

# Technical Memorandum for Corsica River TMDL

## Significant Nutrient Point Sources in the Corsica River Watershed

EPA requires that TMDL allocations account for all significant sources. This technical memorandum identifies, in detail, the significant surface water discharges of nutrients and biological oxygen demand (BOD) substances to the system in question. The two nutrients, total nitrogen (TN) and total phosphorus (TP), are addressed by the TMDLs for Corsica River. Modeling input information is provided for a significant point source as discrete discharge. These are conceptual values that are within the TMDL thresholds for each nutrient. They represent viable individual allocations to the point source. Maryland expressly reserves the right to allocate the TMDLs among different sources in any manner that is reasonably calculated to achieve water quality standards.

TMDLs are being established in the Corsica River watershed for both low flow and average annual conditions. Tables 1A and Table 1B provide modeling information for low flow TMDLs for TN and TP respectively. These are supplemented by Table 1C, which provides additional modeling information attributed to the point source for the low flow TMDL calculation.

**Table 1A**  
**Loads Attributed to Significant Point Sources for Low Flow Nitrogen TMDL<sup>a</sup>**

<b>Source Name</b>	<b>Permit Number</b>	<b>TN Load <i>lb/month</i></b>	<b>Flow <i>mgd</i></b>	<b>Concentration <i>mg/l</i></b>
Centreville WWTP	MD0020834	625	0.375	8.0
Future Allocation		126	--	--

- a. This case corresponds to model scenario 3.

**Table 1B**  
**Loads Attributed to Significant Point Sources for Low Flow Phosphorus TMDL<sup>a</sup>**

<b>Source Name</b>	<b>Permit Number</b>	<b>TP Load <i>lb/month</i></b>	<b>Flow <i>mgd</i></b>	<b>Concentration <i>mg/l</i></b>
Centreville WWTP	MD0020834	117	0.375	1.5
Future Allocation		24	--	--

- a. This case corresponds to model scenario 3.

**Table 1C**

**Additional Assumptions for Low Flow TMDL<sup>a</sup>**

<b>Centreville WWTP</b>		
<b>CBOD</b>	<i>lbs/d</i>	46.9
<b>DO</b>	<i>mg/l</i>	5.0
<b>Chlorophyll <i>a</i></b>	<i>lbs/d</i>	0
<b>NH<sub>3</sub></b>	<i>lbs/d</i>	3.2
<b>ON</b>	<i>lbs/d</i>	3.2
<b>NO<sub>2</sub></b>	<i>lbs/d</i>	18.6
<b>PO<sub>4</sub></b>	<i>lbs/d</i>	3.1
<b>OP</b>	<i>lbs/d</i>	1.6
<b>Flow</b>	<i>mgd</i>	0.375
<b>Total Nitrogen</b>	<i>lbs/d</i>	25.0
<b>Total Phosphorus</b>	<i>lbs/d</i>	4.7

- a. This case corresponds to model scenario 3, 4, and 5
- b. 2.2 kg = 1 lb

The loadings, concentrations, and flows represented in the above tables are for illustrative purposes only. Actual effluent limits and related permit conditions will be established at the time of permit issuance or renewal and will be based upon conditions present at that time, as reflected in populations projections, infrastructure needs as defined in County Comprehensive Water and Sewer Plans, and appropriate concentrations and loadings needed to address impairments of the water quality limited segments identified by this TMDL and the applicable 303(d) list. Point source loadings, flows, and concentrations placed in permits will be based upon the information listed above as well as that provided during the permit adjudication process.

Tables 2A and Table 2B provide modeling information for average annual TMDLs for TN and TP respectively. These are supplemented by Table 2C, which provides additional modeling information attributed to a point source for the average annual TMDL calculation.

**Table 2A**  
**Loads Attributed to Significant Point Sources for Average Annual Nitrogen TMDL<sup>a</sup>**

<b>Source Name</b>	<b>Permit Number</b>	<b>TN Load <i>lb/year</i></b>	<b>Flow <i>mgd</i></b>	<b>Concentration <i>mg/l</i></b>
Centreville WWTP	MD0020834	7,598	0.375	8.0
Future Allocation		1,534	--	--

- a. This case corresponds to model scenario 3,4, and 5.

**Table 2B**  
**Loads Attributed to Significant Point Source for Average Annual Phosphorus TMDL<sup>a</sup>**

<b>Source Name</b>	<b>Permit Number</b>	<b>TP Load <i>lb/year</i></b>	<b>Flow <i>mgd</i></b>	<b>Concentration <i>mg/l</i></b>
Centreville WWTP	MD0020834	1,424	0.375	1.5
Future Allocation		288	--	--

a. This case corresponds to model scenario 3,4, and 5.

**Table 2C**  
**Additional Assumptions for Average Annual TMDL<sup>a</sup>**

<b>Centreville WWTP</b>		
<b>CBOD</b>	<i>lbs/d</i>	46.9
<b>DO</b>	<i>mg/l</i>	5.0
<b>Chlorophyll <i>a</i></b>	<i>lbs/d</i>	0
<b>NH<sub>3</sub></b>	<i>lbs/d</i>	3.2
<b>ON</b>	<i>lbs/d</i>	3.2
<b>NO<sub>2</sub></b>	<i>lbs/d</i>	18.6
<b>PO<sub>4</sub></b>	<i>lbs/d</i>	3.1
<b>OP</b>	<i>lbs/d</i>	1.6
<b>Flow</b>	<i>mgd</i>	0.375
<b>Total Nitrogen</b>	<i>lbs/d</i>	25.0
<b>Total Phosphorus</b>	<i>lbs/d</i>	4.7

a. This case corresponds to model scenario 3,4 and 5.

b. 1 kg = 2.2 lbs

The loadings, concentrations, and flows represented in the above tables are for illustrative purposes only. Actual effluent limits and related permit conditions will be established at the time of permit issuance or renewal and will be based upon conditions present at that time, as reflected in populations projections, infrastructure needs as defined in County Comprehensive Water and Sewer Plans, and appropriate concentrations and loadings needed to address impairments of the water quality limited segments identified by this TMDL and the applicable 303(d) list. Point source loadings, flows, and concentrations placed in permits will be based upon the information listed above as well as that provided during the public participation process.