DMS Technical Review Scoresheet Guidelines

Purpose and Intent

The purpose of the scoresheet is to evaluate and rank DMS stream and wetland projects based on the potential to successfully maximize functional uplift and deliver the requested mitigation. This scoresheet was developed to qualify/quantify uplift solutions rather than problems and is intended to facilitate thoughtful discussion by the technical review team.

Terms and Definitions

The terms "projects, project area, on-site and the site" refer to land within the project easement where the treatment will take place.

The term "off-site" refers to areas adjacent to, upstream and/or downstream of the easement.

Artificial barriers include all obstructions or obstacles that inhibit stream flow and aquatic passage.

Potential is interpreted as the ability to address a functional stressor/issue **and** the probable successful treatment of the functional stressor/issue.

Functional Category refers to Water Quality, Hydrology and Habitat

Functional Stressors have been defined to represent dominant underlying process within each *functional category*

Project Sustainability refers to the capacity of one or more project elements to maintain function and ensure the long-term success of the project.

Evaluation of Functional Uplift Potential

Each *functional stressor* should be evaluated for the uplift potential for the majority of the aquatic resources and/or asset. Potential should consider the ability of the project as proposed to address and successfully treat the functional issue.

A L*ow* rating is the threshold for awarding points.

Ultimately, field observations and discussion between the technical scoring team and the provider, along with the documentation provided in the proposal by the provider will factor into the final decision.

Each functional stressor can attain a rating of *LOW, MODERATE,* or *HIGH* based on the project's **on-site potential for functional uplift** due to credited project activities (stream restoration, enhancement, or preservation; wetland re-establishment, rehabilitation, or preservation).

VERY HIGH can only be attained if the functional category achieves a HIGH based on technical merit, AND demonstrates one of the following: 1) the potential for the project to address off-site stressors, 2) if the project includes non-credited elements such as structural BMPs that will curtail point-source stressors, or 3) if the project includes additional buffer beyond the 50ft or 30ft standard.

Achieving a *VERY HIGH* rating for a functional stressor's uplift potential is meant to acknowledge and reward projects that present opportunities for ecological restoration beyond standard levels, or that address unique situations.

Determination of functional uplift potential must consider all proposed levels of restoration and treatments related to a stressor. For example, a project with *MODERATE* potential for fecal coliform uplift (cows only have access to a portion of the streams) could get bumped up to a *HIGH* if it includes BMPs that mitigate waste from an on-site feedlot. These extra factors are not necessarily additive – for example, a *LOW* project site doesn't necessarily become a *HIGH* scoring project if it has both extra buffers and BMPs.

Section 1. Minimum Requirements

An answer of NO to any of this section's questions results in the rejection of technical proposal.

Section 2. Functional Uplift Evaluation

Functional Category: Water Quality

Non-functioning riparian buffer/Non-functioning wetland vegetation. Non-functioning vegetation includes the absence of buffer/wetland vegetation, 1-sided buffer, narrow buffer on streams, sparse buffer/wetland vegetation, existing buffer/wetland vegetation dominated by invasive plant species AND/OR a combination of all conditions. Functional uplift is scored by evaluating the potential for the buffer/wetland vegetation to provide increased function to the resource relative to current conditions.

Potential for Functional Uplift

LOW: Buffer/wetland veg is functioning for most of the resource (appx > 80%).

MODERATE: Buffer/wetland veg is functioning for a portion of the resource.

HIGH: Little to no functioning buffer/wetland veg.

VERY HIGH: Non-functioning or partially functioning buffer/wetland veg **and** the opportunity for uplift beyond 50ft buffer in the piedmont or coast and 30ft buffer in the mountains.

Sediment. Functional uplift related to sediment involves identification of sediment sources, and all or partial removal and/or treatment of the sediment sources, and /or the potential to balance sediment input, output and storage. Sediment sources include non-point and point source from upstream, adjacent land, and in-stream (on site) or a combination of all sources. Functional uplift is scored by evaluating the potential for successful treatment of sediment issues to provide increased function to the resource relative to current conditions.

Potential for Functional Uplift

LOW: Limited sediment source and/or sediment input, output and storage are in balance for most of the resource (appx. 80%).

MODERATE: Sediment sources are on-site for a portion of the resource and/or sediment input, output and storage are in partial balance.

HIGH: The majority of sediment sources are on-site and/or sediment input, output and storage are out of balance.

VERY HIGH: Sediment sources are on and off site; **and** sediment input, output and storage are out of balance.

Nutrients. Functional uplift related to nutrients involves identification of the nutrient source, loading and all or partial removal/treatment of source. Nutrient sources include upstream and adjacent sources. Estimates of nutrient loading or concentrations pre and post construction can be used to justify uplift potential. Functional uplift is scored by evaluating the potential for successful removal and/or treatment of nutrient inputs to provide increased function to the resource relative to current conditions.

Potential for Functional Uplift

LOW: Limited nutrient sources for most of the resource (appx. 80%).

MODERATE: Nutrient sources are on-site for a portion of the resource.

HIGH: Nutrient sources are on-site for the majority of the resource.

VERY HIGH: Nutrient sources are on-site, off-site or both, **and** the opportunity for uplift includes treatments that improve project sustainability.

Fecal Coliform. Functional uplift for fecal coliform involves the amount of fc loading to the resource by direct input and/or overland flow input to the resource. Estimates of fc loading pre and post construction can be used to justify uplift potential. Functional uplift is scored by evaluating the potential for successful removal and/or treatment of fc inputs to provide increased function to the resource relative to current conditions.

Potential for Functional Uplift

LOW: Limited fecal coliform sources for most of the resource (appx. 90%).

MODERATE: FC sources are on-site for a portion of the resource.

HIGH: FC sources are on-site for the majority of the resource.

VERY HIGH: FC sources are on-site, off-site or both, **and** the opportunity for uplift includes treatments that improve project sustainability.

Other. Other functional stressors include identifying a pollutant source, the amount and frequency of direct pollutant inputs from a point source, e.g., failing septic, broken sewer lines, direct discharge of fertilizers, UST. Functional uplift is scored by evaluating the potential for successful removal and/or treatment of pollutant inputs to provide increased function to the resource relative to current conditions.

Determination of *Low, Moderate, High* and *Very High* functional uplift potential is the responsibility of the provider. Justification for uplift potential must be documented.

Functional Category: Hydrology

Peak Flows. Functional uplift for peak flows involves addressing the flashiness, timing, and delivery of peak flow events. Restoration and enhancement activities may result in slowing the time of concentration and/or dispersing flow (e.g., floodplain and riparian wetland). Functional uplift is scored by evaluating potential for attenuating peak flows to provide increased function to the resource relative to current conditions.

Potential for Functional Uplift

LOW: Peak flow timing and delivery is partially supporting on-site stream/wetland function and/or limited potential to address peak flows.

MODERATE: Peak flow timing and delivery is not supporting on-site stream/wetland function and/or limited potential to address peak flows.

HIGH: Peak flow timing and delivery is not supporting on-site stream/wetland function and there is opportunity to address on-site function.

VERY HIGH: Peak flow timing and delivery is not supporting stream/wetland function and restoration treatment will support stream/wetland function on and off-site. Ensures long-term project stability and improves hydrologic function of downstream resources

Artificial Barriers. Evaluating hydrologic barriers and functional uplift is based on the size, number and location of artificial barriers that affect in-stream flow. Barriers include impoundments, weirs, culverts, berms and pipes used in association with infrastructure. Functional uplift is scored by evaluating the potential of barrier removal and/or improvement to provide increased function to the resource relative to current conditions.

Potential for Functional Uplift

LOW: In-stream barriers are present and number, location and size have little impact on in-stream flow and function.

MODERATE: In-stream barriers are present and number, location and size and are partially inhibiting in-stream flow and function.

HIGH: In-stream barriers are present and number, location and size and are inhibiting in-stream flow and function.

VERY HIGH: In-stream barriers are present and number, location and size and are inhibiting in-stream flow and function and removal will fully restore in-stream flow and function.

Ditching/Draining. Ditching and draining involves areas where baseflow, water table elevations, flood water storage/routing and wetland hydroperiods have been anthropogenically altered. Functional uplift is scored by evaluating the potential for successfully restoring the interactions of surface water, groundwater and throughflow to provide increased function relative to current conditions. Note: there is no VERY HIGH rating for Ditching/Draining.

Potential for Functional Uplift

LOW: Ditching or draining are present and interactions of surface water, groundwater and throughflow are only slightly altered.

MODERATE: Ditching or draining are present and interactions of surface water, groundwater and throughflow are partially functioning.

HIGH: Ditching or draining are present and interactions of surface water, groundwater and throughflow are not functioning.

Other. Other hydrologic functional stressors include identifying specific impairments to hydrologic function not included above. Functional uplift is scored by evaluating the potential for successful treatment to provide increased function to the resource relative to current conditions.

Determination of *Low*, *Moderate*, *High*, and *Very High* functional uplift potential is the responsibility of the provider. Justification for uplift potential must be documented.

Functional Category: Habitat

Habitat Fragmentation. Evaluating fragmentation of habitat for aquatic species and functional uplift is based on the size, number and location of obstacles that affect aquatic habitats and passage. Habitat connectivity is associated with barriers, including impoundments, fords, weirs, culverts, berms and pipes used in association with infrastructure, as well as anthropogenic land uses. Functional uplift is scored by evaluating the potential to reconnect habitats to provide increased function to the resource relative to current conditions.

Potential for Functional Uplift

LOW: Obstacles to habitats are present, but number, location and size have limited impact on aquatic habitat and passage and/or limited opportunity to address habitat fragmentation.

MODERATE: Obstacles to habitats are present, and number, location and size have partial impact on aquatic habitat and passage and/or limited opportunity to address habitat fragmentation.

HIGH: Obstacles to habitats are present, and number, location and size are inhibiting aquatic habitat and passage.

VERY HIGH: Obstacles to habitats are present, and number, location and size are inhibiting aquatic habitat and passage. Opportunity to address upstream and/or downstream connectivity exists.

Limited Bedform Diversity. Functional uplift for bedform diversity involves the ability to affect the habitats necessary for various life stages of aquatic species. Habitats include pools, riffles, substrate, refugia, and protruding rocks and logs. Functional uplift is scored by evaluating the potential to add or improve bedform diversity to provide increased function to the resource relative to current conditions.

Potential for Functional Uplift

LOW: Bedform diversity is present but inconsistent and is providing habitat for some aquatic life stages.

MODERATE: Bedform diversity is sparse and is providing habitat for some aquatic life stages.

HIGH: Bedform diversity is sparse, inconsistent and poorly formed, and is providing habitat for few aquatic life stages.

VERY HIGH: Bedform diversity is absent and is not providing habitat for any aquatic life stages.

Absence of Large Woody Debris. Functional uplift for large woody debris (LWD) involves the ability to affect flow hydraulics to influence spatial characteristics of scour and deposition, organic material processing, biochemical cycling, thermal patterns and oxygen conditions. Functional uplift is scored by evaluating the potential to add or enhance LWD to provide increased function to the resource relative to current conditions.

Potential for Functional Uplift

LOW: LWD is present, but inconsistent and is providing for several functions.

MODERATE: LWD is sparse and is providing for few functions.

HIGH: LWD is sparse and inconsistent, and is providing for very little functions.

VERY HIGH: LWD is absent and is providing no function.

Other. Other habitat stressors include identifying specific impairments to aquatic habitat not included above. This category can also be used to document the potential for uplift of a targeted species. Functional uplift is scored by evaluating the potential for successful treatment of an impairment and/or successful uplift of a targeted species by providing increased function to the resource relative to current conditions.

Determination of *Low, Moderate, High*, and *Very High* functional uplift potential is the responsibility of the provider. Justification for uplift potential must be documented.

Planning Identified Stressor

The intent of this scoring metric is to incentivize proposals within DMS Planning Areas. Planning Areas are identified using a watershed approach to maximize the ecological benefit within the watershed. *Functional stressors* must receive a *Low* or greater to be evaluated for addressing watershed stressors as identified by DMS Planning. Watershed plans include Local Watershed Plans (LWPs), Regional Watershed Plans (RWPs) and Targeted Resource Areas (TRAs). When multiple planning areas overlap for a single *functional stressor*, the planning areas yielding the highest points will be selected.

To receive point in this portion of the scoresheet the proposed project **must**:

- Reside in a DMS Planning Area (LWP, RWP, TRA)
- Received *Low* or greater for any given *Functional Stressor*
- Address a *Functional Stressor* specifically identified within the Planning Area

Functional and Planning Subtotal. Record the counts of the check boxes and calculate Function Sum and Planning Sum.

Adjusted Risk Factor: Risk is characterized as the degree of probability of loss or failure while functional uplift is characterized by increase in function relative to current condition. In mitigation, priority 1 restoration usually has the highest risk because of large equipment and earth work that potentially can lead to soil structure loss, root disturbance, soil compaction and longer physical/ecological recovery time. However, the restoration risk, in many cases, results in higher functional uplift relative to current condition.

Enhancement is associated with varying activities in mitigation, and risk related to earthwork is usually lower than in restoration. Enhancement may only provide a moderate increase in function relative to current condition. However, enhancement has the potential for providing high functional uplift when it encompasses a large area and results in the removal of stressors.

For this reason, restoration and enhancement need to be balanced relative to risk.

$$\left(\frac{Total\ Restoration\ and\ Enhancement\ Feet}{Restoration\ Feet + \left(\frac{Enhancement\ Feet}{2}\right)}\right) * Sum\ of\ Function$$

Total Function and Planning = Risk Adjusted Score + Sum of planning.

Section 3. General

These metrics will be calculated by DMS Planning staff prior to the DMS technical review:

The percent of the RFP request of proposed wetlands (if applicable)

The percent of the RFP request of proposed stream (if applicable)

Physical constraints or barriers are obstacles that affect project design and effectiveness. Percentages are calculated by totaling the linear footage impacted by crossings, roadways, utilities, or reduced buffer; divided by total linear footage. Circle the percentage that best represents the project crossings if applicable.

Easement Continuity The Easement Continuity will be calculated using the DMS Easement Continuity Calculator ArcGIS Tool located: https://deq.nc.gov/about/divisions/mitigation-services/dms-vendors/rfp-forms-templates

This tool uses metrics to quantify the complexity of easement boundaries, the number of easement breaks, the distance between easement segments and the orientation of easement segments relative to each other.

Project Density considers the projects proximity to other DMS projects. The equation below is intended to award points for synergy within the watershed. The *Watershed Area* is calculated using USGS stream stats Delineate function. The *Project Count* is the number of DMS projects within the identified watershed area. For the purposes of this calculation the "Watershed Area" is defined as area with the highest point yield.

$$Project\ Density = \frac{Watershed\ Area}{Project\ Count}$$

Total all general points.

Section 4. Final Score

Final score = Total Function and Planning + Total General