to Outlet Structure	Outlet structure damage may include a grate that is missing or not in place. Grate may have broken members or have a damaged frame	Grate must be in place and meet design standards. Replace or repair grate and ensure grate is firmly attached	As Needed	
Erosion	Erosion or channelization that impacts or effects the function of the facility or creates a safety concern  Evidence of trash, debris or dumping	Repair eroded areas and stabilized using proper erosion control measures. Establish appropriate vegetation as needed	 FALL WINTER SPRING	

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Identified Problem	Condition to Check for	Maintenance Activity	Maintenance Timing	✓ Task Complete Comments
Trash and Debris		Remove trash and debris from facility. Dispose of properly	 SPRING  SUMMER  FALL  WINTER	
Contamination and Pollution	Evidence of oil, gasoline, contaminants, or other pollutants. Look for sheens, odor or other signs of contamination	Locate source of contamination and correct. Remove oil using oil-absorbent pads or vac-truck. If low levels of oil persist plant wetland plants that can uptake small concentrations of oil such as <i>Juncus effusus</i> . (soft rush) If high levels of contaminants or pollutants are present, coordinate removal/ cleanup with local jurisdiction	 SPRING  SUMMER  FALL  WINTER	
Vector Control	General evidence of rodents or water piping through facility via rodent holes. Insects such as wasps and hornets interfere with maintenance/ inspection activities	Repair facility if damaged. Remove harmful insects, use professional if needed. Refer to Clean Water Services Integrated Pest Management Plan for management options	As Needed	
Damage to Outlet Structure	Damage to Frame or Top Slab. Frame not sitting flush on top slab (more than $\frac{3}{4}$ inch between frame and top slab); frame not securely attached	Ensure frame is firmly attached and sits flush on the riser rings or top slab	As Needed	
Damage to Outlet Structure	Fractures or Cracks in Walls or Bottom. Maintenance person determines the structure is unsound. Soil entering structure through cracks	Structure replaced or repaired to design standards	As Needed	