Industrial Facilities

How is the retrofit requirement translated from impervious surface retrofits to nitrogen, phosphorus, and sediment reductions?

Consistent with the November 2021 Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated guidance, impervious acre equivalents can be translated into edge-of-stream (EoS) nitrogen and phosphorus loads based on the following equations:

- 1 Impervious Acre Equivalent = Equivalent Nitrogen Reduction + Equivalent Phosphorus Reduction + Equivalent Sediment Reduction
- Equivalent Nitrogen Reduction = # of Required Acres x 18.08 lbs of Nitrogen per year
- Equivalent Phosphorus Reduction = # of Required Acres x 2.23 lbs of Phosphorus per year
- Equivalent Sediment Reduction = # of Required Acres x 8,046 lbs of Sediment per year

To convert from EoS reduction rate into a required credit, an edge-of-tide (EoT) factor must be applied based on the location of the facility. EoT factors can be found on the Maryland Water Quality Trading Program EoT Factors ArcGIS webpage. The appropriate EoT factor for your facility can be found by inputting your facility location in the search bar above the map and then clocking on the location of your facility.

Example of Calculating Required Credit*:

Impervious area to be offset is 2.65 Impervious Acres, EoT factor for all constituents = 1

2.65 x [(18.08 lbs N/yr x 1 EoT) = 47.9 = **48 TN Credits** to be acquired
2.65 x [(2.23 lbs P/yr x 1 EoT) = 5.9 = **6 TP Credits** to be acquired
2.65 x [(8046 lbs Sediment/yr x 1 EoT) = 21,321.9 = **21,322 Sediment Credits** to be acquired

*****It is important to note that after you complete your calculation for required credits that you need to round up fractions to the next whole number. This is due to the regulations defining 1 credit as 1 lb of each constituent, which does not allow for trading of partial credits.

Can I purchase credits from any region?

Credits must be purchased from the Chesapeake Bay Segmentshed where your facility is located. For assistance in determining your segmentshed, you should consult Maryland's interactive map of Chesapeake Bay Segmentsheds.

How do I find trading partners?

Wastewater treatment plants that are eligible and have set up their permit for trading can be found on our website under “Registry and Market.” There is a searchable link under “State Number” use 12SW or 12 SR.

Where can I find available credits?

Credits available will be posted on Maryland's registry. (A link will be provided here once credits have been registered.) If no credit is available in your watershed, please contact the trading administrator at mde.wqtrading@maryland.gov. A request for credit can be created and posted on the registry and potential credit generators may submit proposals for generating credit.

How do I generate credit?

For an industrial discharger, credit can be generated either via the discharge permit, by reducing loads of nutrients and/or sediment in the effluent, or via the installation of stormwater practices (or alternative practices) on site. Stormwater and alternative practices are those that you would use to meet your restoration requirement. Instructions on generating credits are available on the Department's Generating Water Quality Credits webpage.

Partial Year Credit

- If a practice is implemented that wasn't required or goes above and beyond what is required by their permit in September, calculations would be from October through December or ¼ of a year:
  - 0.25 x 18.08 = 4.52 lbs N/yr
  - 0.25 x 2.23 = 0.56 lbs P/yr
  - 0.25 x 8,046 = 2,011.5 lbs Sediment/ yr
- This calculation would also apply for needed credits after a practice was implemented.

Example from above with ¼ year calculations:

Impervious area to be offset is 2.65 Impervious Acres, EoT factor for all constituents = 1

2.65 x [(*4.52 lbs N/yr* x 1 EoT) = 11.98 =**12 TN Credits to be acquired**
2.65 x [(*0.56 lbs P/yr* x 1 EoT) = 1.48 =**2 TP Credits to be acquired**
2.65 x [(*2,011.5 lbs Sediment/ yr* x 1 EoT) = 5330.48 =**5,331 Sediment Credits to be acquired**

- We would also allow calculation of needed credits based on when they implement the practice. For example if they completed a required practice (in Sept 2023) after the date required in their permit (Dec 2024), they would require 9 months of credit (3/4 a year or 0.75x7.69 for TN).

Additional Information and Related Links

- Wastewater Permits Program
- General Permit for Discharges of Stormwater Associated With Industrial Activity
- MDE Home