

TMDLs are

- Extremely expensive to local governments
- Extremely difficult to achieve
- Carry threat of enforcement penalties



Polluted Streams

- Reduce property values and tax revenues
- Reduce viability of existing and new industrial employers
- Reduce availability of potable sources of public water supplies for future growth
- Increase costs of treatment for wastewater and drinking water supplies
- Increase regulatory mandates and costs to local governments



Sustainable Communities Require *Clean Water*

- “Go Green” also means “Go Clean”
- Clean water is good business
- Reduce the “water quality footprint” of our communities
 - Land use management and property operations
 - Land use planning decisions
 - Land development designs
 - New (and existing) stormwater management systems
 - Stream and riparian protection and restoration

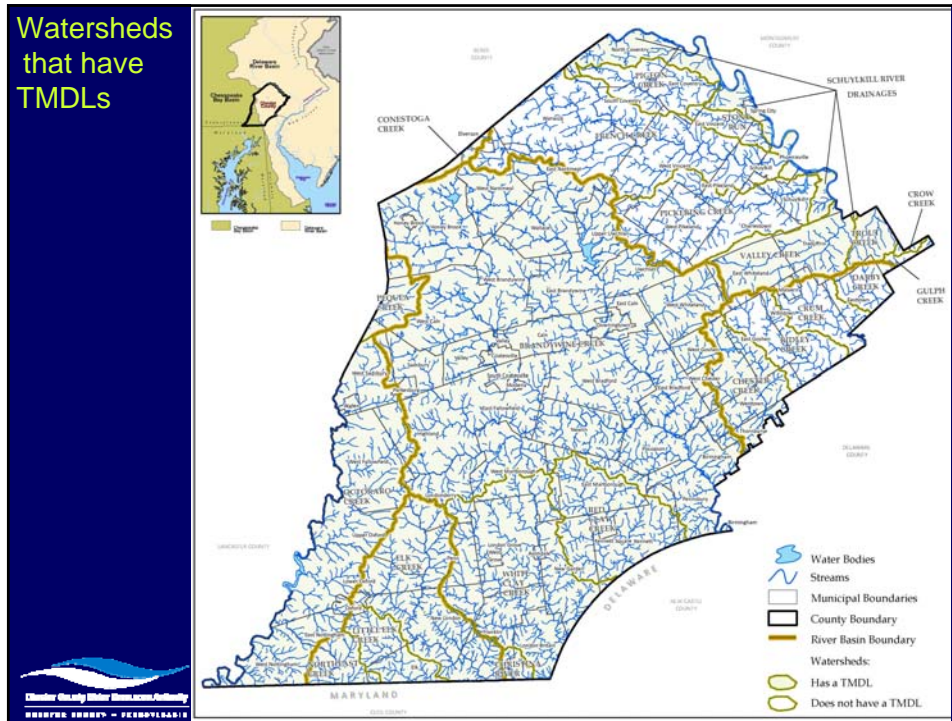


TMDL's – A Practitioner's Perspective

- 15 TMDLs are in effect or under development for watersheds of Chester County (see table)
- Cover all or portions of 14 major watersheds in Chester County (about 75% of the County's land area)
- No 2 TMDLs are alike
- Unique language



County-wide Municipal Stormwater Series: TMDLs 101
PART 2 – TMDLs in CHESTER COUNTY



What is a TMDL ?

- "*Watershed Science Bulletin*" (Center for Watershed Protection) – page 7
- Practical definition
- Diagram of TMDL approach
- 3 components of a TMDL
- "Watershed" TMDLs
- Local governments responsible for implementation
- Water Quality Trading



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Overview: The ABCs of TMDLs

A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards.
(US Environmental Protection Agency n.d.[6])

TMDL Basics

Section 303(d) of the Clean Water Act (CWA) requires each state, territory, and authorized tribe to develop water quality standards for all water bodies under its jurisdiction. This process includes the identification of designated uses (e.g., fishing, swimming, or water supply) for each water body, the definition of numeric or narrative water quality criteria that correspond to these designated uses, and the establishment of provisions to maintain and protect the uses. These jurisdictions must then monitor their waters to identify water bodies or water body segments that are impaired, meaning that they are too polluted or otherwise degraded to meet the water quality standards. The council of each impairment must also be included in the listing. The CWA requires that these jurisdictions develop total maximum daily loads (TMDLs) for their impaired waters (Figure 1). A TMDL, often described as a pollutant budget, is "a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards," according to the US Environmental Protection Agency (USEPA n.d.[6]), who administers the TMDL program.

A TMDL, which also describes how pollutant loads coming from various sources must be reduced to meet the water quality standards, is usually based on modeling, monitoring data, or a combination of both. Each TMDL includes three basic components:

1. Wasteload allocation (wla) from point sources
2. Load allocation (LA) from nonpoint sources and natural background conditions
3. A margin of safety (MOS) to account for uncertainties in the various aspects of TMDL development

Typically, a TMDL is developed for a single impaired stream segment. USEPA recently published guidance for the development of watershed TMDLs such that multiple impaired segments within the same watershed can be addressed with a single TMDL. As noted in USEPA (2009, 2), "watershed TMDLs can help states to reduce their per-TMDL costs and address more pollutant/waterbody combinations with the given resources while recognizing a number of environmental and programmatic benefits."

TMDL implementation plans are not specifically required under the CWA, although they are often developed by states as part of the TMDL or as a separate document. TMDL implementation plans describe more specifically the actions needed to meet the required point source and nonpoint source reductions. These actions include a wide range of best management practices as well as the enforcement of more stringent permit requirements for industrial and wastewater discharges, which can be met using advanced treatment technologies. Typically, implementation falls to the counties, cities, and other municipalities located within the TMDL, who are listed since these entities are primarily responsible for local land use regulation and implementation of National Pollutant Discharge Elimination System (NPDES) permits.

USEPA encourages the use of water quality trading for non-point sources where it can help achieve CWA goals. In water quality trading, one entity compensates another entity to reduce a defined amount of pollution. Such trading costs less than the implementation of pollution control measures by the original entity itself and provides the same or greater

Figure 1. Water quality-based approach of the CWA.
(Source: USEPA n.d.[6]) LA, load allocation; MOS, margin of safety; NPDES, National Pollutant Discharge Elimination System; WLA, wasteload allocation.

MALL 2010 7

From Watershed Science Bulletin, Fall 2010

Figure 1. Water quality-based approach of the CWA.
(Source: USEPA n.d.[6]) LA, load allocation; MOS, margin of safety; NPDES, National Pollutant Discharge Elimination System; WLA, wasteload allocation.

From Watershed Science Bulletin, Fall 2010

TMDL Terminology...

"Integrated List of All Waters"

- Unassessed
- Unimpaired
- Impaired
 - No TMDL Required
 - TMDL Required



TMDL Terminology ...

- Re-assessment
- PADEP must re-assess and revise List every 2 years and may result in -
 - No change
 - De-Listing
 - Listing of new impairments - need for new TMDLs



To avoid additional TMDLs,
it is essential to
protect streams
from additional stream impairments
and
reduce existing impairments



TMDL Terminology...

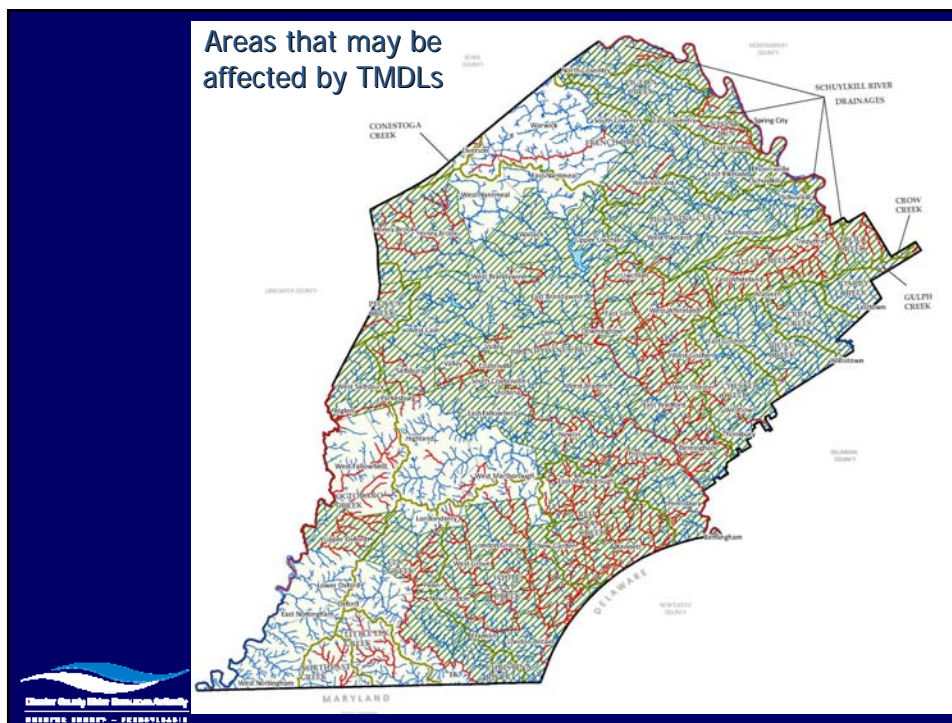
- Categories of TMDLs
- Point Source versus Nonpoint Source
- High Flow vs Low Flow TMDLs
- Load Allocation (LA)
- **Waste Load Allocation (WLA) ******
- Baseline WLA vs TMDL WLA
- Required pollution reduction
- **Municipal WLAs and WLA reduction requirements ("MS4 WLAs") ******
- "Parsing out" of source management areas



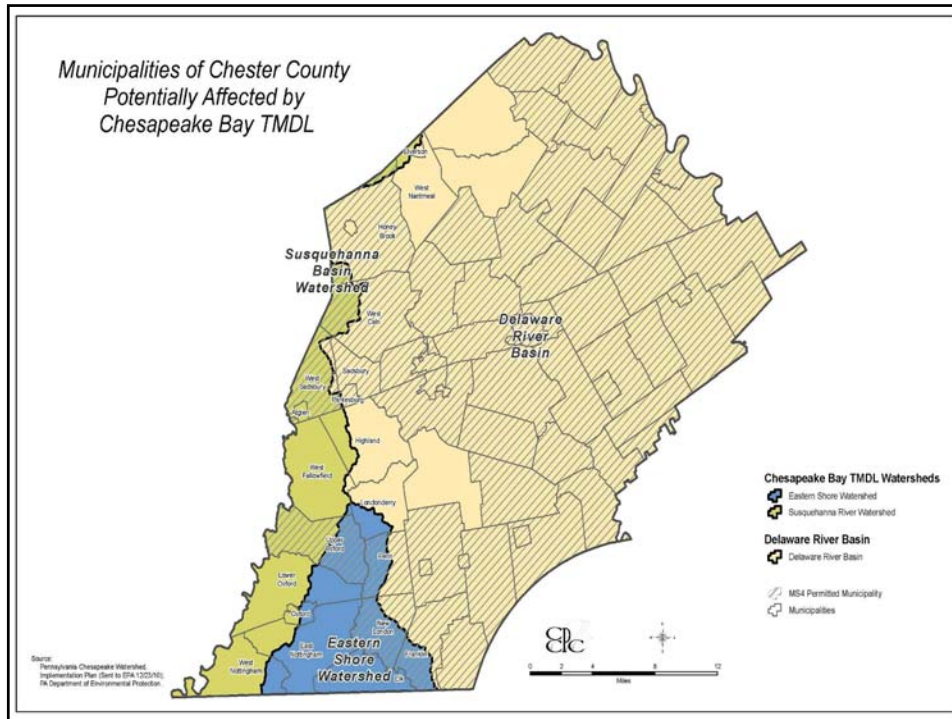
TMDL Terminology ...

Key phrases to understand –

- ... do discharges from your municipality **"cause or contribute to"** the impairment addressed by the TMDL?
- ... implementation must be **"consistent with the assumptions and requirements of the TMDL..."**



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Chesapeake Bay TMDL

- Portions of 20 Chester County municipalities lie within the Bay watershed
- 142 sq. mi. of Chester County within 64,000 sq. mi. Bay watershed
- Nitrogen, phosphorus, sediment
- June 1, 2011 – loads allocated to County level
- 2017 – Interim load reduction targets to be achieved
- 2025 – Final load reduction targets to be achieved

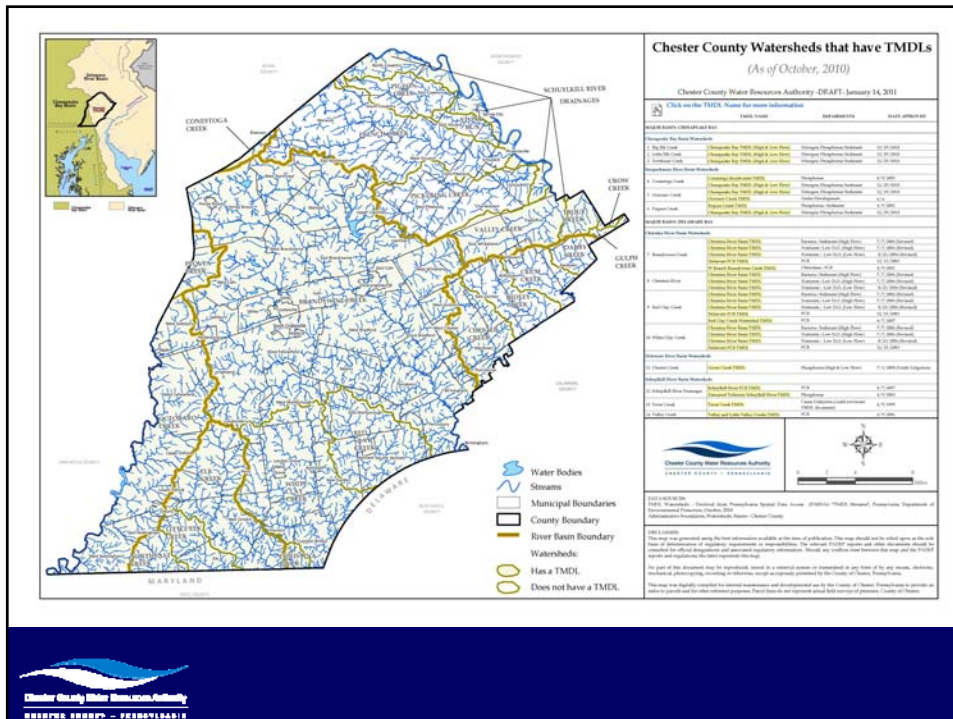


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Chesapeake Bay TMDL

Focus of PA-WIP Implementation will be on:

- Stormwater/Urban
- Agriculture
- Wastewater (significant dischargers, not onsite systems)
- Pollutant Credit Trading



Getting Ready for New MS4 PAG-13

- Inventory streams that are impaired
- Inventory streams that are not listed as impaired
- Identify what impairments exist in
 - streams within your municipality
 - streams downstream of your streams
- Identify any TMDLs in effect in watersheds that your municipality drains to



Getting Ready for New MS4 PAG-13

- Review each TMDL for
 - Understand what impairments addressed by the TMDL
 - Review the list(s) of WLA assignments
 - Is there a list of "municipal WLAs" (or "MS4 WLAs")?
 - If so is your municipality on the list?
- Some TMDLs MAY NOT NEED TO BE ADDRESSED in the new MS4 applications – wait for PADEP instructions
- Some municipalities MAY NOT NEED TO ADDRESS TMDLs in the new MS4 applications – wait for PADEP instructions



Agriculture and TMDLs



Resources Available at CCWRA Website

- "What Is A Watershed" - brochure
- "Watersheds of Chester County" - map
- "Impaired Streams of Chester County" - map
- "Chester County Impaired Waters Tool" – municipal/watershed inventory tool
- "Chester County Impaired Waters Map Series"
- "Impaired Streams of Chester County - GIS Coverage" with value added attributes and information
- "TMDLs of Chester County" – report locator tool
- "EPA 2005 Urbanized Area" – GIS coverage
- "TMDL Terminology – A Practitioner's Translation"
- Links to (among others)
 - Center for Watershed Protection,
 - 2010 Integrated List of All Waters,
 - all TMDLs affecting Chester County

available at www.chesco.org/water (by 1/31/11)



Resources Available at CCWRA Website

- “Chester County TMDLs” – two tables
- “Watersheds of Chester County that have TMDLs”
 - map (pdf)
 - Hotlinked TMDL report locator tool
- “TMDL Terminology – A Practitioner’s Translation”
- Links to (among others)
 - Center for Watershed Protection,
 - 2010 Integrated List of All Waters,
 - all TMDL Reports affecting Chester County
- “EPA 2005 Urbanized Area” – GIS coverage for download

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Your thoughts and questions ...

- County-wide Municipal Stormwater Series
 - Next workshop ...
- Other topics for future workshops ...?
- Please contact us with any questions ...



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This presentation began with Part 1: Impaired Streams of Chester County. Part 1 is available on the Chester County Water Resources Authority website.