

From: Burchette.John@epamail.epa.gov
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To: Walter J.Bell; Staszak, Janna/VBO; Jones, Adrienne/VBO; Karen.Doran@deq.virginia.gov
Subject: St. J's Stie 5 Wetlands Mitigation and Monitoring Plan

Hey guys, below are EPA comments on the Site 5 WMMMP. Thank you for the opportunity to comment on the document and please contact me with any questions or concerns.

Section 3.1.1 indicates that fixed monitoring plots will be established in each habitat type. We strongly recommend the use of randomly selected plots within each habitat type. This will help to ensure representativeness of the data over the long term and the overall success of the mitigation.

Section 3.1.1 also states that vegetation monitoring parameters will be measured against pre-removal conditions. The parameters should also be compared with the planting specifications and design.

Section 3.1.2 states that *Phragmites* may reestablish dominance over the restoration area, however fast-growing species have been selected to help prevent invasive species.

At a minimum, *Phragmites* should be controlled during the first two growing seasons to help facilitate the establishment of the desired species. *Phragmites* should also be controlled pre-removal in the removal area and, ideally, in areas immediately surrounding this area to slow the reinvasion. This will prevent surviving rhizomes from re-sprouting and allow planted vegetation time to get established.

Section 3.1.3 states that to assess how well the wetlands are providing ecological services, the restored and created wetland will be monitored for wildlife usage. It is unclear how and what wildlife species will be monitored and what the data will be used for. More specific information should be provided, including metrics and decision and exit criteria. This monitoring could include an assessment of the use of the site by amphibians, by the identification of breeding calls and inspection of the wetland for adults, eggs and larval stages (i.e., tadpoles) throughout the spring breeding season. If this monitoring element does not have specified success criteria, targets, and potential corrective actions, its usefulness is unclear.

Section 3.1.3 states that the occurrence of wildlife species that can damage marsh vegetation during wetland development, such as muskrats and turtles, will be monitored to assess the need for additional control measures. There are no turtle species that will damage newly planted vegetation and control for turtles should not be necessary. Some turtle species prefer small wetlands (i.e., spotted turtles) and are a good indicator of wetland health.

Section 3.2 states that vegetation monitoring will be conducted in the fall after the first growing season following planting. The section further states that at the end of Year 1, vegetation cover in the mitigation wetland is expected to be a minimum of 50 percent. These criteria are acceptable for the herbaceous vegetation; however, any large areas devoid of vegetation should be reseeded in the fall. It should be noted that any cover contributed by invasive species, such as *Phragmites*, should not be considered as meeting the success criteria and should be reported separately.

For the woody vegetation, percent cover is not applicable in the first years of monitoring. Percent survival should be assessed for the woody vegetation following the first growing season. Survival of planted species should be a minimum of 75 percent. In later growing seasons, the number of woody stems (planted and volunteers) per acre should be calculated based on six plots (three in tree area and three in shrub area). Woody stem counts by species should be assessed on a 15-foot radius circle

centered on each station point. The total number of woody stems for each species should be calculated on a per-plot and per-acre basis. Minimum stem counts should be 400 stems per acre by the third year. This approach is consistent with current wetland monitoring guidance.

The monitoring period needs to be extended, particularly as it applies to the woody species. In addition to what is already specified, monitoring should be performed in Years 5, 7, and 10. If the performance criteria for the woody species are not being met in year 10, the monitoring must be expanded.

Regards,

John Burchette(3HS11)

Remedial Project Manager

NPL/BRAC/Federal Facilities Branch

U.S. Environmental Protection Agency

1650 Arch Street

Philadelphia, PA 19103-2029

Phone: 215.814.3378

Fax: 215.814.3025

Burchette.john@epa.gov