Purpose

This form is designed to help applicants assemble a complete Tier II Review report. This form specifically addresses calculating Tier II resource impacts and evaluating alternatives that minimize water quality degradation from unavoidable impacts to Tier II watersheds and streams. This analysis is applicable to all areas of the **whole and complete project** within a Tier II watershed.

The Department will use this information to determine whether the applicant evaluated all reasonable alternatives to minimize water quality degradation. MDE may provide additional comments, conditions, or requirements, during the review.

Maryland Department of the Environment

Antidegradation Review Report Form

Alternatives Analysis – Minimization Alternatives

Fill in all that apply:

1. **Project Name:** _____
2. **Nontidal Wetlands & Waterways Construction Tracking Number:** _____
3. **MD General Permit Number:** _____

Applicant Signature: _____ **Date Complete:** _____

Background

Code of Maryland Regulations (COMAR) 26.08.02.04-2 (G(3)) states that "If the analysis in §G(1) of this regulation shows that the alternatives are not cost effective and feasible, the applicant shall provide the Department with plans to configure or structure the discharge or other regulated activities that may cause a potential water quality impact so as to minimize the use of the assimilative capacity of the water body. The assimilative capacity of the water body is the difference between the water quality at the time the water body was designated as Tier II, the baseline, and the water quality criterion".

To demonstrate that appropriate minimization practices have been considered and implemented, applicants must identify any minimization practices used when developing the project, calculate major Tier II resource impacts, consider alternatives for impacts, and adequately justify unavoidable impacts. Further water quality impact minimization such as mitigation or out-of-kind offsets may be required.

Instructions and Notes

1. Review all the information in this document carefully. Prepare a report to address all of the analysis required by this document. Submit all Tier II analysis and documentation together.

2. Do not leave any response blank. Please mark "N/A" for any questions or sections that are not applicable until you reach the end of the document.

3. Provide sufficient supporting documentation for narratives.

4. The level of analysis necessary, and amount of documentation that may be needed to determine if impacts have been adequately addressed, is dependent upon project size, scope, and scale of relative impacts to Tier II resources. Please develop responses accordingly.

5. Reports/responses shall be submitted in electronic format, as well as paper. Full plans are not required unless requested over the course of the review.

6. Direct any questions regarding this form to Angel Valdez at angel.valdez@maryland.gov.

Minimization Alternative Analysis Final Documentation Checklist

☐ Signature & Date MDE Tier II Alternatives Analysis – Minimization Alternative form, pg. 1 & 8

☐ Resource Impact Analysis

- ☐ Tier II Stream Buffer Impacts
  - Impact Calculation
  - Impact Minimization
  - Stream Buffer Exhibit
- ☐ Forest Cover Impacts
  - Impact Calculation
  - Impact Minimization
  - Forest Cover Exhibit
- ☐ Impervious Cover
  - Impact Calculation
  - Impact Minimization
  - Impervious Cover Exhibit

☐ Enhanced/Redundant Erosion and Sediment Control Plan Practices

Tier II Resource Impacts

Sufficient riparian buffers, ample watershed forest cover, and lower levels of impervious cover are essential to maintaining high quality waters. This project may permanently reduce riparian buffers and forest cover or increase impervious cover within Tier II watersheds leading to a decrease in water quality. Depending upon project specific impacts, MDE may require monitoring, additional BMPs, expanded buffers in Table 1, and other studies prior to approval. This analysis is applicable to all areas of the **whole and complete project** within a Tier II watershed.

MDE will use the following information to determine impacts to Tier II watershed resources.

A. Tier II Stream Buffers
1. Instructions: **a. If no <u>vegetated</u> stream buffer impacts are proposed (within 100' of stream), mark this section N/A and proceed to Section B, Forest Cover.** **b. <u>Complete the analysis for each Tier II watershed affected on a separate sheet</u>** **c. Insert the Tier II watershed name at the top of each box.** **d. "Impacted" stream segments are those disrupted by road crossings, other infrastructure, construction (ex. sewer lines), or otherwise buried** **e. Calculate buffer averages for A(3) below on a stream segment-by-segment basis.**

A. Tier II Stream Buffers - Tier II Watershed: _____		
2. Calculation of Potential Impacts to State Regulated Waters – Linear Feet	**Linear Feet +/-**	
	Left Bank	**Right Bank**
a. Combined length of on-site stream segments:		
b. Combined length of <u>PROPOSED</u>, post-development, impacted stream segments due to the project:		
c. Unimpacted stream impacts (lf) = 2(a)-2(b)		
3. Calculation of Potential Tier II Riparian Buffer Impacts to State Regulated Waters – Square Feet	**Square Feet**	
	Left Bank	**Right Bank**
a. Area of on-site stream buffer (i.e. within LOD, count buffer within 100' of stream):		
b. Area of PROPOSED impacts to on-site stream buffer, post-development:		
c. Unimpacted buffer impacts (sqft) = 3(a)-3(b)		

A. Tier II Stream Buffers - Tier II Watershed: _____
4. Buffer Impact Minimization:
Evaluate on-site alternatives to avoid buffer impacts for segments identified in 3(b). Examples include minimizing ROW, narrowing paths, etc. Discuss alternatives in the Tier II Report.
5. Buffer Exhibit Minimization:
Prepare a Tier II Buffer Exhibit for on-site streams. Depending upon the number of segments, multiple sheets (8 ½" by 11") may be used. Include: • An overview, labeling each segment (a, b, c…) • A tabular summary of average buffer width, linear feet impacted, and acres on each page. • The 100 foot riparian buffer • Areas where the post-construction stream buffer are +/- 100 feet. • On-site areas where buffers could be maintained at distance greater than or equal to a 100'

B. Tier II Forest Cover
1. Instructions: **a. If there is no net forest cover loss within the impacted Tier II watershed, mark this section N/A and proceed to Section C, Impervious Cover.** **b. Complete the analysis for each Tier II watershed affected on a separate sheet** **c. Insert the Tier II watershed name at the top of each box.** **d. "Potential Constraints" include forest loss due to ROW, SWM facilities, regulatory requirements, etc. and other unavoidable impacts** **e. In the Tier II Report, explain in detail minimization alternatives considered, and any actions taken.**

B. Tier II Forest Cover - - Tier II Watershed: _____	
2. Calculation of Potential Forest Cover Impacts	**Acres +/-**
a. Total on-site forest cover, EXISTING:	
b. Total on-site forest cover, POST-PROJECT: (**Do not count reforestation in this total**)	
c. Net forest cover loss, (acres)= 2(b) – 2(a)=	

B. Tier II Forest Cover - - Tier II Watershed: _____
3. Forest Cover Loss Minimization
If 2(c) is a negative value, evaluate on-site alternatives for forest cover impact minimization. Examples include minimizing ROW, alternate routes for roads, crossings, etc. to avoid forest cover impacts. Discuss alternatives in the Tier II Report.
4. Forest Cover Exhibit
On an 8 ½" by 11" sheet(s), prepare an on-site Tier II Forest Cover Exhibit. Include: ● Using varying symbology, show a basic site layout relative to 2(a) through 2(c) above.

C. Impervious Cover
1. Instructions: **a. If ESD is used to treat all new, on-site, post-construction stormwater, mark this section N/A and proceed to Section D, Mitigation and Other Potential Requirements.** **b. Insert the Tier II watershed name at the top of each box.** **c. Explain in detail minimization alternatives considered, and any actions taken.**

C. Tier II Impervious Cover - - Tier II Watershed: _____	
2. Calculation of Impervious Cover Increase	**Acres +/-**
a. Total additional (new) impervious cover, POST-PROJECT:	
b. Total additional (new) impervious cover treated with ESD practices, POST PROJECT:	
c. Total NEW impervious cover NOT treated with ESD practices, POST-PROJECT:	

C. Tier II Impervious Cover - - Tier II Watershed: _____
3. Impervious Cover Minimization
If 2(c) is greater than 0, evaluate on-site alternatives for impervious cover impact minimization by identifying additional areas where ESD stormwater management practices can be utilized. Discuss alternatives in the Tier II Report.
4. Impervious Cover Exhibit
On an 8 ½" by 11" sheet(s), prepare an on-site Tier II Impervious Cover Exhibit. Include: ● Using varying symbology, show a basic site layout relative to 2(a), 2(b), and 2(c) above

D. Erosion and Sediment Plan

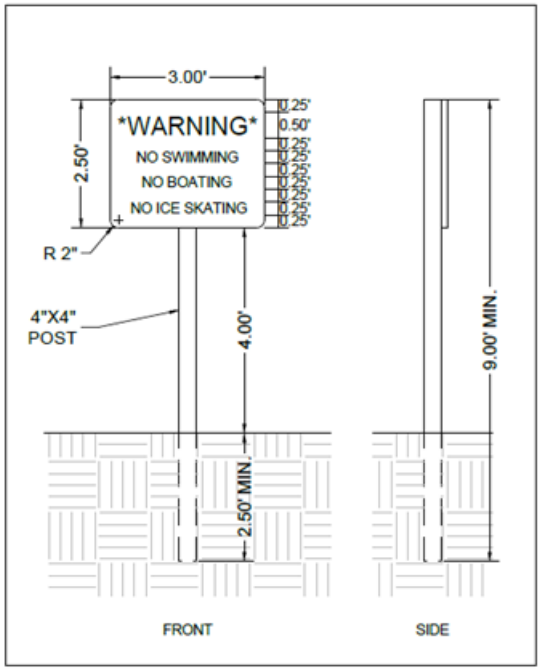
Applicants must utilize enhanced BMPs or additional controls, potentially above those minimally required in the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control, to protect high quality Tier II stream resources.

Incorporate applicable items, check off practices incorporated, and identify the practice locations in plans. Some practices may be marked N/A (e.g. no sediment traps are used). The list below is not exhaustive, and you may summarize additional information related to avoidance and minimization in Tier II watersheds within the Tier II Report.

Grading and Stabilization	**Plan Sheet Locations**
Locate stockpiles > 100 ft from stream resources	
Permanent mulch application depth shall not exceed 6". Temporary mulch spreading and matting to minimize compaction is allowable.	
Filtering	**Plan Sheet Locations**
Near streams upgrade silt fencing to super silt fencing or an equivalent measure (for example large compostable filter logs)	
Sediment Trapping (traps/basins)	**Plan Sheet Locations**
For road adjacent work include: Trash rack, oil/water separator, and/or skimmers	
Forebays or designs to maximize detention time (for example includes baffle boards)	
Flocculants or other chemical additives (may require additional approvals or conditions for use)	
Dewatering	**Plan Sheet Locations**
• Discharges take place beyond the existing stable vegetated buffer of 100 ft and/or • Discharges within the buffer occur through Agency approved secondary or redundant control (for example sediment bag treated with sediment filtration aid)	

Erosion and Sediment Control Plan Tier II Notes

- To the maximum extent practicable activities should take place during times when sediment transport are likely to be lower as predicted by National Oceanic and Atmospheric Administration 1 or 3 clear day weather forecast.
- Conduct inspections daily. Log books may be reviewed.
- Signage and flagging will be used within the Tier II buffer zone. Text: Tier II Waters: High Quality Waters Erosion & Sediment Control Measures Strictly Enforced & Monitored. See page 7 for details.
- Temporary access bridges shall be utilized over fords.
- Vehicles operating within the stream buffer must carry oil/gas/grease clean up kits for spill accidents.



8 WARNING SIGN
Scale: 1"=2'

Applicant Signature: _____ Date: _____

Provide a hardcopy response to:

Maryland Department of the Environment
Environmental Assessment and Standards Program
Antidegradation Implementation Coordinator
ATTN: Angel D. Valdez
1800 Washington Blvd, Suite 530
Baltimore, Maryland 21230

Provide an electronic response via email: to Angel Valdez at angel.valdez@maryland.gov