


PROCEDURE NUMBER: <i>ENV 1-14</i>	PROCEDURE NAME: <i>Turbidity Mixing Zones</i>
ADOPTION DATE: <i>July 7, 2023</i>	LAST UPDATED: <i>July 7, 2023</i>
PROCEDURE APPROVED BY: <i>Chairperson, Policy & Records Workgroup</i>	SIGNATURE: 
RESPONSIBLE OFFICE: <i>Bureau of Environment</i>	CONTACT PERSON: <i>Administrator, Bureau of Environment</i>
RELATED POLICY: <u>ENV 1 Environmental Policy</u>	RELATED FORMS: <u>Turbidity Mixing Zone Designation Template</u>

PURPOSE

The purpose of this procedure is to provide direction on the design, implementation, and monitoring of Turbidity Mixing Zones (*mixing zones*) necessary to ensure water quality standards for turbidity are met during construction of NHDOT projects and activities.

SCOPE

This procedure shall apply to all projects funded, approved, sponsored, or led by NHDOT, when NHDOT is responsible for submitting a NH Department of Environmental Services (NHDES) Standard Dredge and Fill Wetlands Permit Application (*Wetlands Permit Application*). Note, however, that not all projects require a mixing zone. Mixing zones must be designated by NHDES prior to their use. In unusual circumstances, in coordination with NHDES, use of the “Template Mixing Zone” included herein may not be appropriate. In these instances, individual mixing zones shall be coordinated with NHDES.

GENERAL PROVISIONS

- [Env-Wt 307.03 Protection of Water Quality Required](#)
- [Env-Wq 1703.11 Turbidity](#)
- [PART Env-Wq 1707 Mixing Zones](#)
- [2022 NPDES Construction General Permit, EPA](#)

DEFINITIONS

Definitions related to this procedure may be viewed on the SOS [Approved Definitions](#) page.

Lentic Waterbody – A lacustrine or still water waterbody, including a ditch, seep, pond, seasonal pool, marsh, or lake.

Mixing Zone – Pursuant to Env-Wq 1702.26, a defined area or volume of the surface water surrounding or adjacent to a wastewater discharge where the surface water, as a result of the discharge, might not meet all applicable water quality standards.

Turbidity – A condition of water quality characterized by the presence of suspended solids and/or organic material.

RESPONSIBILITY

1. Environmental Manager
 - a. Provide documentation necessary to the Water Quality Program Manager to develop a project-specific mixing zone, including:
 - i. Project description,
 - ii. Location map,
 - iii. Watercourse data (width, depth, threatened/endangered species, sensitive receptors/resources, etc.).
 - b. Promote discussion of mixing zones at Natural Resource Agency Coordination Meetings.
2. Water Quality Program Manager
 - a. Evaluate project-specific needs for a mixing zone.
 - b. Prepare mixing zones.
 - c. Promote discussion of mixing zones at Natural Resource Agency Coordination Meetings.
 - d. Ensure that the “Template Mixing Zone” is kept current as rules/regulations and/or approaches to turbidity control change.
3. Wetlands Program Manager
 - a. Ensure that mixing zone requests are submitted to NHDES with Wetlands Permit Applications, when needed.
 - b. Promote discussion of mixing zones at Natural Resource Agency Coordination Meetings.
4. Design Lead
 - a. Ensure that NHDOT projects are designed to include mixing zones, when needed.
 - b. Verify that consultant led NHDOT project designs incorporate mixing zones, when needed.
5. Environmental Coordinator – Coordinate among construction and/or maintenance staff, Water Quality Program Manager, the Contractor (if applicable), and regulators as needed, to ensure construction/maintenance activities comply with designated mixing zones.
6. Construction Lead/Maintenance Lead/Contract Administrator – Ensure that NHDOT projects/activities are constructed in accordance with contract documents, including mixing zones.
7. BOE Operations Management Section
 - a. Assist the Division of Operations with understanding the applicability of this procedure, as well as promoting compliance.

- b. Coordinate among the designers, Water Quality Program, and Wetlands Program to verify the requirements of this procedure are met.
8. BOE Administrator
 - a. Approve environmental documentation identifying project impacts/compliance, including any wetlands and/or water quality requirements.
 - b. Ensure that this procedure is followed for NHDOT-sponsored projects.
 - c. Resolve disputes and questions relating to this procedure.

PROCEDURES

1. The project team (Project Manager, Design/Maintenance Lead, Environmental Manager, Water Quality Program Manager and Wetlands Program Manager, District Construction Engineer, etc.) collectively determine the need for a mixing zone for a project.
2. As necessary, the mixing zone will be discussed at a Natural Resource Agency Coordination Meeting.
3. The Water Quality Program Manager will utilize the "Template Mixing Zone" and draft a project-specific mixing zone and send it to the project team for review. Considerations on the mixing zone include, but are not limited to:
 - a. Watercourse dimensions (depth, width, etc.);
 - b. Duration of use;
 - c. Accessibility of monitoring locations;
 - d. Sensitive downstream resources or receptors;
 - e. Threatened/endangered species;
 - f. No use of a lentic waterbody for this procedure, unless specifically discussed and allowed by NHDES in unusual circumstances; and
 - g. Information necessary to demonstrate that the mixing zone meets the criteria of New Hampshire Water Quality standards Env-Wq 1707.02.
4. If needed (for example because there are threatened/endangered species in the waterbody, waters subject to the ebb and flow of the tide, or lack of nearby safe monitoring points), the Water Quality Program Manager, in coordination with the Wetland Program Manager, will discuss the mixing zone with the NHDES Watershed Management Bureau prior to submittal.
5. In unusual circumstances (some examples outlined in #4 above) coordination with NHDES may require preparation of a mixing zone that does not utilize the "Template Mixing Zone."
6. After review, the Water Quality Program Manager will finalize the mixing zone and provide it to the Wetlands Program Manager and Environmental Manager for submittal with the Wetlands Permit Application.
7. The Wetlands Program Manager will include a statement in the transmittal cover letter to the NHDES Wetlands Bureau that the permit application includes a request for the designation of a mixing zone. A copy of the application and mixing zone designation request will also be sent to the NHDES Watershed Management Bureau.

8. The NHDES Watershed Management Bureau will designate the mixing zone for use in accordance with the Surface Water Quality Standards Env-Wt1707.01(b) and determine that the mixing zone meets the criteria of the Surface Water Quality Standards Env-Wq 1707.02. Once the designation and determination are made for a mixing zone, NHDES will notify NHDOT in writing. NHDES may request additional information to ensure that the mixing zone will meet the criteria of the water quality standards.
9. The Wetlands Program Manager will ensure that the Wetlands Permit is provided to the project team for inclusion in the contract documents, as applicable.
10. The Design Lead and Water Quality Program Manager will ensure that the mixing zone is included in contract documents (for contracted projects).
11. Once approved for construction, the Environmental Coordinator, in coordination with the Contract Administrator, will ensure that the mixing zone is followed by the Contractor (for contracted projects).
12. If, during construction, the mixing zone requires modification, the Environmental Coordinator will work directly with the Water Quality Program Manager to modify the mixing zone.
13. The Environmental Coordinator will submit the revised mixing zone to the NHDES Watershed Management Bureau for designation and determination that the mixing zone meets the criteria of Env-Wq 1707.02.

Alternative Procedure when the need for a Mixing Zone is decided during construction:

1. The Environmental Coordinator, in the event of extenuating circumstances, will notify the Water Quality Program Manager that there is a need for a mixing zone based on changing construction requirements, or environmental conditions.
2. The Water Quality Program Manager will utilize the "Template Mixing Zone" (unless unusual circumstances are present (some examples outlined in #4 above)) and draft a project-specific mixing zone and provide it to the Environmental Coordinator to coordinate a review by Construction staff, as needed.
3. After review, and any modifications needed are made by the Water Quality Program Manager, the Environmental Coordinator will provide the mixing zone directly to the NHDES Watershed Management Bureau for designation and determination that the mixing zone meets the criteria of Env-Wq 1707.02.

TRAINING

All NHDOT staff shall be made aware of this procedure. The procedure will also be made available to external organizations undertaking permitting activities on behalf of NHDOT.

DISCIPLINE

Disciplinary action related to this procedure can be found in the referenced policy.

AMENDMENT RECORD

This procedure shall be reviewed every two years to ensure its continuing relevance and accuracy. The record of amendments is recorded below.

Date	Comments	Name	Authority
7/7/2023	Original Procedure Adopted	Andre Briere	Deputy Commissioner