

LittaTrap™ – Operations and Maintenance Guide

The EnviroPod® LittaTrap™

The EnviroPod® LittaTrap™ is an innovative catch basin inlet filter (insert) device designed to be easily installed into new and existing stormwater catch basins of any size or configuration. The EnviroPod® LittaTrap™ can be installed in grate (drop) inlets, curb inlets, combination grate/curb inlets, or round manhole catch basins. Figure 1: EnviroPod® LittaTrap™ example catch basin applications shows these types of installations.

The EnviroPod® LittaTrap™ is an effective stormwater treatment technology that is designed to capture and remove a variety of stormwater pollutants conveyed in runoff, such as trash, debris, sediment, macro or micro plastic debris and other pollutants of concern. In addition, the EnviroPod® LittaTrap™ maintains catch basin hydraulic capacity and allows for easy maintenance when completely full of trash and debris. The EnviroPod® LittaTrap™ is available in a range of standard model sizes and configurations.

The EnviroPod® LittaTrap™ FC model is also approved for use by numerous State and local agencies throughout the USA as well as certified by the California State Water Resources Control Board, Trash Implementation Program.

The EnviroPod® LittaTrap™ FC model is fitted with a "full capture" liner that insures 100% of particles 5mm and over are captured in the trap.

The EnviroPod® LittaTrap™ FC also includes an optional hinged vector port seal (HVPS) when installed in a grated inlet or combination inlet catch basin, if required. The HVPS allows visual inspection under the basket for access by local or State Vector Control field personnel. In addition, the design of the HVPS has been approved by the Mosquito Vector Control Association of California (MVCAC) for California certified full trash capture applications.

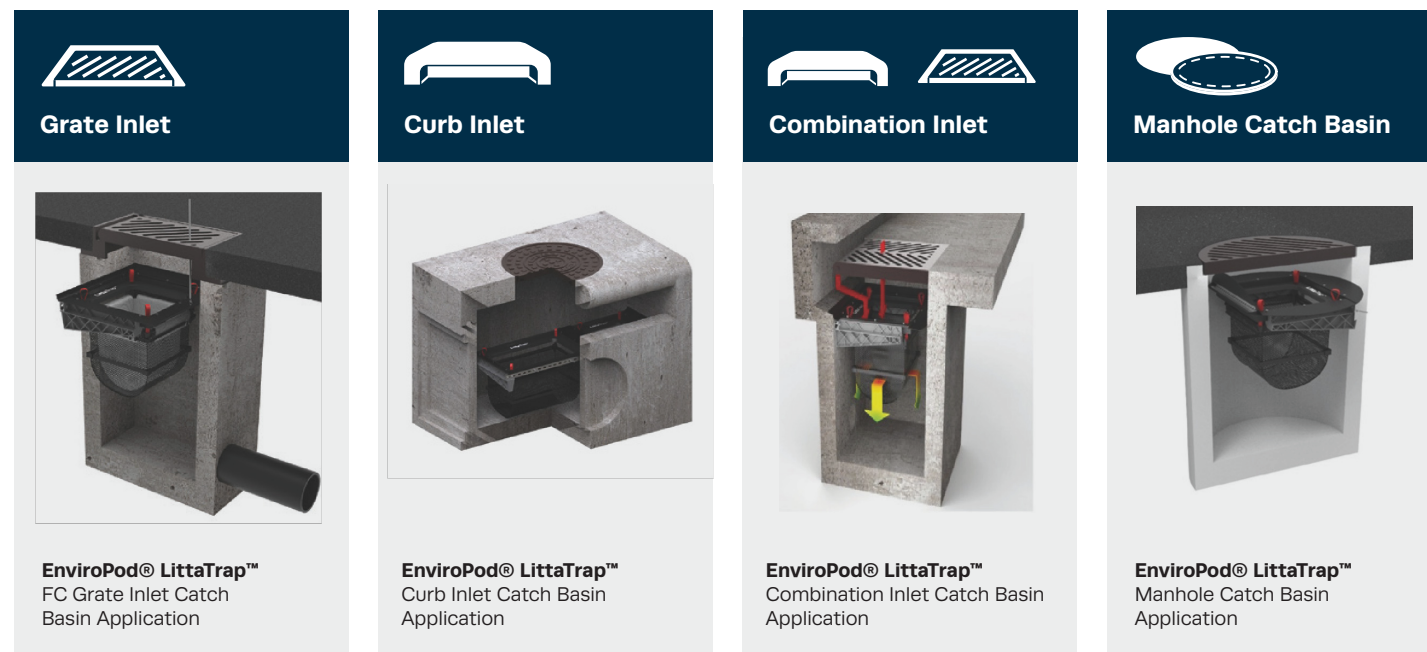


Figure 1: EnviroPod® LittaTrap™ example catch basin applications

Components and Operation

During a storm event, stormwater runoff flows enter a catch basin through a grate (drop) inlet, curb inlet, combination inlet or manhole type structure. The downward flow is intercepted and captured by the EnviroPod® LittaTrap™ device that is placed inside the entry portion of these catch basin types. Once flow enters the EnviroPod® LittaTrap™, the EnviroPod® LittaTrap™ seals and basket collar direct the flow over the bypass slots and into the basket and optional liner (as applicable). The LittaTrap™ seals are adjustable to ensure all particles diverted into the basket and liner will not cause "short-circuiting" or create early bypass of the design volume of runoff or treatment flows.

The LittaTrap™ filter box sits on a support bracket that cantilevers off a single wall of the catch basin. The support bracket is located approximately 8 inches below the surface level creating a driving head to increase the maximum bypass flow rate without causing surface ponding. The support bracket has been structurally designed to take the load of the basket that is filled with sediment, while the peak bypass flow is conveyed into the catch basin.

The patented EnviroPod® LittaTrap™ gross pollutant basket incorporates a structural batten that has three functions:

1. Constrains the basket preventing the expansion or "bulging" so the basket can be easily removed when full of material.
2. Maintains a secondary flow path around the basket for bypass flows; and
3. Maximizes the screen area and material storage volume of the basket.

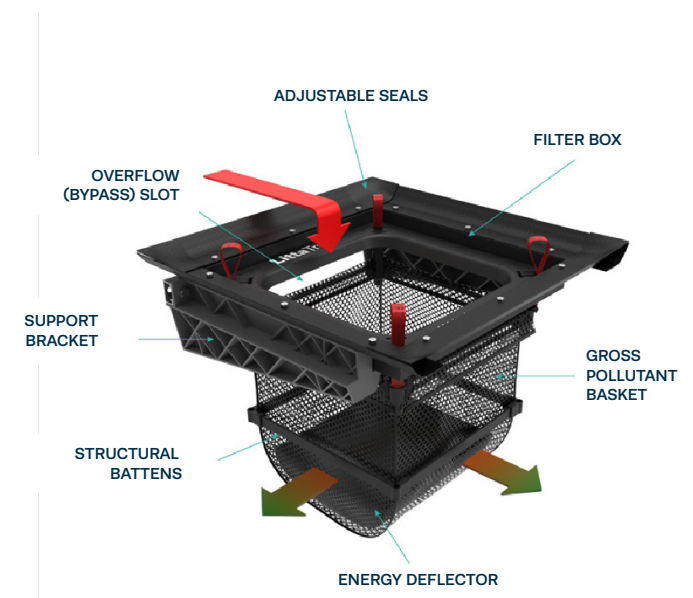


Figure 2: EnviroPod® LittaTrap™ FC Operation

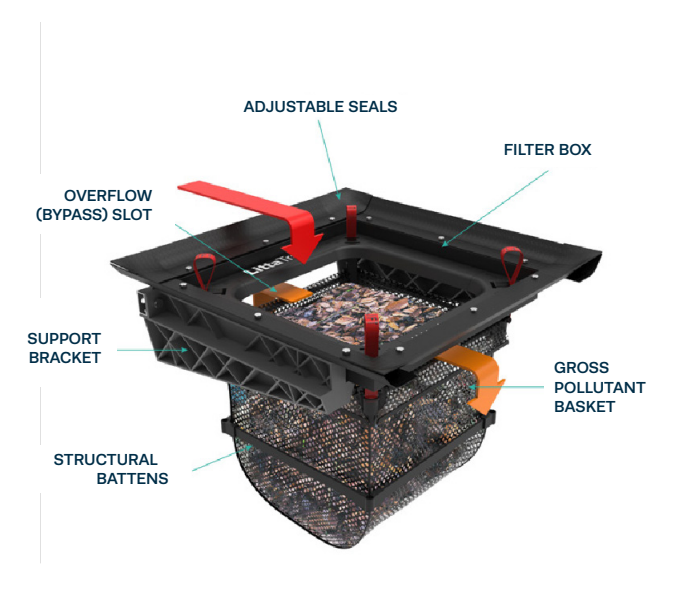


Figure 3: EnviroPod® LittaTrap™ FC Bypass Operation

Inspection and Maintenance Procedures

HEALTH AND SAFETY:

EnviroPod® recommends that owners check and utilize any applicable State and local regulatory requirements for applying a Site-Specific Safety Plan before undertaking any installation, inspection, or maintenance service. Personal Protection Equipment (PPE) is required when installing, inspecting, or maintaining a EnviroPod® LittaTrap™. Field personnel shall utilize personal protection equipment (PPE) as required, including gloves, long sleeve shirts or outdoor wear, long pants, Hi-Viz clothing as well as steel toe shoes. For additional advice on the relevant health and safety requirements, we recommend that you consult the local health and safety regulator.

INSPECTIONS:

All stormwater inlet filter devices require routine inspection and maintenance service to ensure continued functionality of the device as well as identify and remove trapped contaminants and to minimize bypass. Due to the variable nature of stormwater pollution, annual rainfall characteristics and localized site pollutant loadings, maintenance service frequencies can vary for any catch basin location.

It is recommended to inspect the LittaTrap™ EnviroPod® LittaTrap™ at least four times per year during the first year of operation to determine seasonal and annual maintenance requirements. First year inspection service frequency is recommended by conducting one inspection visit for every three months after a LittaTrap™ Inlet Filter device is installed and is placed in operation. However, if there is a presence of a high potential loading activity within the drainage area, it's recommended that catch basin inspection frequency be revised. High loading activity in the upstream drainage area may include the following:

- A high number of trees or vegetation.
- Construction activity.
- Uncovered or unsealed roadways

Additional inspections are recommended after major storm events. The LittaTrap™ should be inspected after a major storm event to check for any unforeseen damage or to find evidence of illicit discharge.



Figure 4: LittaTrap™ seen with 1mm liner installed to target micro-plastics such as plastic pellets. Hand maintenance shown.

MAINTENANCE FREQUENCY

Maintenance of the EnviroPod® LittaTrap™ is recommended when more than 75% of the maximum trash capture volume of the LittaTrap™ model size installed. Maintenance frequency is typically conducted 1 or 2 times per year, depending on pollutant load conditions within a particular drainage area. If applicable, maintenance frequency shall be conducted as per any local municipal or State stormwater permit requirements.

MAINTENANCE PROCEDURES

The EnviroPod® LittaTrap™ maintenance service involves two activities. These activities are as follows:

1. Routine removal and emptying of the gross pollutant basket and liner (if used); and
2. Inspection for any structural damage or flow impedence.

The recommended maintenance procedure for grate (drop) inlets or combination grate/curb inlet catch basins is for the end-user or maintenance service contractor

to conduct maintenance service by "hand" to reduce operational cost. Each EnviroPod® LittaTrap™ basket is fitted with lifting handles on four sides of the basket, so that maintenance personnel will have no personal contact with the captured and retained pollutants.

EnviroPod® also recommends the use of a vacuum induction truck (ie; vacator truck or heavy industrial vacuum equipment) for the maintenance of curb entry catch basin LittaTrap™ inlet filter devices.

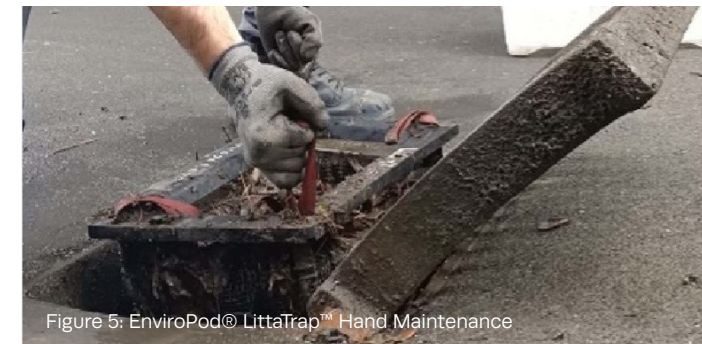


Figure 5: EnviroPod® LittaTrap™ Hand Maintenance

EnviroPod® LittaTrap™ FC Hand Maintenance

It is recommended that the EnviroPod® LittaTrap™ FC basket and liner be emptied when 75% Full. To empty the EnviroPod® LittaTrap™ FC, it is a simple one-minute exercise "Lift, Tip, Replace". The following steps detail hand maintenance:

1. Establish a safe working area per typical catch basin service activity.
2. Remove grate/access cover.
3. Remove the basket and liner with two lifting hooks or lift by hand through the loops on the top of the basket. Excess debris should be scooped out first if the basket is over half full.
4. Pour contents of the basket and liner into a disposal container.
5. Replace grate.



Figure 6: LittaTrap™ Vacator Maintenance

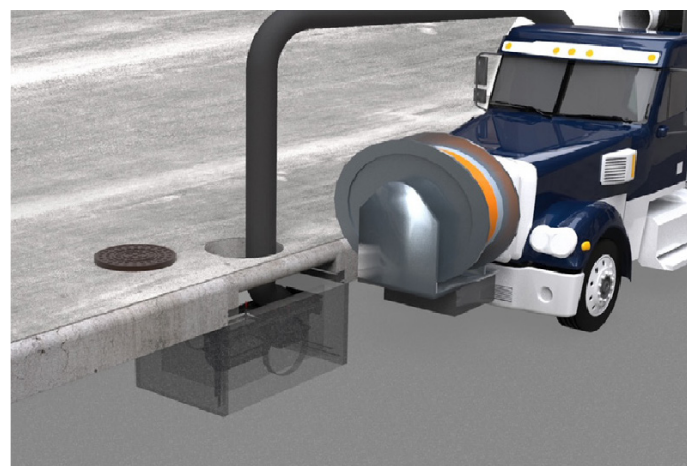
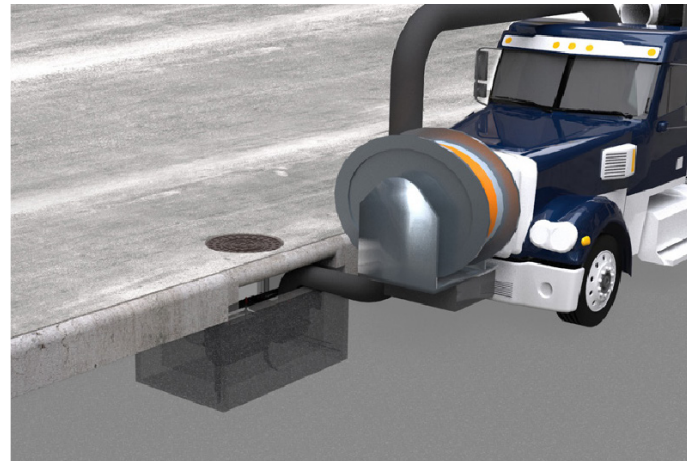
EnviroPod® LittaTrap™ FC Vacator Maintenance

The steps for induction maintenance are detailed below:

1. Establish a safe working area per typical catch pit service activity.
2. Remove grate/access cover.
3. Vacuum accumulated debris from the basket.
4. Vacuum contents from the base of the catch basin (if required).
5. Inspect basket, filter box, and seals for any damage.
6. Replace grate/access cover.

CURB ENTRY CATCH BASIN MAINTENANCE

For curb entry catch basins, the geometry of the EnviroPod® LittaTrap™ basket allows a vacator hose to enter the basket through the curb opening, as shown in the figure below. Alternatively, baskets can be accessed through the catch basin access manhole.



ENVIROPOD® LITTATRAP™ BASKET AND FULL CAPTURE LINER CLEANING.

Material trapped in the EnviroPod® LittaTrap™ basket and or full capture liner is easily removed by shaking the basket or tapping the basket against a hard surface. If required a power washer can be used to remove excess sediment or debris trapped in the screen

RECORD-KEEPING MAINTENANCE PROCEDURES

- Following maintenance and/or inspection, EnviroPod® recommends that the owner or maintenance service contractor prepare a maintenance/inspection record. The record shall include any maintenance activities performed, amount and description of debris collected, and condition of the system and its various filter mechanisms.
- The owner shall retain the maintenance/inspection records in accordance with local and/or state requirements.

REQUIRED EQUIPMENT AND MATERIALS FOR MAINTENANCE ACTIVITIES.

The following equipment is helpful when conducting EnviroPod® LittaTrap™ Grate Inlet and Curb Inlet inspections and maintenance:

- Recording device (pen and paper form, voice recorder, iPad, etc.)
- Personal protection equipment (protective footwear, gloves, hardhat, safety glasses, high visibility clothing, etc.)
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Manhole hook or pry bar
- Flashlight
- Tape measure
- Vacuum truck (optional)
- Pressure washer (optional)
- Replacement oil absorbent pouches (Optional)

REPAIR OR REPLACEMENT PROCEDURES.

In the unlikely event of an EnviroPod® LittaTrap™ FC structural component requiring repair, the system can be easily uninstalled by reversing the installation procedure. Once uninstalled, any faulty part or component can be replaced.

Inspection and Maintenance Form

ADDRESS:

OWNER/LOCATION NAME:

DATE:

INSPECTOR NAME/COMPANY

Catch Basin Name/Number	Percentage Full of Trash/Debris (Mark X in appropriate box)				Condition of the LittaTrap™ Good/Poor (Requires Attached?)	Annual Weighting factor	Comments
	0-25%	25-50%	50-75%	75-100%			

COMMENTS:

Please include 3 photographs of each catch basin with the grate closed, grate open and upstream catchment.
 Is the LittaTrap™ more than 75% full?
 >75%: Proceed with maintenance.
 If 50-75%: Maintenance recommended in the next 2 months.



QR CODE FOR THE ONLINE SURVEY

Download the ArcGIS Survey123 app on Android or Apple. No sign-in required, simply scan the QR code and complete. EnviroPod® will send you the Inspection or maintenance report.

ABOUT ENVIROPOD

EnviroPod® is Australasia's leading catch basin insert technology provider. The company has over 25,000 installs of its technology worldwide, including catchment wide retrofits. The LittaTrap™ is a result of 25 years' of research, implementation and operation of source treatment solutions.

For further information please see www.enviropod.com

International patent numbers for : CA - 2,810,974 ; USA - 9,642,658 ; AU - 2011302712 ; NZ - 588049 . Other patents pending.

