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more pollutants into the watershed. Then, not only are we losing their natural abilities to filter out pollutants and protect water quality, we will have to engineer more costly man-made fixes to make up for their loss.

What happens if we do not meet these goals?

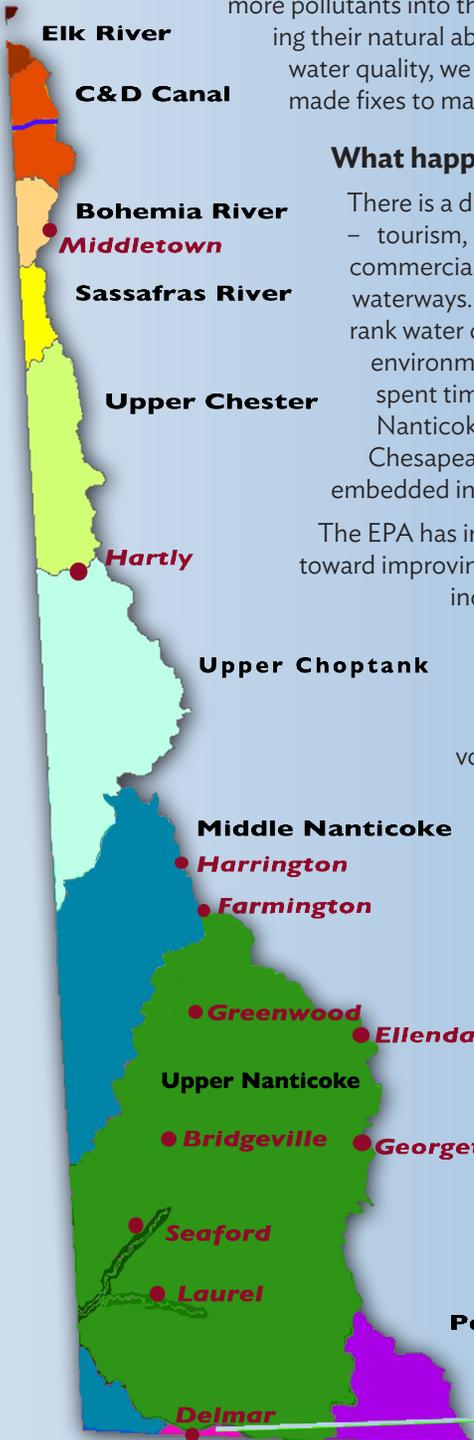
There is a direct benefit to our quality of life – tourism, recreation, health, scenic beauty and commercial vitality – for improving the quality of our waterways. In fact, Delaware residents consistently rank water quality and pollution as their number-one environmental concern. Delawareans who have spent time boating, fishing or hunting along the Nanticoke, Choptank or other tributary of the Chesapeake know that these are special places, embedded in our character as a state.

The EPA has indicated that failure to make progress toward improving our water quality could result in increased direct regulation by the EPA over wastewater treatment plants, agricultural operations and municipal stormwater management. Or it could result in government withholding dollars when voluntary measures are not implemented, or in new revenue generation to help pay costs of compliance if voluntary efforts fail.

How can I learn more and comment on the plan?

More public workshops will be held this fall. You can read the entire Phase I plan and watch for new developments at

[http://www.dnrec.delaware.gov/wr/Information/Pages/Chesapeake\\_WIP.aspx](http://www.dnrec.delaware.gov/wr/Information/Pages/Chesapeake_WIP.aspx)



# In this together

## Delaware's role in cleaning up our Chesapeake waterways



# Delaware and its role in the Chesapeake cleanup

## What part of Delaware is in the Chesapeake watershed?

A watershed is an area that is drained by a particular body of water. Even though the Chesapeake Bay is not part of Delaware, its watershed is.

The Chesapeake Bay watershed covers about one third of Delaware's land area and includes half of Sussex County, a third of Kent County, and 10 percent of New Castle County. Some of the state's most prized waterways lie in the Chesapeake Bay Watershed: Broad and Marshyhope Creeks; and Nanticoke, Chester and Choptank Rivers.

## How is the watershed used today?

About half of the land area is agricultural. Only about 10 percent is considered developed. Forests and wetlands make up another 37 percent. The Bay and its related rivers, streams, creeks and wetlands are used for transportation, recreation, tourism and commercial fishing.

## What is polluting the Chesapeake?

Excess nitrogen and phosphorous and other pollutants find their way into the groundwater and the Bay's tributaries. Sources are agricultural and residential fertilizers, stormwater runoff that includes gas and oil from roads and parking lots, erosion and sediment, wastewater

treatment plants, septic systems, excess use of fertilizer, and manure from poultry and livestock. The nitrogen and phosphorous, especially, fuel the growth of algae blooms. Along with sediment, they block sunlight that underwater Bay, stream and pond grasses need to grow. Grasses provide food for waterfowl and shelter for blue crabs and juvenile fish. The pollutants also rob the water of oxygen that crabs, oysters and other bottom-dwelling species need to survive.



## How does Delaware contribute to Bay pollution?

Because it is flat and geographically close to the Bay, with widespread ditching that funnels polluted water very effectively, Delaware is actually a more potent polluter of the Chesapeake Bay and its tributaries – especially in the Nanticoke portion of the watershed – than other Chesapeake headwaters states. The good news is efforts we make to reduce nitrogen and phosphorous will also be more effective at cleaning up the Bay.

## What is Delaware required to do?

The six Chesapeake states, plus the District of Columbia, are required to develop a long-range plan, a Watershed Implementation Plan (WIP), for reducing the amounts of nitrogen, phosphorous and sediment that are discharged into the Bay and its tributaries. The US Environ-

mental Protection Agency developed a Total Maximum Daily Load (TMDL) for the basin, a pollution "diet" that limits those pollutants.

A Phase I WIP was completed and approved by the EPA in December 2010. The WIP, which was shaped by extensive public and stakeholder input, includes pollution reduction targets by geographic area and source – agriculture, urban stormwater, septic systems and wastewater treatment facilities. The plan shows how Delaware intends to meet the pollution limits by 2025 showing progress every two years. Sixty (60) percent of the water quality tools, practices and controls must be in place by 2017.

The State is beginning to develop a Phase II WIP that will include more pollution reduction strategies at the local level; detail how resources needed for implementation will be secured; and include more specific measures of progress. Delaware's Draft Phase II WIP is due to the EPA by December 1, 2011.

## How will Delaware meet its goals?

There are many Best Management Practices – in agriculture, stormwater management, development and wastewater treatment – that can put Delaware on the road to meeting water quality goals.

For example, Delaware farmers already have to manage the use of fertilizers, poultry litter and manure on their lands; other effective practices include the use

of cover crops, no-till agriculture, and green energy initiatives.

**Homeowners can test their soils** so they don't apply too much fertilizer, build a rain garden or a backyard habitat, plant native trees, get their septic systems pumped regularly, and make sure they aren't polluting the groundwater with oil, grease or other chemicals.

**Helpful stormwater management** practices include rain gardens, using natural swales instead of building concrete channels, reducing paved and other man-made surfaces, and other practices that mimic the natural features of the landscape rather than rely on built structures.

**Local governments** can adopt practices that protect stream corridors, cluster homes away from water bodies, and allow wetlands to do their natural job of filtering pollutants.

**Channelized streams** can be restored to their natural state. **Trees** can be planted.

In most towns within the watershed, **sewer plants** have enough capacity for growth without exceeding pollution limits.

It is much less expensive to meet our goals if we can preserve existing forests and wetlands than if they are removed and replaced with activities that load



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