

■ *Antidegradation Analysis Module 3*

Aspen Solar Project

Fannett Township

Franklin County, PA

Prepared for:

Infrastructure and Energy Alternatives, Inc.

6325 Digital Way, Suite 460

Indianapolis, IN 46278

112287000
Original – 04/10/2023
©Kimley-Horn and Associates, Inc.
50 S 16th Street, Suite 3300
Philadelphia, PA 19102
267-687-0150



Paul Hughes, P.E.

Kimley»»Horn



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES ANTIDEGRADATION ANALYSIS MODULE 3

Applicant: **Infrastructure and Energy
Alternatives, Inc.**

Project Site Name: **Aspen Solar Project**

Surface Water Name: **Dry Run; UNT 59690 to Dry
Run; UNT 59703 to Dry Run;
UNT 59706 to Dry Run; UNT
59709 to Dry Run; UNT
59713 to Dry Run; UNT
59717 to Dry Run; UNT
59719 to Dry Run;**

Surface Water Use: **CWF, MF**

ANTIDEGRADATION – EROSION AND SEDIMENT CONTROL (E&S) PLAN

A **Non-Discharge Alternative will be utilized** for the project that will either individually or collectively eliminate the net change in stormwater volume, rate, and quality for storm events up to and including the 2-year/24-hour storm during earth disturbance activities.

Identify the E&S BMP(s) that will be utilized to achieve the non-discharge alternative:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Alternative Siting: Location | <input checked="" type="checkbox"/> Limiting Extent & Duration of Disturbance |
| <input checked="" type="checkbox"/> Alternative Siting: Configuration | <input type="checkbox"/> Riparian Buffer (150 ft min.) |
| <input checked="" type="checkbox"/> Alternative Siting: Location of Discharge | <input type="checkbox"/> Riparian Forest Buffer (150 ft min.) |
| <input type="checkbox"/> Other: _____ | <input checked="" type="checkbox"/> Limited Disturbed Area |

Explain how the E&S BMP(s) will individually or collectively eliminate the net change in stormwater volume, rate, and quality for storm events up to and including the 2-year/24-hour storm during earth disturbance activities.

Alternative Siting: Configuration/Location/Location of Discharge - The proposed project has been considered various alternate layouts to minimize impact of the site and onsite wetlands to the greatest extent feasible. Thus, restricting the overall disturbance and change in cover.

Limiting Extent & Duration of Disturbance/Limited Disturbed Areas - A major goal in the design of the site was to limit the amount of disturbed areas to the greatest extent feasible. Limiting the disturbance area and providing an effective construction sequence will help keep earth disturbances to a minimum, maintaining the natural integrity of the tract and providing immediate temporary & final stabilization practices for all earth disturbance activities.

If a **Non-Discharge Alternative will not be utilized**, explain the rationale for non-selection, including why none of the alternatives are considered environmentally sound and cost-effective.

Riparian Buffer & Riparian Forest Buffer - There are no waters within 150' of the site requiring a riparian buffer or a riparian forest buffer. The proposed site has been designed in consideration of the existing wetlands, and the project will not degrade any nearby waters since the design utilizes the existing conditions to the greatest practical extent.

Antidegradation Best Available Combination of Technologies (ABACT) BMP(s) will be utilized for the project that will either individually or collectively manage the net change in stormwater volume, rate, and quality for storm events up to and including the 2-year/24-hour storm during earth disturbance activities.

Identify the ABACT E&S BMP(s) that will be utilized:

- | | |
|--|--|
| <input type="checkbox"/> Rock Construction Entrance with Wash Rack | <input type="checkbox"/> Rock Construction Entrance with Street Sweeping |
| <input type="checkbox"/> Wheel Wash | <input type="checkbox"/> Pumped Water Filter Bag with Compost Sock Ring |
| <input type="checkbox"/> Pumped Water Filter Bag with Sump Pit | <input checked="" type="checkbox"/> Compost Filter Sock |
| <input type="checkbox"/> Compost Filter Berm (HQ Only) | <input type="checkbox"/> Weighted Sediment Filter Tube (HQ Only) |
| <input type="checkbox"/> Silt Fence with Vegetative Filter Strip | <input type="checkbox"/> Super Silt Fence with Vegetative Filter Strip |
| <input type="checkbox"/> Wood Chip Filter Berm (HQ Only) | <input type="checkbox"/> Vegetative Filter Strip (HQ Only) |

- | | |
|--|---|
| <input type="checkbox"/> Sediment Basin with Perforated Riser (HQ Only) | <input checked="" type="checkbox"/> Sediment Basin with Skimmer |
| <input type="checkbox"/> Stone Inlet Protection with Compost Layer (HQ Only) | <input checked="" type="checkbox"/> Compost Filter Sock Sediment Trap |
| <input type="checkbox"/> Embankment Sediment Trap with Compost Layer (HQ Only) | <input type="checkbox"/> Embankment Sediment Trap with Compost Sock |
| <input type="checkbox"/> Sediment Trap with Perforated Riser (HQ Only) | <input type="checkbox"/> Sediment Trap with Skimmer |
| <input type="checkbox"/> Erosion Control Blankets within 50 ft of Surface Waters | <input checked="" type="checkbox"/> Immediate Stabilization |
| <input type="checkbox"/> Flocculant with PAMs | <input checked="" type="checkbox"/> Vegetative Conveyance |
| <input type="checkbox"/> Riparian Buffer (< 150 ft) | <input type="checkbox"/> Riparian Forest Buffer (< 150 ft) |

Approved Alternative: Alternative Rock Construction Entrance (See Sheet C-350)

Explain how the E&S BMP(s) will individually or collectively manage the net change in stormwater volume, rate, and quality for storm events up to and including the 2-year/24-hour storm during the earth disturbance activities.

The proposed E&S design will utilize compost filter socks (CFS), Compost Filter Sock Sediment Traps and Temporary E&S Sediment Basins for perimeter controls. All site entrances will incorporate a rock construction entrance and all inlets will have inlet protection to appropriately manage stormwater during earth disturbance activities. The proposed design will utilize the practice of implementing immediate stabilization of all disturbed areas upon completion or temporary cessation of earth disturbance activity. On slopes 3H:1V or steeper, erosion control matting will be installed to prevent additional runoff.

ANTIDegradation – POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) PLAN

A **Non-Discharge Alternative will be utilized** for the project that either individually or collectively eliminate the net change in stormwater volume, rate, and quality for storm events up to and including the 2-year/24-hour storm after earth disturbance activities.

Identify the PCSM BMPs that will be used to achieve the non-discharge alternative:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Alternative Siting: Location | <input checked="" type="checkbox"/> Low Impact Development |
| <input checked="" type="checkbox"/> Alternative Siting: Configuration | <input type="checkbox"/> Riparian Buffer (150-ft. min.) |
| <input checked="" type="checkbox"/> Alternative Siting: Location of Discharge | <input type="checkbox"/> Riparian Forest Buffer (150-ft. min.) |
| <input checked="" type="checkbox"/> Infiltration | <input type="checkbox"/> Water Reuse |
| <input type="checkbox"/> Other: _____ | |

Explain how the PCSM BMP(s) will individually or collectively eliminate the net change in stormwater volume, rate, and quality for storm events up to and including the 2-year/24-hour storm after earth disturbance activities.

Alternative Siting: Configuration/Location/Location of Discharge - The proposed project has considered various alternate layouts to minimize impact to the site to the greatest extent feasible. Thus, restricting the overall disturbance and change in cover.

Infiltration - One (1) permanent infiltration basin is proposed onsite.

Low Impact Development - The site has been designed to incorporate additional tree growth and infiltration areas in order to maintain a low impact development following earth disturbance activities.

If a **Non-Discharge Alternative will not be utilized**, explain the rationale for non-selection, including why none of the alternatives are considered environmentally sound and cost-effective.

Riparian Buffer & Riparian Forest Buffer - There are no waters within 150' of the site requiring a riparian buffer or riparian forest buffer. The proposed site has been designed in consideration of the existing woods on the property, and the project will not degrade and nearby waters since the design utilizes the existing conditions to the greatest practical extent.

Water Reuse - This alternative is not necessary for this application since the proposed design will mitigate all stormwater rate, volume, and quality measures.

Antidegradation Best Available Combination of Technologies (ABACT) has been selected for the project that will either individually or collectively manage the net change in stormwater volume, rate, and quality for storm events up to and including the 2-year/24-hour storm after earth disturbance activities.

Identify the ABACT PCSM BMPs that will be utilized:

- | | |
|--|---|
| <input type="checkbox"/> Rain Garden (with Infiltration) | <input type="checkbox"/> Disconnection of Impervious / Roof Area |
| <input type="checkbox"/> Rain Garden (without Infiltration) | <input type="checkbox"/> Pervious Pavement with Infiltration Bed |
| <input type="checkbox"/> Constructed Filter | <input checked="" type="checkbox"/> Infiltration Basin |
| <input checked="" type="checkbox"/> Vegetated Swale | <input type="checkbox"/> Infiltration Bed |
| <input type="checkbox"/> Vegetated Filter Strip | <input type="checkbox"/> Infiltration Trench |
| <input type="checkbox"/> Constructed Wetland | <input checked="" type="checkbox"/> Soil Amendment |
| <input type="checkbox"/> Wet Pond | <input type="checkbox"/> Dry Well / Seepage Pit |
| <input type="checkbox"/> Dry Extended Detention Basin | <input type="checkbox"/> Infiltration Berm / Retentive Grading |
| <input type="checkbox"/> Water Quality Device | <input type="checkbox"/> Protect Sensitive / Special Value Features |
| <input type="checkbox"/> Spray / Drip Irrigation | <input type="checkbox"/> Street Sweeping |
| <input type="checkbox"/> Rain Barrel | <input type="checkbox"/> Green Roof |
| <input type="checkbox"/> Protect / Utilize Natural Flow Pathways (on-site) | |

Approved Alternative: **MRC Bioretention**

Explain how the PCSM BMP(s) will individually or collectively manage the net change in stormwater volume, rate, and quality for storm events up to and including the 2-year/24-hour storm after earth disturbance activities.

The proposed stormwater design will mitigate stormwater volume, rate, and quality throughout the implementation of an MRC bioretention facility, infiltration facility, and soil amendments, along with minimizing disturbed area and re-vegetation with native species. The PCSM BMP's will mitigate all volume increase and reduce peak rates to equal to or less than pre-development conditions all while providing the necessary water quality benefits.

CERTIFICATION


I certify under penalty of law and subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities) that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Marisa Policastro

Applicant Name (type or print legibly)

Director - Civil Engineering

Official Title



Applicant Signature

3/28/2023

Date Signed