

How a Solar-Powered Water Wheel Can Clean 50,000 Pounds of Trash Per Day from Baltimore's Inner Harbor

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A large wheel has been strolling the Baltimore Inner Harbor the past month, doing its best to clean the trash that has littered a city landmark and tourist attraction.

It's called the [Inner Harbor Water Wheel](#), and though it moves slow, it has the capability to collect 50,000 pounds of trash. The timing for John Kellett's [solar-powered](#) creation is crucial—hands and crab nets simply can't keep up with the growing amount of wrappers, cigarette butts, bottles and other debris carried from storm drains into the harbor.

Click here to watch "Mr. Trash Wheel operating in a rain storm (Baltimore, MD)":
<https://www.youtube.com/watch?v=v5I7s6wC50g>

"It looks sort of like a cross between a spaceship and a covered wagon and an old mill," says Kellett told [NPR](#). "It's pretty unique in its look, but it's also doing a really good job getting this trash out of the water."

The wheel has become an integral part of the [Healthy Harbor Waterfront Partnership Initiative](#). It receives power from the Jones Falls river's current near the harbor, which turns the wheel and lifts trash from the water into a dumpster barge. A solar panel array keeps it running when there water current isn't enough.



Graphic credit: Healthy Harbor

The wheel is now docked to the harbor. Each it runs, it removes an impressive amount of debris. So far, it has never collected less than eight cubic yards of trash.

Water Wheel trash and debris removal stats:

Dumpster	Date	Weight (tons)	Total weight (tons)	Volume (cubic yards)	Total volume (cubic yards)
1	5/16/14	4.31	4.31	18	18
2	5/16/14	2.74	7.05	13	31
3	5/16/14	3.45	10.5	15	46
4	5/17/14	3.1	13.6	15	61
5	5/17/14	4.06	17.66	18	79
6	5/20/14	2.71	20.37	13	92
7	5/21/14	1.91	22.28	8	100
8	5/28/14	3.7	25.98	16	116
9	6/5/14	2.52	28.5	14	130
10	6/11/14	3.76	32.26	18	148
11	6/11/14	3.43	35.69	15	163
12	6/13/14	5.13	40.82	19	182
13	6/13/14	4.15	44.97	15	197

Graphic credit: Healthy Harbor

Healthy Harbor hopes to make the body of water swimmable in less than six years, and the Water Wheel could be a big part of that.

“The water wheel has been a time-saver for us,” said Bill Flohr, who runs Baltimore Harbor’s East Marina. “It seems to be collecting probably 95 percent of what we normally had to pick up by hand.”
