



Maryland Department of the Environment
Antidegradation Review Report Form
Alternatives Analysis – Mitigation Alternatives



Purpose

This form is designed to help applicants assemble a complete Tier II Review report. This form specifically addresses evaluating alternatives that mitigate or offset 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 mitigate water quality degradation. MDE may provide additional comments, conditions, or requirements, during the review.

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".

This project must evaluate mitigation alternatives that further minimize unavoidable impacts to Tier II watersheds and assimilative capacity. If MDE has determined that those impacts cannot be fully offset, a social and economic justification (SEJ) is required.

Instructions and Notes

1. Review all the information in this document carefully. Prepare a report to address all 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. Direct any questions regarding this form to the assigned Tier II Reviewer.

Mitigation Alternative Analysis Final Documentation Checklist

- ☐ Signature & Date MDE Tier II Alternatives Analysis – Mitigation Alternative form (page 1 & 7)
- ☐ Resource Impact Summary (**Complete the analysis for each Tier II watershed affected**)
 - ☐ Tier II Streams & Buffer Mitigation
 - Impact Mitigation
 - Impact Justification
 - ☐ Forest Cover Mitigation
 - Impact Mitigation
 - Impact Justification
 - ☐ Impervious Cover Mitigation
 - Impact Mitigation
 - Impact Justification
 - ☐ Mitigation
 - Statement of Unavoidable Impacts to Tier II Waters
 - Mitigation Alternatives Evaluation
 - Site Description
 - Protection Mechanism

Tier II Resource Impact Mitigation

Sufficient riparian buffers, ample watershed forest cover, and lower levels of impervious cover are essential to maintaining high quality waters. This project permanently reduces riparian buffers and forest cover, or increases impervious cover within Tier II watersheds leading to a decrease in water quality.

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

A. Tier II Stream Mitigation**1. Instructions:**

- a. If no stream or stream buffer impacts are proposed mark this section N/A and proceed to Section B, Forest Cover, otherwise
- b. Complete the analysis for each Tier II watershed affected on a separate sheet

A. Tier II Stream and Buffer Impacts- Tier II Watershed: _____

2. Summary Tier II Stream Impacts (Linear Feet, from MDE Tier II Alternatives Analysis – Minimization Alternatives V 2.0, A(2(c))	Left Bank	Right Bank
	Lf	Lf
3. Summary Tier II Stream Buffer Impacts (Square Feet, from MDE Tier II Alternatives Analysis – Minimization Alternatives V 2.0, A(3(c))	Sq ft	Sq ft

A. Tier II Stream and Stream Buffers - Tier II Watershed: _____**4. Stream Impact Mitigation:**

Acceptable stream mitigation shall be approved on a case-by-case basis.

5. Stream Impact Justification:

If there are any remaining unavoidable impacts, in the Tier II Report, provide narrative justification and supporting documentation for impacts.

6. Buffer Impact Mitigation:

Mitigation or offsets can occur both on and off-site. Per segment, locate areas where impacts to the 100' buffer are unavoidable.

- a) Evaluate on-site alternatives to identify areas where buffers could be expanded beyond the minimum 100' to offset areas of unavoidable buffer width constraints.
- b) If there are no on-site areas, evaluate off-site areas, within the Tier II watershed, where buffers could be improved, expanded, or established.

7. Buffer Impact Justification:

If there are any remaining unavoidable impacts, in the Tier II Report, provide narrative justification and supporting documentation for impacts.

A. Total Stream and Stream Buffer Mitigation

8. Tier II Stream Mitigation	Left Bank	Right Bank
	Lf	Lf
9. Tier II Stream Buffer Mitigation (average of 0' to 300' from bank)	Sq Ft	Sqft

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B. Tier II Forest Cover Mitigation
1. Instructions: <ul style="list-style-type: none"> a. If there is no net forest cover loss within the impacted Tier II watershed(s), mark this section N/A. b. Insert the Tier II watershed name at the top of each box. c. Explain in detail alternatives considered, and any actions taken

B. Tier II Forest Cover - - Tier II Watershed: _____	
2. Summary of Potential Forest Cover Impacts (Acres, from MDE Tier II Alternatives Analysis – Minimization Alternatives V 2.0)	Acres

B. Tier II Forest Cover - - Tier II Watershed: _____	
3. Forest Cover Loss Mitigation	
To achieve no net negative impact because of the proposed activity, the applicant shall consider alternatives to mitigate impacts 'in-kind', for forest cover loss, to the maximum extent economically feasible. Once those options are exhausted, applicants shall evaluate out-of-kind alternatives <u>within the Tier II watershed</u> that will help offset water quality impacts.	
4. Calculation of Forest Cover Loss Mitigation	Acres
a. Reforestation (on-site)	
b. Reforestation (off-site)	
c. Conservation (on-site, VOLUNTARY, above County Requirements)	____ x 1/2 =
d. Conservation (off-site, VOLUNTARY, above County Requirements)	____ x 1/2 =
e. Project Redesign	
f. Landscaping	____ x 1/4 =
g. Natural Regeneration	
5. Forest Cover Loss Justification	
If there are any remaining unavoidable impacts to forest cover, in the Tier II Report, provide narrative justification and supporting documentation for impacts.	

B. Forest Cover Mitigation – Tier II Watershed: _____	
6. Tier II Forest Cover Mitigation Summary (Sum of 4a through 4g)	Acres

C. Impervious Cover Mitigation**1. Instructions:**

- a. If ESD is used to treat all new, on-site, post-construction stormwater, mark this section N/A.
- b. Insert the Tier II watershed name at the top of each box.
- c. Explain in detail alternatives considered, and any actions taken.

C. Tier II Impervious Cover - Tier II Watershed: _____

2. Calculation of Impervious Cover Mitigation	Acres
a. Retrofits to ESD	
b. Removal of existing impervious surface	
c. Total Impervious Cover Mitigation (2a+2b)	

C. Tier II Impervious Cover - Tier II Watershed: _____**3. Impervious Cover Justification**

If there is any remaining unavoidable addition of impervious surface acreage (not treated with ESD) which is not offset, in the Tier II Report, provide narrative justification and supporting documentation for impacts.

D. Total Mitigation – Tier II Watershed: _____

1. Sum B(6) and C(2c)	Acres
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E. Tier II Mitigation**1. If mitigation is necessary:**

- a. **In-kind mitigation shall occur at a target ratio of 1:1, acre-for-acre.**
- b. **To satisfy the requirements of the Antidegradation Review, an applicant must demonstrate that they have conducted a robust alternatives analysis.**
- c. **Mitigation is required for unavoidable net forest cover loss, and any impervious cover increase that is not treated with ESD, stream and buffer impacts.**

E. Tier II Mitigation**2. Basic Mitigation Information**

- a. Preferred mitigation alternatives analysis within the impacted Tier II watershed. The order of mitigation alternatives is as follows:
 - i. Reforestation (In-kind) on-site – 1:1 ratio credit
 - ii. Reforestation (In-kind) off-site – 1:1 ratio credit
 - iii. Conservation (Out-of-kind) on-site* – 1:2 ratio credit
 - iv. Conservation (Out-of-kind) off-site* – 1:2 ratio credit
- b. Statement of unavoidable impacts to Tier II waters. This is total loss calculated in A(2-3) and B(2). Identify values specifically associated with stream buffers, forest cover, and impervious cover. Tabular totals shall be broken according to resource type and Tier II watershed impacted. The accompanying narrative in the Tier II report shall include a summary of why impacts are considered unavoidable.
- c. Mitigation site alternative analysis. All locations must be located within the affected Tier II watershed identified for each unavoidable impact.
- d. Site Description. Provide site address, name of property if known, map and parcel number, and centroid coordinates in latitude/longitude. Include maps of each mitigation property.
- e. Protection Mechanism. Permittees shall be required to provide documentation in the form of covenants, landowner agreements, deed details, etc. as well as financial assurances.
- f. Planting plan: Reforestation shall incorporate optimum vegetation selection guidance provided in the *State Forest Conservation Technical Manual, 3rd edition, 1997 by Maryland Department of Natural Resources*.
- g. Monitoring Reports. Properties shall be monitored for a minimum of two years to ensure site success. Reports shall provide visuals of establishment progress, as well as narrative descriptions. Include any issues encountered, overcome, and potential changes that may be necessary to meet objectives.
- h. Other Out-of-Kind Offsets –Credits TBD based on offset offered.

***Note:** Only conservation in addition to that which is required to meet County requirements can be counted towards Tier II mitigation.

Applicant Signature: _____ **Date:** _____

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

If requested, provide a hardcopy response to:

Maryland Department of the Environment
Water and Science Administration
Antidegradation Policy Implementation Coordinator
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Baltimore, Maryland 21230