Wastewater Projection for 2025

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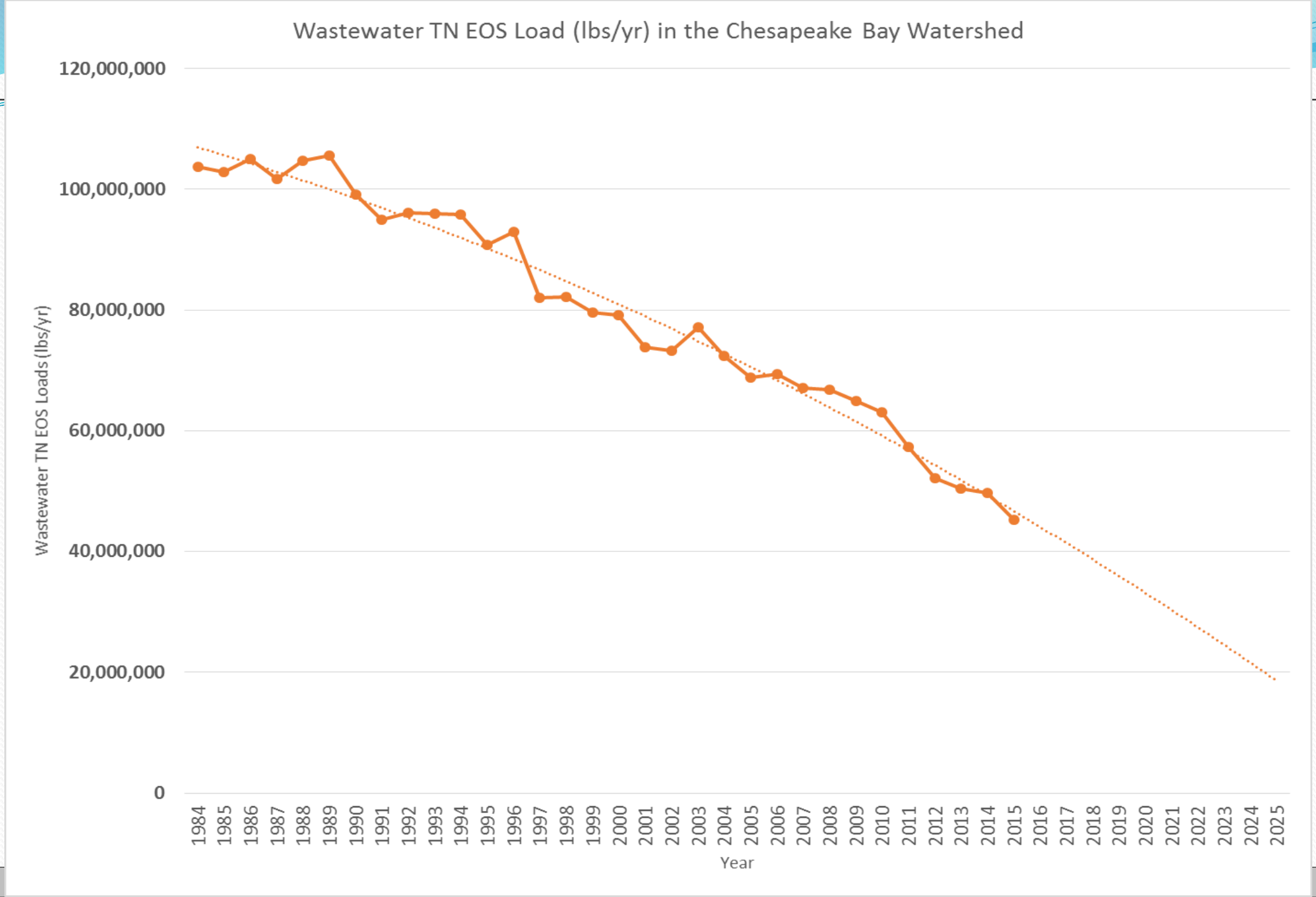
Purpose:

This projection is to forecast wastewater loads to reflect 2025 expected conditions. This forecast will be used by the watershed jurisdictions in their baseline 2025 conditions for development of the Phase III WIPs.

How do the current loading trends look like?

Current loading charts on next two slides show the treatment upgrade dominated nutrient reduction trends.


Wastewater TN EOS Load (lbs/yr) in the Chesapeake Bay Watershed
120,000,000
100,000,000
80,000,000
60,000,000
40,000,000
20,000,000
0
Wastewater TN EOS Loads (lbs/yr)
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
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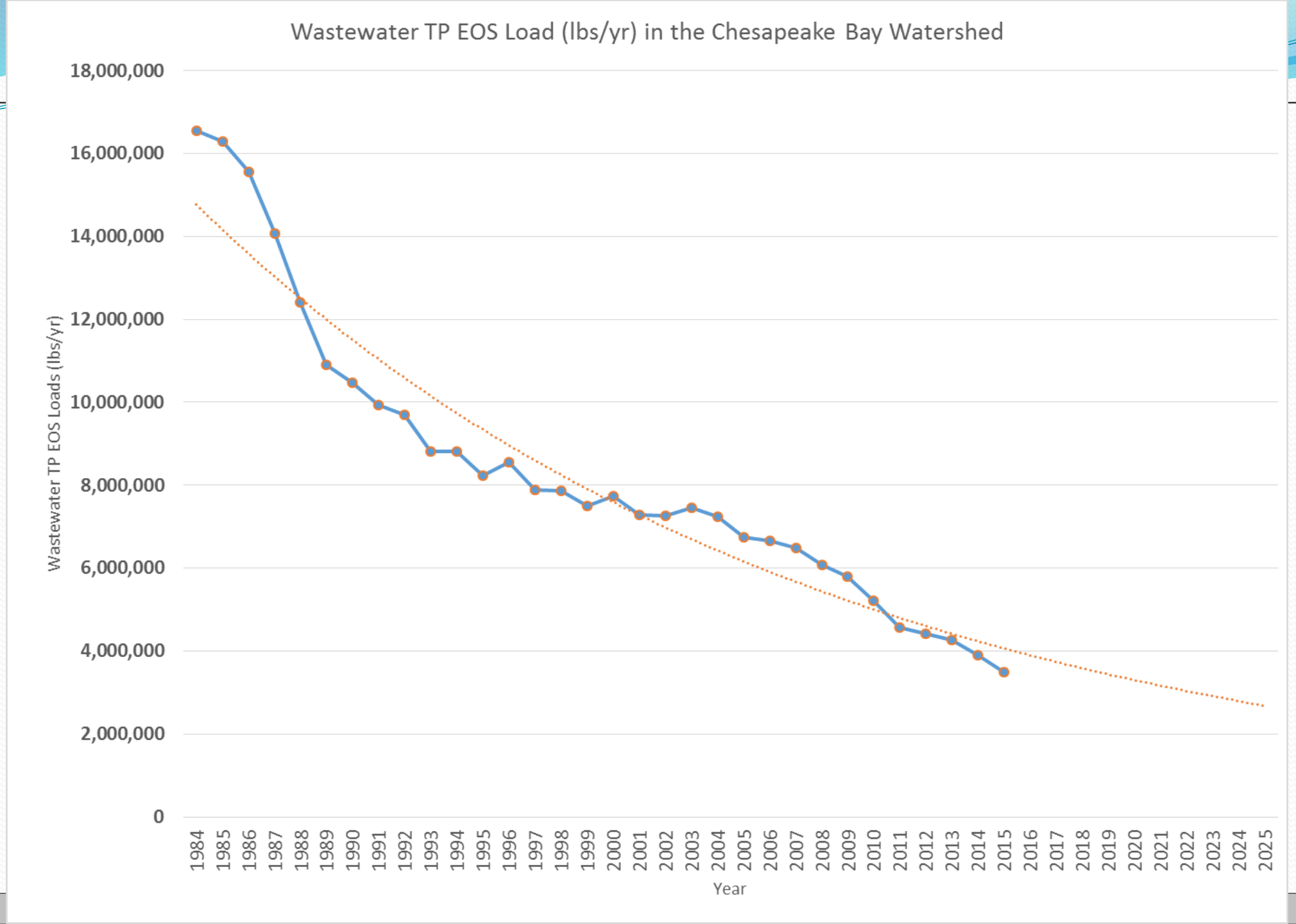
2024
2025
Year


Wastewater TP EOS Load (lbs/yr) in the Chesapeake Bay Watershed
Wastewater TP EOS Loads (lbs/yr)
18,000,000
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
1984
1985
1986
1987
1988
1989
1990
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2025
Year

Future trend consideration:

When most of the TMDL permit limits have become effective in recent years, we expect that most of the significant facilities have completed their upgrades

the down trends of wastewater loads will soon stop

the population growth impact will take over as the major factor on the future projection.

Projection Assumptions

Municipal Plant Base Conditions:

1) Baseline Year – the most recent progress year that captures the most recent treatment upgrade (roughly).

2) Base Treatment level – the annual average concentration is assumed to stay at the baseline year level if there is no future upgrade.

3) Baseline flow- the average flow of recent three years.

Industrial Plant Base Conditions: the average loads of recent three years

Projection Assumptions

Variables for Future Conditions:

1) Population Changes will result in the flow changes with the same ratio for municipal facilities and have no impact on industrial plants.

2) Future Upgrade – the future treatment performance / effluent concentrations will be determined by the upgrade level.

3) Other Improvements – many continued improvement in collection system, such fixing I&I and CSO separation, will improve the WWTP performance.

Project Scenarios:

1) Forecasting with the only impact from population changes

Municipal plants: baseline concentration with adjusted flow based on the population changes within the county where the facility is located.

Industrial Plants: baseline

2) Projecting with all available future variables.

Projecting with all available future variables

Municipal plants

1) Concentration:
   The projected concentrations will be the baseline concentrations or base on the upgraded treatment levels if there are scheduled upgrades in the future.

2) Flow: adjusted from the baseline flow based on the population changes within the county where the facility is located.

   For expanding plants, their future flows will be their new design flows because we do not have the baselines for expanding plants.

3) New Plants: The permit limits and design flows will be used for new facilities planned to be built.

Projecting with all available future variables

Industrial Plants

1) We will use baseline treatment level with no changes into the future unless there are scheduled upgrades.
2) For scheduled future upgrades, the upgraded levels will be used.
3) The permit limits will be used for new industrial plants planned to be built.

The WIP loads are the projection ceilings