

# LittaTrap™

## Technical Guide



# LittaTrap™

The LittaTrap is an innovative catch basin insert designed to be easily retrofitted into new and existing stormwater catch basins to specifically target litter, plastic and gross pollutants over 5 mm. In addition, the LittaTrap has patented flow dampening components that dissipate energy, promote Total Suspended Solids (TSS) capture in sumped catch basins, and provide the full capture of gross solids. The novel design maintains catch basin hydraulic conductivity and allows easy maintenance when completely full of trash and debris.

The patented batten basket configuration gives the LittaTrap a high screen area and storage volume, allowing the system to have a high hydraulic conductivity through its service life. The basket also allows the system to be easily removed in times of maintenance. As the system is on-line, the basket and overflow design provides an unimpeded secondary flow path. This ensures the system does not compromise the hydraulic capacity of the catch basin it is installed into.

Standard catch basins are prone to resuspension and washout of previously captured sediment during moderate-intensity and high-intensity storm events. By retrofitting existing sumped catch basins with LittaTrap, sediment capture and retention can be greatly enhanced. The system is easy to install and safe to maintain with a large storage volume relative to its catchment area. Confined space entry is not required to maintain this stormwater treatment device.

## COMPONENTS AND OPERATION

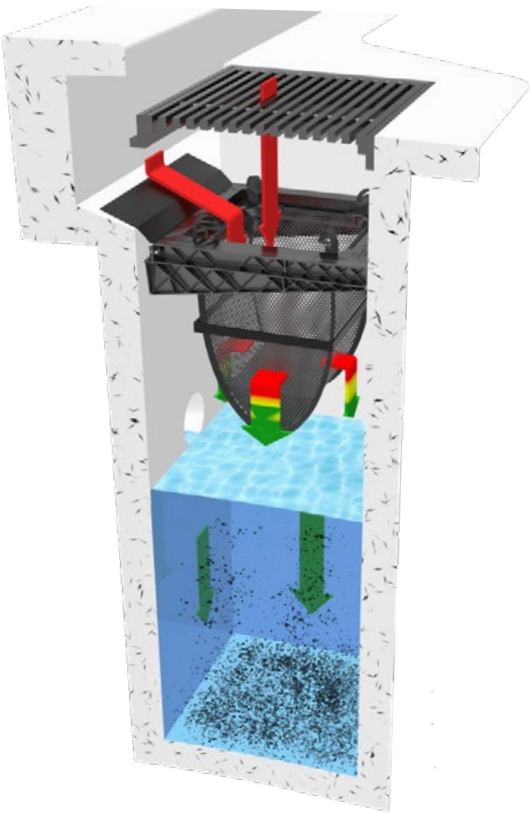
The LittaTrap consists of Support System, Plastic Seals, Flow Diverter, Energy Dissipator, Basket and Adjustable Bypass. All components are made of high-density plastic.

There is a three treatment process employed when the LittaTrap is installed inside a sumped catch basin:

- 1. **Screening** for capture of gross pollutants
- 2. **Flow distribution** to enhance sediment capture
- 3. **Energy dissipation** to minimize sediment resuspension and washout

Flow enters the catch basin through a grate, curb inlet or both. Downward flow is intercepted and directed in multiple directions by the basket's patented energy dissipation design. Flow distribution is improved and sump turbulence is greatly reduced, serving to increase sediment capture, while minimizing sediment resuspension during higher intensity storm events.

Gross solids are dewatered and retained in the basket above the static water elevation, which inhibits the breakdown and release of nutrients and other contaminants.



## FEATURES

- Strong, lightweight, patented batten basket design
- Flow distribution and energy dissipation
- Storage of dewatered gross pollutants
- Sensible, durable design
- Adjustable, high flow rate bypass
- High capacity pollutant storage

## BENEFITS

- Complete capture of gross pollutants
- Basket resists tearing or deformation when full
- Easy cleaning of basket by hand or vacuum
- Enhanced sediment capture and retention
- Superior nutrient capture
- Simple installation, long-lasting performance
- Maintains system hydraulic capacity
- Reduced maintenance frequency

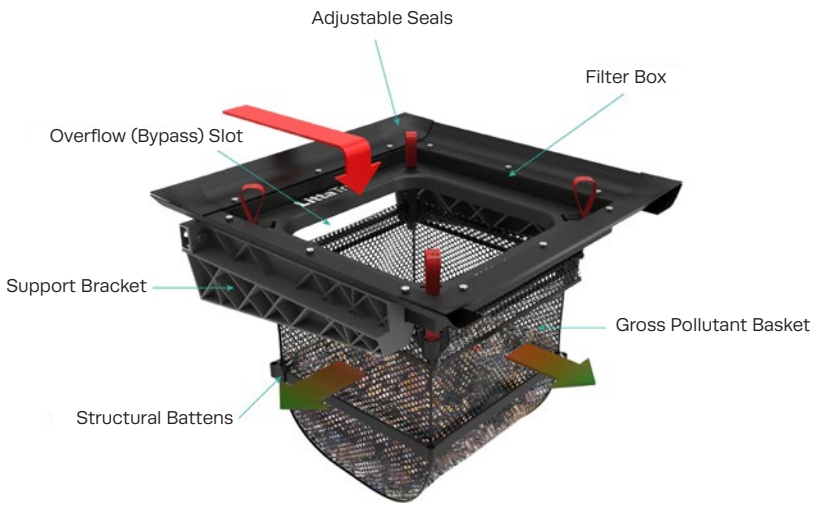


# Performance

The LittaTrap enhances the pollutant removal and retention of a standard catch basin. This was evaluated by a series of lab tests performed at Good Harbour Laboratories, Toronto, Canada.<sup>1</sup>

Gross pollutant removal, TSS removal, and sediment resuspension were evaluated for a LittaTrap enhanced catch basin and compared to a control catch basin without the LittaTrap.

The performance evaluation was based on a combination of Canadian Environmental Technology Verification Program (ETV), New Jersey Department of Environmental Protection (NJDEP) test protocols and California Department of Transportation (CALTRANS) performance evaluation protocols.



## TRASH AND SEDIMENT REMOVAL RESULTS

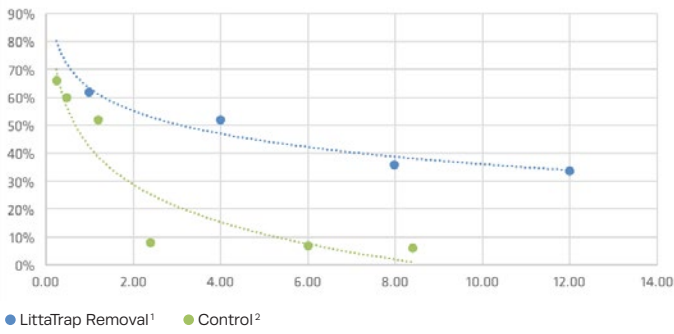
The LittaTrap increases the sediment removal of the control catch basin from 20% to 50% at flow rate of 3.5 l/sec.

LittaTrap Gross Pollutant Test Results		
Flow Rate (l/sec)	Mass of Escaped Solids (g)	Estimated Gross Solids Capture Efficiency (%)
5	0.0275	100 <sup>i</sup>
10	0.1546	99.9 <sup>i</sup>
15 <sup>ii</sup>	1.47	99.2 <sup>i</sup>

Table 1: LittaTrap Gross Pollutant Test Results

i. Based on an added mass of 193g  
ii. Flow held for 55 min. following the addition of solids

LittaTrap Vs Control Catch Basin Sediment Removal

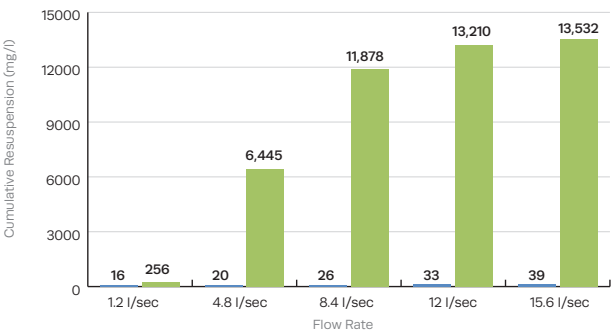


Graph 1: Comparative removal efficiency of a LittaTrap enhanced catch basin and a control catch basin.

## SCOUR TESTING

As the LittaTrap is an online treatment device, it is important to evaluate scour. Graph 2 below compares the TSS resuspension of LittaTrap enhanced catch basin with a control. The LittaTrap almost eliminates resuspension of captured sediment in the catch basin.

Resuspension Testing



Graph 2: Scour testing results



There is much less turbulence in the sump below the LittaTrap.

## HYDRAULIC SPECIFICATION AND STANDARD MODELS

The table below details the nominal dimensions and hydraulic capabilities of the standard LittaTrap models.

Other models are available on request, including adapter kits for round catch basins. For more information and drawings, please contact [info@enviropod.com](mailto:info@enviropod.com).

LittaTrap is typically sized to treat a minimum 90% of the average annual runoff.



LittaTrap Model <sup>1</sup>	Nominal Catch Basin Internal Dimensions				Treatable Flow Rate for Sediment Removal <sup>2</sup>		Treatable flow Rate for Gross Pollutants <sup>3</sup>		Max Bypass Flow Rate	
	Length		Width		I/sec	GPM	I/sec	GPM	I/sec	GPM
LT3030	12	300	12	300	1.2	19	3.8	60	20.0	317
LT4545	18	450	18	450	2.7	43	8.4	133	45.0	713
LT6745	26	675	18	450	4.1	65	12.7	201	61.0	967
LT6060	24	600	24	600	4.8	76	15.0	238	67.0	1062
LT6090	24	600	36	900	7.2	114	22.5	357	103.0	1633
LT9090	36	900	36	900	10.8	171	33.8	536	129.0	2045

Table 3: LittaTrap Grated & Combination Models

1. More LittaTrap models and sizes available on request  
2. Based on Surface Loading Rate of 800 L/min/m2 and minimum average annual removal of 50% of the CA ETV PSD  
3. Based on Surface Loading Rate of 2500 L/min/m2 and minimum average annual removal of 99% of gross pollutants 5mm and larger

1. Performance Testing of a LittaTrap Catch basin Filter, Good Harbour Labs  
2. Canadian ETV license Number 2015-6 Certificate



# Operation

## HEALTH AND SAFETY

We recommend checking your local regulations for a Site-Specific Safety Plan before undertaking any installation or maintenance. Personal Protection Equipment (PPE) is required when installing or maintaining an LittaTrap. This will mean gloves, long sleeves, long pants, Hi-Viz clothing and closed shoes.

For additional advice on the relevant Health and Safety requirements, we recommend that you consult your local Heath and Safety regulator.

## MAINTENANCE

All treatment devices require maintenance to remove trapped contaminants and to minimize bypass. Due to the variable nature of stormwater pollution and localized site pollutant loadings, maintenance frequencies vary for different sites and different rainfall characteristics.

It is recommended to inspect the LittaTrap frequently over the first few years of operation to determine seasonal and annual maintenance requirements.

LittaTrap maintenance involves two activities. These are as follows:

- 1. Routine removal and emptying of the gross pollutant basket; and
- 2. Periodic vacuum of oils and sediment from the catch basin sump.

## INSTALLATION

Installing a LittaTrap is a simple process that takes approximately 15 minutes per catch basin.

See [www.enviropod.com](http://www.enviropod.com) for instructional guides.

### LittaTrap Hand Maintenance

It is recommended that the LittaTrap basket be emptied when 85% full. At this level, the basket can still convey 15 l/sec @ 99% gross solid removal.

To empty the LittaTrap basket, it is a simple one minute exercise "Lift Tip Replace".

1. Establish a safe working area per typical catch basin service activity.
2. Remove grate / access cover.
3. Remove the basket 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 into a disposal container.
5. Replace grate.

The LittaTrap basket maintenance is typically required 1 or 2 times a year, however it is dependent on the catchments' pollutant loading.



1 Lift



2 Tip



3 Replace

Maintenance of the LittaTrap basket is a simple one minute exercise 'Lift Tip Replace.'



Vacuum eduction of LittaTrap sump

### Catch Basin Sump Maintenance

It is recommended that the sump of the catch basin installed with a LittaTrap be vacuum cleaned when the sediment in the sump is 50 mm below the outlet.

The sump of the catch basin is easily accessed by removing the basket. Conventional catch basin cleaning equipment can be used.

It is anticipated that sump maintenance will be between 1 – 3 years depending on catch basin sump depth and pollutant loading.

The steps for induction maintenance are detailed below:

1. Establish a safe working area per typical catchpit service activity.
2. Remove grate / access cover.
3. Vacuum accumulated debris from the basket and remove.
4. Remove and inspect the oil absorbent pouches (if applicable).
5. Vacuum contents from sump.
6. Re-install oil absorbent pouches (if applicable).
7. Replace grate.





# Applications



**Pretreatment**



**Manufacturing**



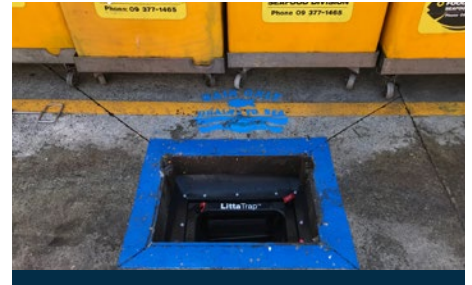
**Retail**



**Industrial**



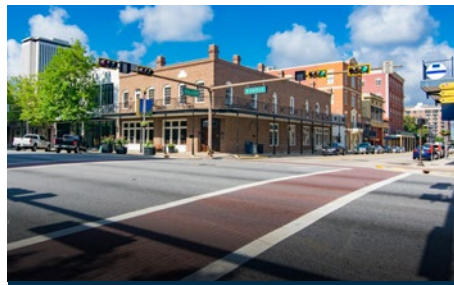
**Smoking Areas**



**Food Processing**



**Pedestrian Areas**



**City Streets**



**Car Parks**

## 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](http://www.enviropod.com)



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