

BALTIMORE'S ANNUAL

HEALTHY HARBOR REPORT CARD 2014



"If I see someone litter I'll ask, 'please pick it up.' If they don't I'll pick it up myself."



~Tyese Houston, John Eger Howard Elementary School



Photo Credit: Adam Lindquist

ABOUT THE COVER

The cover of this year's Report Card features John Eager Howard Elementary School students Moriah McQueen, Nayarie Frazier, Dalante Wheeler, Makiyah Mathews, and Tyese Houston posing in front of the Water Wheel trash interceptor located at the end of the Jones Falls in Baltimore's Inner Harbor.

The students, members of their school's Green Team, gave an inspirational performance of an original song and dance on the importance of recycling and picking up litter at the unveiling of the Water Wheel in May 2014.

Dalante Wheeler imagines one day fishing, surfing and boating in the Harbor, but says the grade needs to reach at least a B+. "Litter isn't cool," he says. "Litter in the water kills animals. We want to eat fish, but we want to eat healthy fish!"

The students are now a year older but they are still committed to their fight for clean neighborhoods and healthy water. "I feel sad, mad and angry when I see people litter," says Tyese Houston. "If I see someone litter I'll ask, 'please pick it up.' If they don't I'll pick it up myself."

2014 OVERALL WATER HEALTH

In 2014, Baltimore's streams, rivers and Harbor scored between 52% and 61%. While these scores are poor and nearly all failing, they show continuing improvement over the past two years.

Water quality scores improved in the Gwynns Falls in 2014, bringing the overall grade of this stream up to a D- for the first time. However, water quality in the Jones Falls was generally worse than in 2013.

We continue to see failing grades for conductivity throughout the region regardless of weather patterns. Scientists have observed that the over-application of road salt during

snow and ice events has caused groundwater to become more saturated with salt, which results in poor conductivity scores.

Although bacteria scores in the Harbor tended to be better in 2014, we continued to see excessively high fecal bacteria levels following rain events. This is primarily due to wet-weather sanitary sewer overflows discharging raw sewage into the water. Significant rain events routinely overwhelm Baltimore's aging sewer system and cause sewage to enter our streams and Harbor, which results in bacteria levels hundreds of times higher than what is considered "safe" for humans to touch.

TIDAL WATER QUALITY SCORES

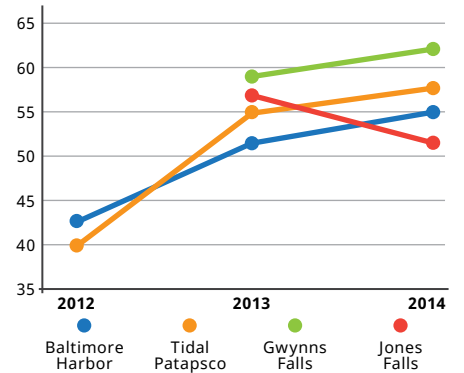


Photo Credit: Neil Dampier Photography

WHAT DO THE WATER QUALITY INDICATORS MEAN?

FECAL BACTERIA is a human health indicator. Bacteria measurements help us determine the risk of getting sick if someone comes into contact with the water. Some common sources of bacteria are sewage overflows, broken sewer pipes and pet waste.

CHLOROPHYLL *a* tells us if there is too much algae in the water. Too much algae can lead to low dissolved oxygen, which can harm organisms living in Baltimore's waters.

CONDUCTIVITY tells us if there are too many salts and chemicals in the streams that could harm fish and other organisms.

DISSOLVED OXYGEN is important for all organisms that live in the water.

TOTAL NITROGEN AND TOTAL PHOSPHORUS are nutrients that tell us how much stormwater pollution is coming from the land. Some common sources of nutrient pollution are fertilizers, waste water, urban runoff, and the burning of fossil fuels.

TURBIDITY AND WATER CLARITY are important for fish and plants in the water. The water should be clear so that fish can see and find their prey and underwater plants need light to grow.

Baltimore Harbor

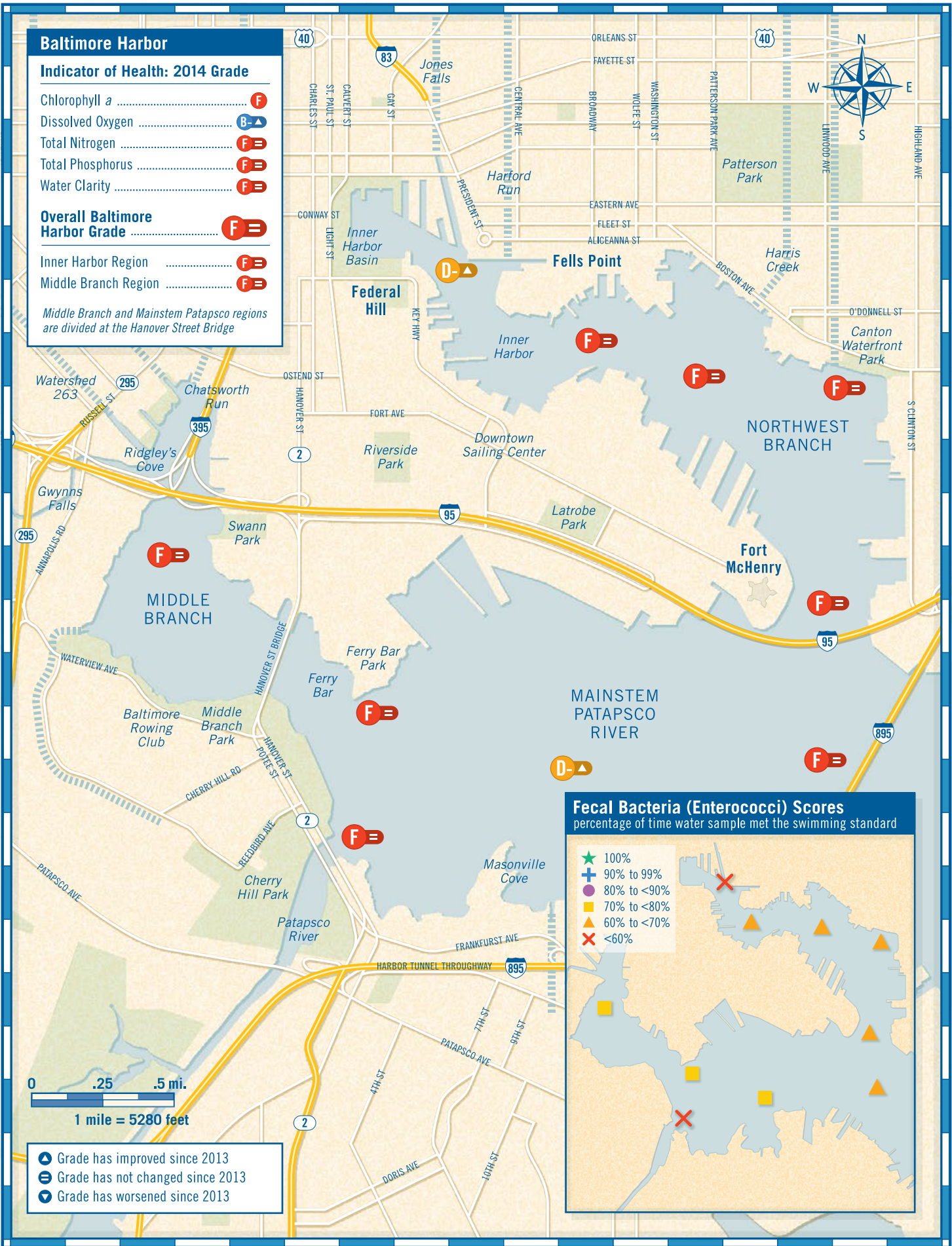
Indicator of Health: 2014 Grade

| | |
|----------------------------|-----|
| Chlorophyll <i>a</i> | F |
| Dissolved Oxygen | B-▲ |
| Total Nitrogen | F= |
| Total Phosphorus | F= |
| Water Clarity | F= |

Overall Baltimore Harbor Grade

| | |
|--------------------------------------|----|
| Overall Baltimore Harbor Grade | F= |
| Inner Harbor Region | F= |
| Middle Branch Region | F= |

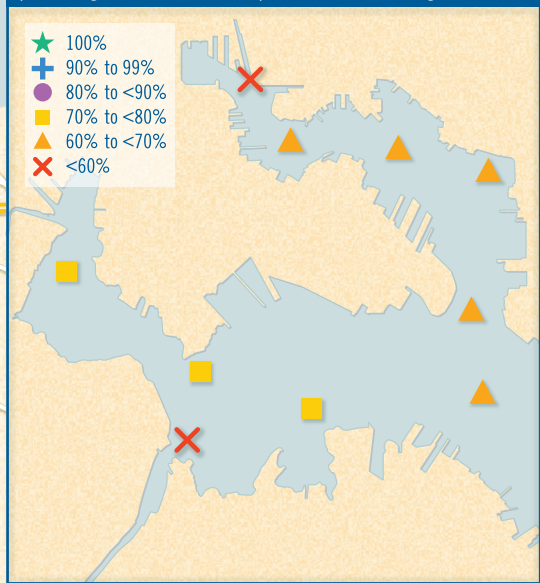
Middle Branch and Mainstem Patapsco regions are divided at the Hanover Street Bridge



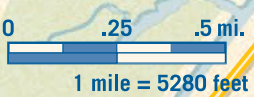
Fecal Bacteria (Enterococci) Scores

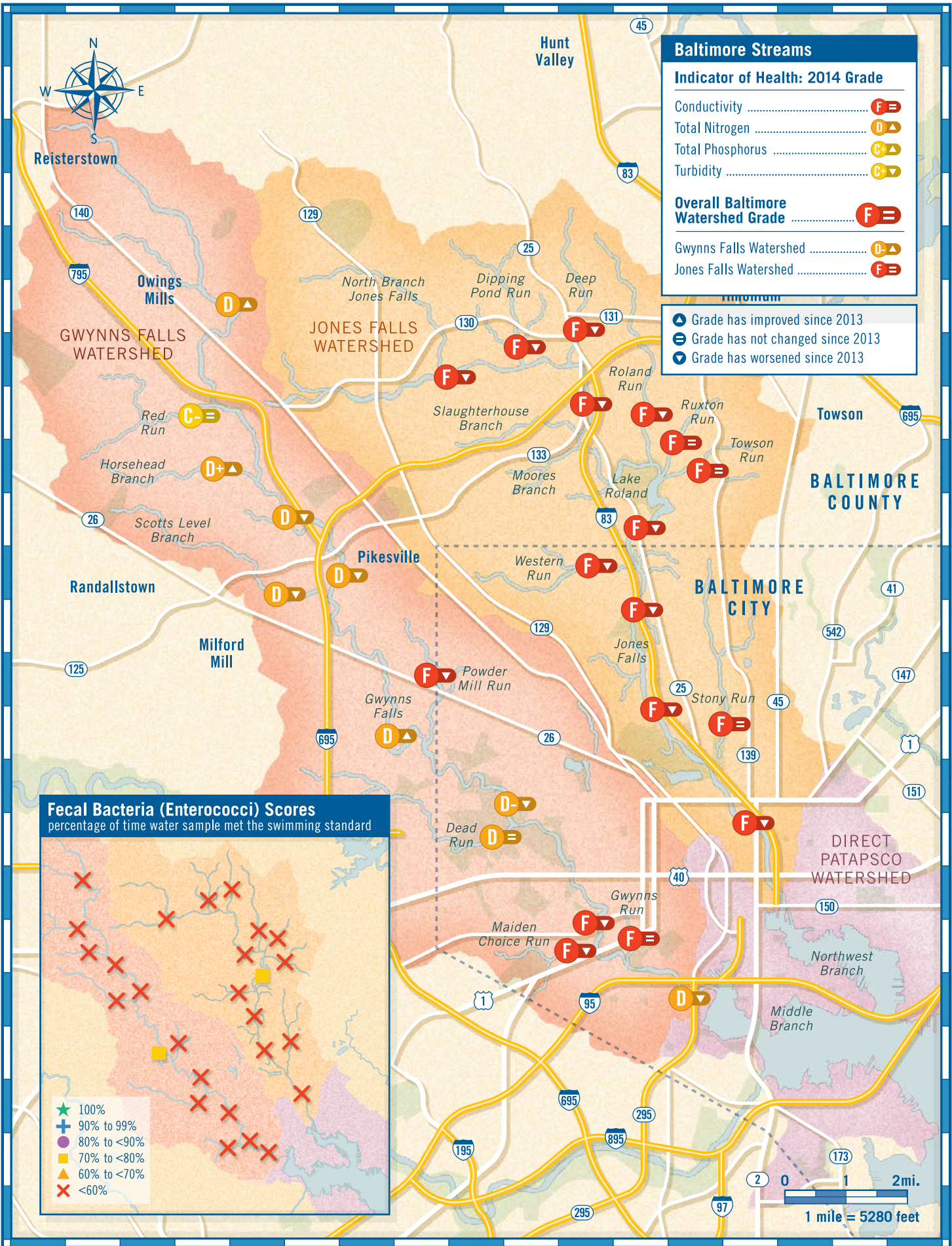
percentage of time water sample met the swimming standard

| | |
|---|-------------|
| ★ | 100% |
| + | 90% to 99% |
| ● | 80% to <90% |
| ■ | 70% to <80% |
| ▲ | 60% to <70% |
| × | <60% |



| | |
|---|----------------------------------|
| ▲ | Grade has improved since 2013 |
| = | Grade has not changed since 2013 |
| ▼ | Grade has worsened since 2013 |





Baltimore Streams

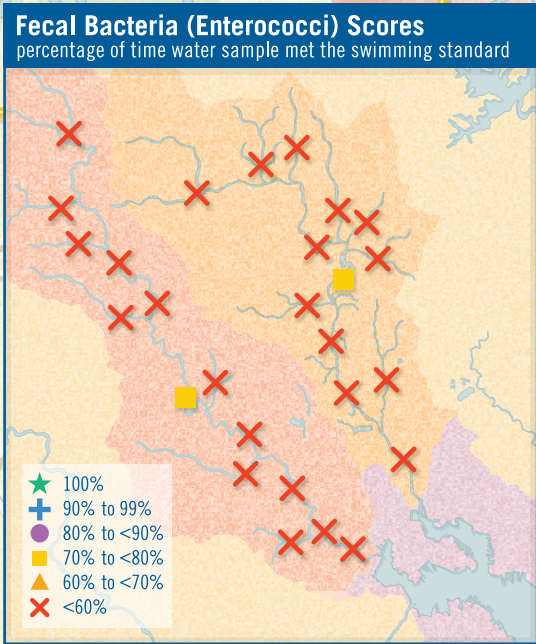
Indicator of Health: 2014 Grade

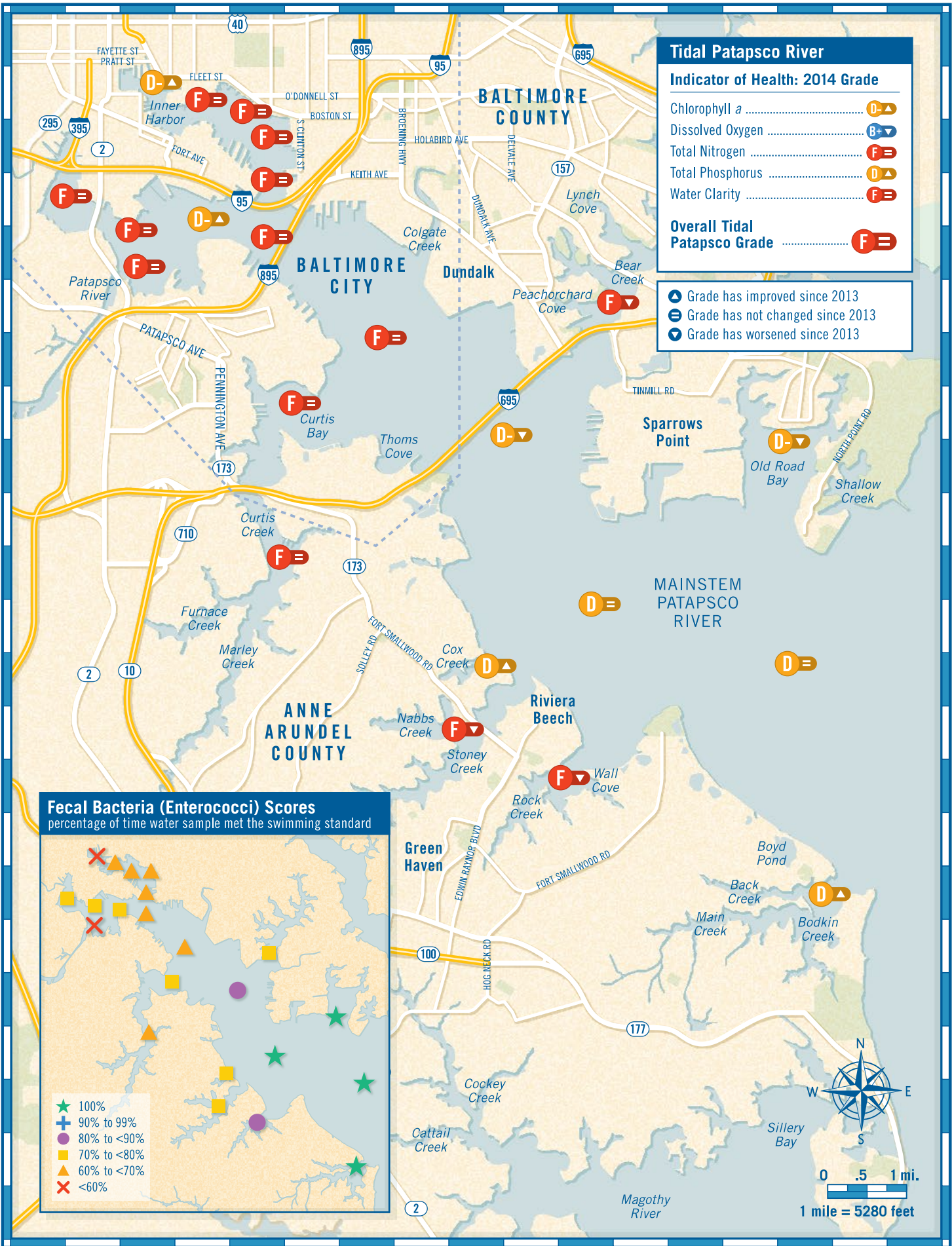
| | |
|------------------------|------|
| Conductivity | F = |
| Total Nitrogen | D = |
| Total Phosphorus | C+ = |
| Turbidity | C+ = |

Overall Baltimore Watershed Grade

| | |
|---|-----|
| Overall Baltimore Watershed Grade | F = |
| Gwynns Falls Watershed | D = |
| Jones Falls Watershed | F = |

- ▲ Grade has improved since 2013
- ◻ Grade has not changed since 2013
- ▼ Grade has worsened since 2013

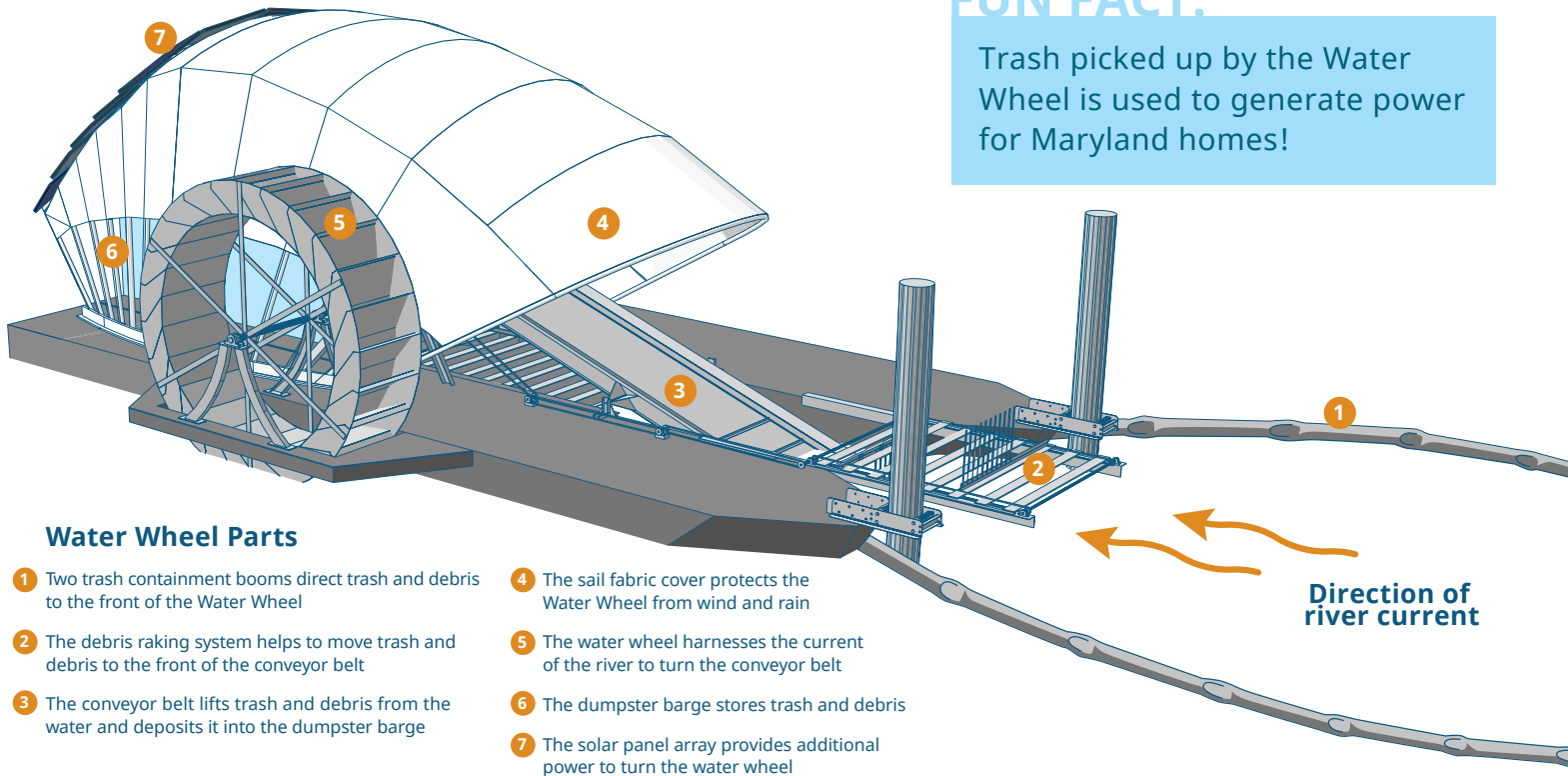




THE INNER HARBOR WATER WHEEL: A GAME CHANGER FOR TRASH IN URBAN WATER BODIES

FUN FACT:

Trash picked up by the Water Wheel is used to generate power for Maryland homes!



Water Wheel Parts

- 1 Two trash containment booms direct trash and debris to the front of the Water Wheel
- 2 The debris raking system helps to move trash and debris to the front of the conveyor belt
- 3 The conveyor belt lifts trash and debris from the water and deposits it into the dumpster barge
- 4 The sail fabric cover protects the Water Wheel from wind and rain
- 5 The water wheel harnesses the current of the river to turn the conveyor belt
- 6 The dumpster barge stores trash and debris
- 7 The solar panel array provides additional power to turn the water wheel

The Inner Harbor Water Wheel is a phenomenal invention dreamed up by Baltimore inventor John Kellett and his company Clearwater Mills. It sits at the end of the Jones Falls in Baltimore's Inner Harbor where it scoops up hundreds of tons of trash from the river each year. It harnesses the power of water and sunlight to pick up litter and debris carried into the river by stormwater running off of streets, parking lots, sidewalks, and alleys.

Since its installation in May 2014 the Water Wheel has inspired the world as a practical solution for keeping plastics out of the oceans. Mexico City, Rio de Janeiro, Rotterdam, and Honolulu are just some

of the cities to have inquired about whether water wheels could help clean their rivers and bays. The Water Wheel has been viewed over one million times online, been featured on NBC News, and won the Ford Motor Company's Go Further Award for Best Use of Technology.

The success of the Water Wheel underscores the importance of Baltimore City's stormwater fee, which helps to fund the project. Waterfront Partnership of Baltimore, which owns and operates the device, is currently raising money to build a second wheel at the outfall of Harris Creek in Baltimore's Canton neighborhood.

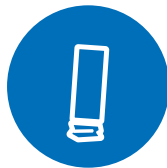
Water Wheel Composition Totals: 158.57 tons since May 2014 through March 2015



97,170
Plastic
Bottles



126,109
Polystyrene
Containers



4,369,000
Cigarette
Butts



2,365
Glass
Bottles



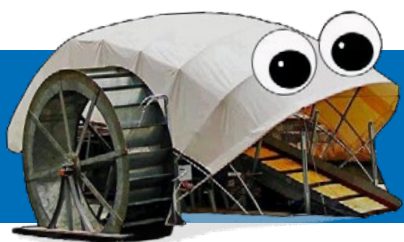
42,640
Grocery
Bags



79,299
Chip
Bags



327
Sports
Balls



YOU CAN FOLLOW THE WATER WHEEL
ON TWITTER @MRTRASHWHEEL!

A BLUE ALLEY, A GREENER NEIGHBORHOOD

Blue Water Baltimore's Blue Alleys and Neighborhoods project involved intensively retrofitting several streets and alleys in Baltimore's Patterson Park and Butchers Hill neighborhoods to reduce and treat stormwater runoff. Using a combination of rain gardens and permeable pavers, this project serves as a demonstration to be replicated throughout the City.

Funded by the National Fish and Wildlife Foundation and constructed in partnership with the Baltimore City Department of Public Works, the project will help to filter polluted rainwater

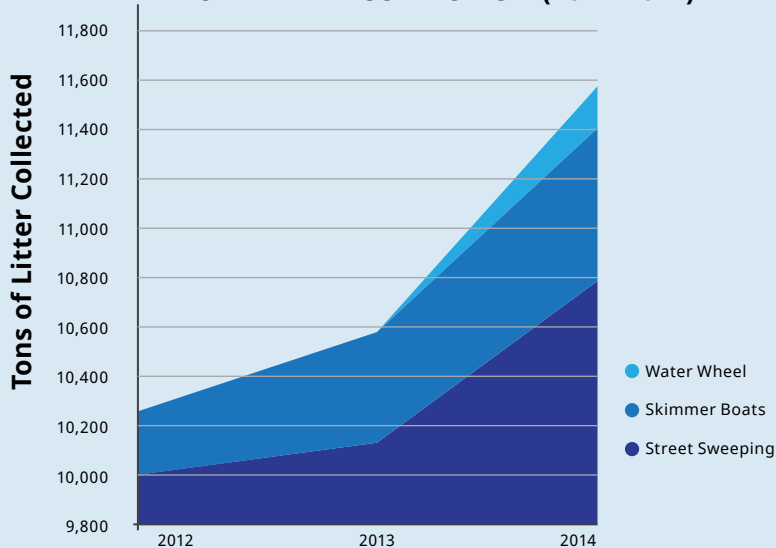
before it reaches streams and the Harbor while also creating an attractive neighborhood amenity. The permeable pavers were chosen for their aesthetic resemblance to the historic cobble stone streets of Baltimore (though less bumpy) while the rain gardens provide green space in an otherwise completely paved streetscape. The use of native plants mean that the gardens are relatively low-maintenance and provide a colorful habitat for pollinator insects. Residents enjoy their Blue Alleys so much that they have been listed as amenities on neighborhood property listings.



Photo Credit: Blue Water Baltimore

BALTIMORE EXPANDS NEIGHBORHOOD STREET SWEEPING

BALTIMORE LITTER COLLECTION (2012-2014)



Sometimes, the route to a cleaner harbor begins miles away. In Baltimore, that route began in April 2014 in some of the farthest corners of the City, when street sweepers began monthly cleanings of streets and gutters that had never been mechanically swept.

Street sweeping had long been a staple of Downtown Baltimore and other areas of the central city, as well as commuter routes. But when the Stormwater Remediation Fee went into effect, it gave the City a new financial resource, and the impetus to extend sweeping into every neighborhood.

The results of expanded, citywide street sweeping were immediate and dramatic. Hundreds of tons of litter, grit, broken glass, even bacteria and harmful chemicals were swept away and safely disposed in the first month alone.

The Baltimore City Department of Public Works is moving forward with ideas to make the program even better. New sweeping machines are hitting the streets and regular sweeping in the City's central area is to be expanded. Neighbors are working with community officials to further improve the service and tons of pollutants are being kept out of neighborhood waterways and Baltimore's Harbor.

STREAM RESTORATION ON THE GWYNNS FALLS

With the help of stormwater management funds, Baltimore County completed a stream restoration project on the Scotts Level Branch of the Gwynns Falls in May 2014. The project restored 1,420 linear feet of stream and created three acres of wetlands. The major goals of the project were to reconnect the stream to its floodplain, stabilize stream banks and build new wetlands to improve water quality and reduce flooding.

The project included over 2,600 tons of stone installation and 10,000 cubic yards of excavation. Invasive species including Oriental Bittersweet, Wine Berry, Japanese Honeysuckle, Russian Olive, Bradford Pear,

and Winter Creeper were removed from 10 acres of the project site and replaced with 50 lbs. of wildflower seeds. The County also provided bat boxes to attract bats to the wetlands and quell homeowner concerns about mosquitoes.

The Gwynns Falls watershed received a D- in this report card, making it the first Baltimore water body to not receive a failing grade. Scotts Level Branch is one of several projects planned for the Gwynns Falls in Baltimore County. These projects help to make our streams and Harbor clean and safe. For more information visit www.BaltimoreCountyMD.gov.



Photo Credit: Baltimore County

WHAT IS THE HEALTHY HARBOR REPORT CARD?

Healthy Harbor is an initiative of the Waterfront Partnership of Baltimore that brings together area businesses, nonprofits, and local government to support the goal of making Baltimore Harbor swimmable and fishable. The Healthy Harbor Report Card is a tool to help us communicate this goal and track our progress.

This report card is the product of a partnership between the **Waterfront Partnership of Baltimore** and **Blue Water Baltimore**, two local nonprofits working to make Baltimore's neighborhoods, streams and Harbor clean, safe and accessible to all.



LEGISLATIVE UPDATE

DEFENDING STATEWIDE STORMWATER LEGISLATION

In 2012, the Maryland General Assembly passed the Watershed Protection and Restoration Program, a law that required the 10 most populated jurisdictions in the state to establish dedicated funding programs for projects that reduce polluted runoff and improve water quality in the Chesapeake Bay. A fee on impervious surfaces, which significantly contribute to pollution and flooding, was implemented in order to pay for these infrastructure upgrades.

As in previous years, opponents of the law vowed to introduce new legislation to weaken or repeal the existing program. These efforts were intensified because of the anti-tax rhetoric surrounding the 2014 election of candidates who vowed to dismantle the law. Three bills that would have repealed the law were introduced in the 2015 session, but all were given unfavorable reports in committee.

A fourth bill (SB863) was passed by the General Assembly. Senate President Mike Miller introduced the bill, which repeals the requirement for jurisdictions to impose a stormwater fee, but allows local governments to choose whether to continue to charge the fee. Each jurisdiction will still have to demonstrate that they can fund planned projects and programs. In addition, this bill maintains the requirement for a dedicated fund for stormwater programs, which cannot be raided to make up for budget shortfalls in other areas.

BANNING THE BAG

The Community Cleanup and Greening Act (HB551), introduced by Delegate Brooke Lierman, would have prohibited the distribution of disposable plastic bags statewide and placed a modest fee on paper bags.

The legislation brought together a wide range of stakeholders and had the broadest support of any bag bill ever offered in the state. Environmental groups, watershed organizations, community members and even restaurants and retailers all voiced their approval of the bill. Despite broad support by the public and in the General Assembly, Delegate Lierman withdrew the legislation to avoid having it vetoed by the governor, who pledged to reject any bill that included a fee.

KEEPING MICROBEADS OUT OF THE BAY

Plastic microbeads are too small to be filtered out at wastewater treatment facilities and, once out in open waters, are ingested by marine life. The pollutants and chemicals contained in the microbeads are passed up the food chain to larger predators including humans. In 2015, both houses of the General Assembly voted to enact a ban on microbeads (HB216). Products containing microbeads may not be produced after 2017 and must be off store shelves by 2019. This is currently the strongest ban on these types of products in the country!

THE MARYLAND REDEEMABLE BEVERAGE CONTAINER AND LITTER REDUCTION PROGRAM.

The General Assembly heard a bill that would enact a five-cent deposit on glass and plastic bottles (HB982). However, due to intense opposition from industry groups, beverage corporations and retailers, this bill failed to pass out of committee.



THE HEALTHY HARBOR REPORT CARD IS MADE POSSIBLE BY THE GENEROUS SUPPORT OF OUR SPONSORS:



The Healthy Harbor Report Card is released annually and provides an opportunity for local companies to support environmental restoration. Sponsors partner with Blue Water Baltimore's mission to foster clean waterways and the Waterfront Partnership of Baltimore's Healthy Harbor Initiative for a swimmable and fishable Harbor.

For more information on sponsoring the Healthy Harbor Report Card, please contact Adam Lindquist, Manager of the Healthy Harbor Initiative, at Adam@WaterfrontPartnership.org.