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CHAPTER 3: JOINT PERMIT APPLICATION REVIEW

3.1 Typical Application Processes

The sections below apply to typical applications for impacts to surface waters. However, special procedures apply to VDOT projects, surface water withdrawal and supply projects, solid waste facilities (i.e., landfills), and certain natural gas pipeline projects (see Chapter 3 Appendix A for additional information).

3.1.1 Application Forms

DEQ, the Corps, VMRC, and local wetland boards participate in a Joint Permit Application (JPA) review process. Two JPA forms are available: the Standard JPA for most projects and the Tidewater JPA for certain projects in tidal areas. Detailed instructions on how to apply are included with each form. Forms may be downloaded from the [U.S. Army Corps of Engineers \(Corps\) website](#). Hard copies can be obtained from the [Virginia Marine Resources Commission](#) (VMRC) office at (757) 247-2200.

With the exception of VDOT-sponsored projects, applications and all supporting materials must be submitted to VMRC. VMRC will assign a JPA number to each application and provide the number to the applicant and each affected agency. The JPA number as assigned by VMRC is typically in the format YYYY#### (four-digit sequential number) – for example, 20181234 – as shown when searching for application documents on the VMRC website. However, for VWP permitting purposes, DEQ uses the format YY-#### (four-digit sequential number provided by VMRC) for individual permits – example 18-1234 - and the format WP#-YY-#### (four-digit sequential number provided by VMRC) for general permit coverage – example WP4-18-1234.

3.1.2 Application Receipt

Regardless of how the application is received, the application is considered received (APRD) on the date the appropriate DEQ office receives the VMRC permit number.

In some instances, applicants will provide a courtesy copy of a JPA to DEQ prior to obtaining a JPA number. In these instances, the permit writer should notify the agent and applicant that DEQ’s **15-day review period does not begin until DEQ has received the JPA number from VMRC.**

3.1.3 Completeness Review of Application

The VWPP regulation lists specific information necessary to apply for each type of VWP permit:

- WP1: [9VAC25-660-60](#)
- WP2: [9VAC25-670-60](#)
- WP3: [9VAC25-680-60](#)
- WP4: [9VAC25-690-60](#)
- Individual Permits: [9VAC25-210-80](#)

The items listed are what constitute a complete JPA. DEQ may request other additional pertinent information necessary to make a permit decision and/or issue a legal permit per regulation and Law.

Section 50 A of each general permit regulation lists the informational requirements that pertain to applications for reporting-only general permits. Unless a project will impact areas under a deed restriction, reporting-only general permits are typically not required to submit detailed plan and cross-sectional view drawings, materials management plans, functional assessments, compensatory mitigation plans, and permit fees. Permit writers should always review the regulation for the specific information required for reporting-only general permits, prior to review of a permit application. The VWP regulations and policies have mandatory timeframes¹ for completing application tasks:

- **15 Days** – within 15 days of receiving the application staff must verify that it is complete²; and if not complete, notify the applicant of any request for additional information. Although the 15-day clock does not start until the VMRC number is received, staff should always respond to the application as soon as possible. (§ 62.1-44.15:21 E of the Code of Virginia, 9VAC25-690-60 D and 9VAC25-690-60 E; 9VAC25-680-50 D and 9VAC25-680-50 E; 9VAC25-670-60 D and 9VAC25-670-60 E; 9VAC25-660-50 C and 9VAC25-660-50 D; and 9VAC 25-210-80 D)
- **15 days** - within 14 days staff should initiate coordination with DGIF and DCR for general permit coverage unless the deficiencies of the application preclude coordination. See Section 4.3.
- **45 days** – within 45 days staff should initiate coordination with state and federal agencies for individual permits (Va. Code §62.1-44.15:21 F). See Section 5.7.
- **45 days** – within 45 days of a complete application staff must authorize or deny coverage under the general permit; otherwise, the coverage is automatically granted.
- **120 days** – within 120 days of complete application, staff must issue or deny an individual permit, or must decide to hold a public hearing. (Va. Code § 62.1-44.15:21 E)

Note that applications submitted by VDOT may not be required to submit all of informational requirements listed in the regulation. VDOT uses an Interagency Coordination Meeting (IACM Meeting) to discuss and provide application information to DEQ and other agencies.

Applications may include all of the information listed in the regulation, but still require additional information to make a permit decision. This information should be identified in the additional information request letter as not necessary to complete the application but necessary to make a permit decision. The

¹ See Chapter 3 Appendix A for alternate timeframes applicable to special situations.

² 'Reporting-only' general permit coverage requires fewer application requirements because there are minimal impacts, and typically, no compensation is required.

template additional information letter provides a section for such requests. Staff should always discuss these situations with their supervisor.

3.1.4 Legal Name

The regulation requires that an application include the legal name and address of the applicant. **A permit issued to a company that is not a legal entity is unenforceable.** Consider a scenario in which a permit was issued in the name of “John Smith Enterprises”. There are violations on the site, and DEQ must pursue enforcement action. It turns out that there are three similarly named companies: John Smith Enterprises, Inc., John Smith Enterprises Company, and John Smith Esq. Enterprises. Which entity does DEQ pursue for the enforcement action? Which one is bound by the permit? Unfortunately, none of them. A permit must be issued to the exact legal name of a business. It is also critical that: i) the application is signed by a person who is authorized to legally bind the organization, and ii) that the permit is sent to the official corporate address. This way, there are multiple checks to ensure that the corporation has had numerous notifications that a permit has been applied for and issued in its name.

Permit writers should check the [Clerk’s Information System](#) of the Virginia State Corporation Commission in order to verify the legal name and address of a corporate applicant. With few exceptions, most business organizations are required to register with the SCC. Churches, certain airport or economic development authorities, government agencies, certain other entities are not required to register. In these cases, permit writers should check with their regional or central office enforcement representative to verify the correct listing of the permittee on the permit.

3.1.5 Site Ownership and Access

The Property Access Agreement found in Appendix A should be completed for all projects. The form should be signed by the applicant, even if the applicant is the property owner, and should always be signed by both parties in cases where the applicant and the owner are not the same party(ies). In order to ensure site access is available, staff must verify property ownership using local land records (or other ownership information submitted by the applicant).

The VWPP Regulation does not require site ownership to obtain a VWP Permit, and the VWP Permit does not convey any real or personal property rights (9VAC25-210-70 B). However, DEQ staff must be able to conduct inspections to ensure compliance with the permit and regulations. If the owner is not the permittee, he or she is not bound by the site access requirement in all VWP permits or by the site access agreement found in the JPA. If the property owner will not grant site access permission, a VWP Permit cannot be issued because DEQ will be unable to verify compliance.

3.1.6 Information Requests

Within 15 calendar days of receipt of the JPA number from VMRC, DEQ staff must review the application to determine if it contains all information required under the VWPP regulation. If information is required before an application may be deemed complete, DEQ staff must provide a written list to the agent and the applicant of all outstanding information required to complete the application and necessary to make a permitting decision. If the JPA is also requesting coverage under the SPGP, staff must request any additional information needed for that process in the initial request for information. Chapter 6 provides more details about the SPGP process, including the most recent SPGP Complete Application Checklist.

The permit writer may call or discuss verbally with the agent or applicant the information that has been requested, but it is critical that a written record of the request be provided, in order to document that

DEQ met its 15-day review requirement. Note that if a weekend or state holiday falls on Day 15, the information request must go out on the last business day prior to Day 15. For example, if an application is received on December 9th, and DEQ is closed on December 24th (Day 15), the additional information request must be sent by the close of business on December 23rd.

The additional information request should:

- Be written in a manner consistent with the Additional Information Request template.
- Be addressed to the Applicant, copying the Agent.
- Copied to the USACE and VMRC as applicable.
- Clearly identify what information is required to complete the application, including any required permit fee.
- Clearly identify what information is required for staff to make a permit decision.
- Clearly identify what information is required to complete the SPGP application, if applicable.

Staff must review the information provided by the applicant in response to the information request **within 15 calendar days** of the date when all of the information requested has been received. If the information is submitted in separate pieces on separate dates, staff does not need to review each partial submittal separately. When the additional information submitted does not include all information requested, the review clock does not recommence. Unless extenuating circumstances exist, subsequent reviews should not introduce new topics requiring additional information unless they are reasonably related to the original information request or new questions arise based on the information submitted or discovered.

An incomplete permit application may be administratively withdrawn by staff for the applicant's failure to provide all of the required information after 60 days from the date of the latest written information request. When this occurs, the applicant must resubmit the application and application fee when they are ready to continue with the permit process. Staff should discuss this situation with their manager prior to administratively withdrawing an application. In addition, the applicant should be notified in advance of the withdrawal and given a last firm date for submitting the outstanding information. The Administrative Withdrawal Letter template provides example wording for such a notification to the applicant.

Staff must identify the date that the application is complete in order to identify permit decision deadlines in accordance with the statute and regulations. This date will typically correspond to one of the following, whichever occurs last: 1) the date the permit application fee was deposited by DEQ, when such a fee is required; 2) the receipt date of the last correspondence that is relevant to the complete application requirements, as per the regulation; or 3) the date of a documented telephone conversation or field visit that is relevant to the complete application requirements, as per the regulation.

If an application has been deemed complete, but prior to permit issuance, an applicant submits new information or a revised application, the application becomes incomplete again. If project boundaries (even those in uplands) or impact areas change, re-coordination with other agencies will likely be required.

3.2 Identifying and Quantifying Impacts

In order to determine the type of permit that is appropriate for a project, the application must present the boundaries and quantity of impacts to all surface waters.

3.2.1 Single and Complete

Staff should review the project and surrounding area to reasonably verify that it is “single and complete”, and is not cumulative with other previously permitted projects. A "single and complete project" is a project that has independent utility and would be constructed absent the construction of other projects in the project area (9VAC25-210-10). Portions of a phased development project that depend upon other phases of the project are not single and complete. Portions of a phased development project that would be constructed even if the other phases are not built can be considered as separate single complete projects with independent public and economic utility. Multiple phases or portions of a project completed by separate owners or developers will still be considered cumulative and single and complete, unless each portion or phase has independent utility.

Related regulatory definitions (9VAC25-210-10) include:

Independent utility “means a test to determine what constitutes a single and complete project. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a phased development project that depend upon other phases of the project do not have independent utility. Portions of a phased development project that would be constructed even if the other phases are not built can be considered as separate single complete projects with independent public and economic utility.”

Phased development “means more than one project proposed for a single piece of property or an assemblage of contiguous properties under consideration for development by the same person, or by related persons, that will begin and be completed at different times. Depending on the relationship between the projects, a phased development may be considered a single and complete project or each project may be considered a single and complete project if each project has independent utility, as defined in this section.”

Single and complete project: “means the total project proposed or accomplished by a person, which also has independent utility as defined in this section. For linear projects, the single and complete project (e.g., a single and complete crossing) will apply to each crossing of a separate surface water (e.g., a single water body) and to multiple crossings of the same water body at separate and distinct locations. Phases of a project that have independent utility may each be considered single and complete.”

Note: When interpreting terms used in the VWP Program (9VAC25-210-10), staff should remember that the state policy (§ 62.1-11 B of the Code of Virginia) and the state water control law (§ 62.1-44.15:20 of the Code of Virginia) is to require the proper development, wise use, conservation and protection of water resources by protecting their physical, chemical, or biological properties. In the event of any ambiguity of terminology, the interpretation that most favors the state policy and is in accordance with the state water control law should take precedence. For example, although “person” is grammatically singular in the definition of “single and complete”, phases of a project, whether or not those phases are accomplished by different legal entities, must still have “independent utility” to be considered a “single and complete” project. When individual phases of a project do not qualify as “single and complete” and do not have “independent utility”, individual phases should be evaluated cumulatively as part of the larger project purpose that does qualify.

3.2.2 Secondary Impacts

Permit writers should also review the application to identify any potential secondary impacts that may not be identified in the JPA. Secondary impacts result from activities both within and outside of jurisdictional boundaries that have adverse effects to the physical, chemical or biological properties of on-site or downstream surface waters. Such impacts must be accounted for during the permit application process, unless measures are taken to avoid the impact or the applicant agrees to long-term monitoring to ensure the potential impacts do not occur (which is not a preferable scenario). If secondary impacts appear likely, permit writers should require that the applicant minimize the impacts to the maximum extent practicable, and quantify and compensate for the impacts that will likely occur. The amount of these impacts should be considered when determining the appropriate type of permit to use, such as when evaluating impacts against the general permit thresholds and considering compensation requirements (e.g., a 2:1 ratio for use of BMPs in wetlands or streams). The permit writer must notify the applicant of this assessment in the initial request for information. Examples of potential secondary impacts include:

- Installation of ditches or stormwater conveyance systems that drain or alter the hydrology of a wetland or stream.
- Homeowner activities, such as mowing, clearing, planting, filling or placement of decks or playground equipment on surface waters remaining in lots.
- Homeowner Association activities in surface waters remaining within open space areas within a development (i.e., passive recreation; vegetation alteration, subsequent deeding over of portions to individual homeowners).
- Fragmentation of wetland or streams.
- Installation of steep slopes in areas with highly erodible soils.
- Filling, grading or other activities that occur immediately adjacent to surface water boundaries.
- Installation of fill or excavation resulting in angles that are extremely difficult to stabilize.
- Lack of or inadequate number or size of culverts to support downstream hydrology.

Each of the above potential secondary impacts are described further in Appendix B.

3.2.3 Guidelines for Specific Situations

Certain permitting scenarios warrant special or in-depth consideration based on the nature of the activity and associated impacts. The following situations are detailed in Appendix B:

- Stormwater Management Facilities
- Culverts
- Temporary impacts to forested wetlands
- Boardwalk impacts
- Beaver dam removals
- Fences
- Herbicide & Pesticide Use within Surface Waters
- Mechanical Removal of Aquatic Plants
- Pylons, Piers and Bridge Abutments

- Temporary Matting

3.2.4 Calculating Impacts

Each area of impact to wetlands and open water must be identified according to its Cowardin classification (i.e., emergent, scrub-shrub, or forested) or type and quantified in square feet to the nearest whole number. Individual stream impacts are (i) quantified by length in linear feet to the nearest whole number and by average width in feet to the nearest whole number; (ii) quantified in square feet to the nearest whole number; and (iii) when compensatory mitigation is required, the impacts identified according to the assessed type using the Unified Stream Methodology.

Impacts within jurisdictional ditches containing open water or vegetated wetlands are calculated in acres. Impacts within channelized streams or ditches containing streams are calculated in linear feet and in square feet for fee calculation purposes. Staff must verify all impacts using the plans provided by the applicant, if time allows, and review of other available documentation.

Finally, once all impacts have been accounted for, staff should verify that conversion of square feet to acreage has been completed correctly. Per 9VAC25-210-180 B 1 h, the square footage of wetland impacts should rounded to the nearest whole number and summed for each Cowardin class, then converted to acreage and rounded to two decimal places.

For example:

Table 1. Sample Impact Conversion and Rounding

| Sample Impact Table | | | |
|--------------------------------|------------|------------|------------|
| | PFO | PSS | PEM |
| Impact Area 1 (sq. ft.) | 5,981 | | 10,982 |
| Impact Area 2 (sq. ft.) | 4,378 | 23,478 | |
| Impact Area 3 (sq. ft.) | 678 | | |
| Impact Area 4 (sq. ft.) | 2,977 | | |
| Sum (sq. ft.) | 14,600 | 23,860 | 10,982 |
| Acreage | 0.3352 | 0.5478 | 0.2521 |
| Acreage Rounded | 0.34 | 0.55 | 0.25 |
| Mitigation Ratio | 2:1 | 1.5:1 | 1:1 |
| Mitigation Credits | 0.68 | 0.83 | 0.25 |

3.3 Avoidance and Minimization

As part of the permit evaluation process used to authorize a particular project proposing to impact surface waters, the VWPP regulations incorporate the concept of avoidance and minimization from the *Guidelines for Specification of Disposal Sites for Dredged or Fill Material*, [40 CFR Part 230](#), also known as the Section 404(b)(1) guidelines (See 9VAC25-210-80 B 1 g).

The federal implementing guidelines for the Clean Water Act state that the burden of proof for demonstrating compliance with the guidelines is the responsibility of the applicant, not the permitting entity. Applicants must (1) establish that avoidance of impacts to state waters, including wetlands is not practicable; (2) demonstrate that all practicable efforts to minimize unavoidable impacts to state waters, including wetlands, have been taken in project design and construction plan; and (3) provide a plan for

compensation for all unavoidable impacts. Note that compensatory mitigation is not considered as a method to reduce environmental impacts, but rather as a means to replace lost functions and values of those impacts that cannot be first avoided and minimized.

Per VWP Regulation, the applicant must clearly demonstrate that the proposed activity, in terms of impacts to state waters and fish and wildlife resources, is the least environmentally damaging practicable alternative, and must document site plan alternatives to this effect. The VWPP Regulation defines the following terms, which are similar to those found in federal regulations and guidance.

- “Avoidance” means not taking or modifying a proposed action or parts of an action so that there is no adverse impact to the aquatic environment;
- “Minimization” means lessening impacts by reducing the degree or magnitude of the proposed action and its implementation; and,
- “Practicable” means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. [Note that in order to be practicable, an alternative must be both available to the permit applicant and capable of fulfilling the overall project purpose.]
- “Avoidance and minimization means the *specific* measures taken to reduce the size, scope, configuration, or density of the proposed project, including review of alternative sites for individual permit applications, which would avoid or result in less adverse impact to surface waters.” (9VAC25-210-80 B 1 g).

3.3.1 Project Purpose and Need

Water dependency and a project’s purpose are entwined, as the project’s purpose is the foundation for evaluating water dependency and, subsequently, avoidance and minimization. Water dependent projects are defined by the Section 404(b)(1) guidelines as those activities that require “access or proximity to or siting within the wetland to fulfill [the project’s] basic purpose.” Examples of water dependent projects include boat ramps, bulkheads, marinas, piers, docks, or similar structures. If a project is determined to be water dependent, then it is presumed that alternatives that completely avoid impacts to the aquatic ecosystem are not practicable, and the review can move to other factors to further minimize impacts prior to considering compensation. If a project is determined to be non-water dependent, then the applicant must clearly demonstrate that there are no other practicable alternatives to the proposed impacts.³

In light of the Section 404(b)(1) guidelines and relevant court rulings, VWPP project managers must give full consideration to the project applicant’s stated purpose and need. VWPP project managers should explore other practicable factors (i.e. design changes, siting changes, project reconfiguration, different

³ Courts generally have given significant discretion to the regulatory agencies regarding water dependency and purpose and need. In *Louisiana Wildlife Federation v. York*, the Fifth Circuit Court of Appeals held that “not only is it permissible for the [U.S. Army Corps of Engineers (the Corps)] to consider the applicant’s objective; the Corps has a duty to take into account the objectives of the applicant’s project. Indeed, it would be bizarre if the Corps were to ignore the purpose for which the applicant seeks a permit and to substitute a purpose it deems more suitable.” In *Friends of the Earth v. Hintz*, the Ninth Circuit Court of Appeals affirmed that the Corps had correctly determined that the siting of a sawmill and log export facility adjacent to a harbor was a water dependent activity, and, therefore, access to a special aquatic site was necessary.

construction practices, etc.) that first avoid the proposed impact, and then minimize those unavoidable impacts. Note that while the VWPP regulations ask the applicant to provide the purpose and need for the project as part of the JPA, staff normally does not evaluate the need for a project (for instance, multiple shopping centers in close proximity to each other) in making a permit determination. Exceptions are in the consideration of surface water withdrawal projects, when staff assesses the need for additional water as part of the purpose of the project. However, part of the Corps' public interest review considers project need based upon the information provided in the JPA and any subsequently submitted additional information.

It is critical that the purpose and need provided by the applicant is sufficiently specific to enable review of avoidance and minimization. If the purpose and need are not provided, or are vague, the permit writer may need to ask for clarifying details. For example, an application that states that the project purpose is to "construct a retail development with a minimum of 250,000 square feet of space and three outparcels" enables the permit writer to more effectively evaluate layout, parking and other requirements of the project, as opposed to an application simply states that the purpose of the project is "to construct a retail development."

3.3.2 Alternatives Analysis

Once it is determined that a project is non-water dependent, it is the responsibility of the applicant to perform an alternatives analysis to clearly demonstrate to the satisfaction of the board that the project is the least environmentally damaging practicable alternative in light of the overall project purpose.

When evaluating the alternatives analysis, DEQ must take into account the objectives of the applicant's project as presented, and not change the nature of the project (i.e. substitute apartments for single family housing) in order to reduce impacts. However, staff may ask an applicant to reconfigure their project, for example the number or placement of dwelling units, to further avoid and minimize wetland impacts if the cost of such modifications is practicable (see Section 3.5.3). If staff has questions regarding the alternatives analysis, such questions should be incorporated into the information request to document that an application is incomplete. Oftentimes a meeting with the applicant and/or agent after the request can be helpful in clarifying these issues; however, *the file must contain* documentation that the applicant's assertion that less damaging alternatives are not practicable. Information provided and discussed in meeting(s) should be formally provided in writing to DEQ to ensure the file is complete.

Note that for FERC-approved projects, DEQ may have limited control over alternatives once the National Environmental Policy Act (NEPA) process is concluded.

3.3.2.1 Off-Site Alternatives Analysis

It is important to note that the general permit regulations (9VAC25-660-60 B 11; 9VAC25-670-60 B 11; 9VAC25-680-60 B 12; and 9VAC25-690-60 B 12) require an analysis of **on-site** alternatives, while the main regulation (9VAC25-210-60 B 1 g) requires an analysis of **on- and off-site** alternatives.

Section 404(b)(1) guidelines state that a practicable alternative may include "an area not presently owned by the applicant which could reasonably be obtained, utilized, expanded, or managed in order to fulfill the basic purpose of the proposed activity" (40 CFR 230.10(a)(2)). In *Bersani v. EPA*, the Second Circuit Court of Appeals held that the practicable alternatives test relative to the availability of sites should be conducted at the time an applicant enters the market for a site, instead of at the time it applies for a permit. The courts often, but not always, support the position that if a property with less environmental

impact was available at the time of purchase of the subject property, then a less environmentally damaging alternative did exist. Note that this is often difficult to prove, especially for properties that have been owned for a long period of time but are just now being developed.

Based upon federal case law on this point (specifically, *Bersani v. EPA* and *National Wildlife Federation v. Whistler*), a project's overall purpose should be established first, and then a list of alternative sites meeting the project's purpose would be evaluated. Ideally, the preferred alternative should be selected that meets both the project purpose and has the least environmental impact. However, usually this sequential evaluation must occur in reverse, as the applicant may own a property for a period of time prior to establishing the purpose for a project on that property.

Many times, an entity already owns, leases, contracts to purchase, or otherwise has control over a particular parcel of land. To maximize an investment-backed expectation, the entity identifies a project that serves a community need (i.e., housing, retail, institutional, or other socioeconomic factor), then seeks to fulfill this need by proposing to develop the parcel. At this point, an alternatives analysis is conducted to determine that the preferred alternative (i.e., using this site for that particular community need) will meet the project purpose at the exclusion of other alternatives.

Often, the argument for pre-selecting the preferred alternative is that the entity is already in possession of or controls the land, the land may already have the required land use zoning, or the entity is attempting to realize an investment-backed expectation. This situation is precisely what the courts addressed in *Bersani*: that the practical alternatives test should be conducted at the time the applicant entered the market for a site. However, the courts have also addressed the need to consider investment-backed expectations. In *Penn Central v. New York City*, the court established a multi-factor balancing test, where the economic impact and character of the government action is balanced against the extent to which the government action interferes with reasonable investment-backed expectations of the regulant. In *Claridge v. New Hampshire Wetlands Board*, the court held that "[a] person who purchases land with notice of statutory impediments to the right to develop that land can justify few, if any, legitimate investment-backed expectations of development rights...." *Claridge* is further supported by *City of Virginia Beach v. Bell*, where the court denied a takings claim by the plaintiff who acquired a parcel two years after a municipal sand dune protection ordinance had been adopted. In this case, the court held that "[plaintiffs] cannot suffer a taking of rights never possessed."

Focusing on an investor's actual expectations makes good sense. If an investor knows about restrictions already in place when he purchases a property, he cannot reasonably assert that the restrictions result in an unfair taking or that he is being asked to avoid impacts to an unreasonable extent. In essence, a property owner cannot complain of regulatory limits on the use of the property that the owner knew about at the time of purchase, or that the owner should have known about. Conversely, if regulations have changed in the time since the owner purchased the property, then he cannot have known at the time of purchase of the difficulties in developing the parcel due to new laws and regulations currently in place. Therefore, the applicant's investment-backed expectations get more consideration than another applicant, who purchased property with knowledge of regulatory constraints.

In summary, given regulatory requirements and the outcome of these various court cases, staff should ask the applicant to evaluate, and staff should consider, all practicable alternatives for a project that achieves the applicant's stated purpose. Moving the proposed project to another parcel that would result in less environmental impact while achieving the overall project purpose is an alternative that must be

considered, if practicable. However, the VWPP project manager must be mindful that using another parcel of land for a particular project is not practicable in every instance. The VWPP regulations and incorporated federal guidelines also require DEQ to take into account the applicant's investment backed expectations at the time of the purchase.

3.3.2.2 Cost

When taking cost into consideration for the alternatives analysis, the preamble of the Section 404(b)(1) guidelines states that “[t]he determination of what constitutes an unreasonable expense should generally consider whether the project cost is substantially greater than the costs normally associated with the particular type of project under consideration.” The preamble further states that “if an alleged alternative is unreasonably expensive to the applicant, the alternative is not practicable.” The most important point regarding cost considerations is that the Section 404(b)(1) guidelines are not meant to consider financial standing of an individual applicant, but rather the characteristics of the project and what constitutes a reasonable expense for these projects that are most relevant to practicability determinations. Staff should consider whether the project cost would be substantially greater than the costs normally associated with a particular type of project (or the investment return substantially lower). For a developer, the federal guidelines state that the primary test of whether a project is still viable is, after all the costs have been paid from project revenues, the remaining value of the project is sufficiently high to proceed. DEQ relies on the applicant to provide financial information on the economic viability of the project, as modified. In complex cases, independent review of these economic figures may be warranted.

As each project has site-specific issues and constraints, it is impossible to establish a bright line to determine when enough avoidance and minimization has occurred. The following factors should be considered based upon data provided by the applicant: cost to develop the project on the chosen property versus cost to develop the project on another property; reasonable investment-backed economic expectations; logistics and feasibility; overall project purpose; and whether alternatives exist that would have less environmental impact.

The Section 404(b)(1) guidelines allow the agency to require “minor project modifications” to minimize wetland impacts. “Minor project modifications” are defined as those that are feasible (cost, constructability) to the applicant and that will generally meet the applicant’s purpose. This includes reduction in scope and size, changes in construction methods or timing, operation and maintenance practices, and other changes reflecting sensitivity to environmental impacts.

3.3.2.3 Examples of Questions Regarding Avoidance and Minimization

The VWPP project manager should consider a general list of questions when performing the avoidance and minimization review. The list of questions below is not intended to be all-inclusive – it is based on permit-application-review practices employed by various state and federal regulatory agencies.

1. On-Site Avoidance

- Spatial or dimensional changes to structure lay-out
 - Can another vertical level be added to a building to decrease the overall building footprint?
 - Can the building footprint be reduced and still achieve the project’s purpose and need?

- Can a building be repositioned on the parcel to reduce or eliminate environmental impacts?
- Can multiple structures be clustered to reduce or eliminate impacts?
- Can road or utility alignments be reconfigured? Can spans and bridges be used instead of culverts? Crossings should occur perpendicular to and in the narrowest area of surface waters.
- Is the parking provided the minimum required by local ordinances?
- Can vertical parking structures (such as garages) that reduce the horizontal footprint of impervious surface be used?
- Does the site provide the minimum number of road entrances allowed by local ordinances?
- **Site engineering changes**
 - Can 2:1 side slopes be used instead of gentler slopes?
 - Can retaining walls be used instead of slopes?
 - Can grading be minimized by incorporating natural topography?
 - Can more trees and vegetation be preserved?
 - Can lot layout be reconfigured?
 - Can state waters, including wetlands, be concentrated into subdivision “common areas”?
 - Can the amount of impervious surface be reduced to preserve as much natural cover as possible, especially for soils in hydrologic groups A and B, and possibly reduce the footprint of required stormwater treatment facilities?
- **Stormwater Management Changes**
 - Can stormwater conveyances and treatment be reconfigured to maintain flow in downstream surface waters and mimic pre-construction storm flows?
 - Are stormwater management facilities the minimum area and volume necessary to meet Virginia Stormwater Management Program requirements?
 - Will stormwater management facilities, other ponds, ditches, swales or other excavation drain or otherwise alter hydrology of nearby surface waters?
 - Can stormwater management facilities be sited outside of streams and wetlands?
 - Can the use of pipes be minimized?
 - Can LID stormwater techniques be used to reduce impervious areas and the need for larger stormwater retention/treatment areas?

2. On-Site Minimization

- Can some of the above-listed suggestions be used to further minimize impacts?
- Can directional drilling be used to install underground utilities across a State water instead of excavation and backfill?
- Can equipment fitted with low-pressure tires or tracks be used?
- Can any permanent impacts (e.g. access roads) be converted to temporary impacts?
- Can construction staging or stockpiling of materials occur in areas outside of State waters?

- Can impacts be confined to lower quality surface waters, avoiding higher quality surface waters areas?

In practice, application of the Section 404(b)(1) Guidelines is proportional to the significance of the environmental impact proposed by a permit application. For example, the detail of information required of an applicant with regard to such requirements will be much greater if the proposed environmental impacts are significant. A less detailed analysis would be required for permit proposals that have impacts that are minor in nature.

3.4 Functional Assessments

An analysis of the functions of wetlands proposed to be impacted is required under the regulation (9VAC25-210-80 C) when wetland impacts for each single and complete project are 1.01 acres or more, and any of the following applies:

- The proposed compensatory mitigation consists of permittee-responsible compensatory mitigation, including water quality enhancements as replacement for wetlands; or
- The proposed compensatory mitigation consists of purchasing mitigation bank or in-lieu fee program credits at less than the standard mitigation ratios of 2:1 for forest, 1.5:1 for scrub-shrub, and 1:1 for emergent.

When required, the method selected for the analysis shall assess water quality or habitat metrics and **must be preapproved by DEQ** in advance of conducting the analysis. DEQ does not endorse a specific functional assessment methodology. If a functional assessment is not coordinated in advance with DEQ, staff must verify that the methodology used evaluates habitat and water quality parameters, and is appropriate for the project's location and surface water resources.

The regulation prohibits DEQ from requiring a functional assessment when:

- Wetland impacts per each single and complete project total 1.00 acre or less; or
- The proposed compensatory mitigation consists of purchasing mitigation bank or in-lieu fee program credits at standard mitigation ratios of 2:1 for forest, 1.5:1 for scrub-shrub, and 1:1 for emergent, or higher.

3.5 Compensatory Mitigation

Compensatory mitigation is the last step in the three-step approach to compensate for unavoidable impacts to wetlands. Unless total impacts for a project fall under "reporting-only" general permit thresholds, impacts to surface waters require compensatory mitigation sufficient to achieve no net loss of wetland acreage and no net loss of function of wetlands and surface waters. In Virginia, compensatory mitigation may include:

- Purchase or use of wetland or stream mitigation bank credits from a DEQ-approved mitigation bank
- Purchase of wetland or stream credits from a DEQ-approved in-lieu fee program
- Wetland creation or restoration
- Stream restoration or enhancement

- Preservation of existing wetland and streams, when utilized in conjunction with creation, restoration, or mitigation bank credits. This option should be used with caution because mitigation bank credits often already incorporate a preservation component in their credits. A compensation package with greater than 20% wetland preservation or upland buffer credits or 50% stream preservation credits does not meet no net loss.
- Preservation or restoration of upland buffers adjacent to surface waters, when utilized in conjunction with creation, restoration, or mitigation bank credits. This option should be used with caution because mitigation bank credits often already incorporate a preservation component in their credits. A compensation package with greater than 20% wetland preservation or upland buffer credits or 50% stream preservation credits does not meet no net loss.

Compensation proposals must fulfill the requirements of State Water Control Law and the VWPP Regulation, which are consistent with the Corps-EPA 2008 [“Mitigation Rule”](#) (Compensatory Mitigation for Losses of Aquatic Resources, April 10, 2008 (33 CFR 325 and 332; 40 CFR 230). SWCL and the VWPP Regulation require compensation that is sufficient to ensure no net loss of wetland acreage and function and no net loss of stream functions. Generally, compensation must be “in-kind”, meaning that the resource provided as compensation must be the same as the resource impacted. However, the VWP regulation allows for “out-of-kind” compensation, which includes measures that do not replace the same type of wetland or surface water that was impacted but does replace lost wetland or surface water functions or provide a water quality, habitat, or other desirable benefit. A common example of generally acceptable “out of kind” compensation is when mitigating for open water impacts through purchase of wetland credits.

3.5.1 Types of Mitigation Available

3.5.1.1 Mitigation Banks

Mitigation banks are a form of "third-party" compensatory mitigation, in which the responsibility for compensatory mitigation implementation and success is assumed by a party other than the permittee.

A mitigation bank is a wetland, stream, or other aquatic resource area that has been restored, established, enhanced, or (in certain circumstances) preserved in order to provide compensation for impacts by other parties on other parcels. In Virginia, mitigation banks most often are created by private landowners or business entities, but some are completed by government agencies (such as VDOT or a locality) or nonprofit organizations. Under no circumstances does DEQ play a role in the pricing of bank credits. Banks operate under a mitigation banking instrument (MBI), approved by the Interagency Review Team (IRT), which is made up of representatives from DEQ, the Corps, VMRC, US FWS, EPA, DGIF, and other resource agencies.

The IRT determines the number of mitigation credits generated by the bank that may be offered for sale. “Initial release credits” are released to a bank prior to the on-site work being completed, and are usually composed of preservation credits and a percentage of the credits from proposed creation or restoration activities onsite. Initial release credits are similar to advance credits in an in-lieu fee program, except that a mitigation site has already been identified with the mitigation bank. The Final Mitigation Rule mandates that “implementation of the approved mitigation plan shall be initiated no later than the first full growing season after the date of the first credit transaction.” “Released credits” are released to a bank, often in phases, after work has been completed and monitoring shows performance standards are met. The IRT

also determines a bank's "geographic service area", which is the geographic area in which permitted impacts occur that can be offset by a sale of credits from the bank to a permittee. Initial release credits and released credits for a mitigation bank are available for sale at the time of their release.

The Code of Virginia (see § 62.1-44.15:23) allows the purchase of bank credits only in the same or adjacent same or adjacent [fourth-order subbasin](#) (8-digit HUC area) as the proposed surface water impact, within the same "river watershed" as defined in the Code. If the applicant demonstrates there are no available mitigation bank credits that may satisfy the permit (i.e. no banks with a geographic service area that covers the impacts), the permittee must consider other mitigation options. If there are no other appropriate mitigation options, the applicant may ask a bank sponsor to submit a request to the Interagency Review Team (IRT) for a credit sale outside of the bank's geographic service area. This request will be reviewed by the IRT, and should conform to the conditions in the Code. DEQ Permit Writers are not responsible for furnishing to a permittee a list of banks where credits are available. Please direct all permittees to the Corps' [RIBITS website](#) or have the permittee contact the DEQ mitigation specialist for information on initial release, released, and available credits.

3.5.1.2 In-Lieu Fee Funds

In-lieu fee funds are a form of "third-party" compensatory mitigation, in which the responsibility for compensatory mitigation implementation and success is assumed by a party other than the permittee.

State regulation defines an in-lieu fee program as "a program operated by a nonprofit organization or governmental agency that receives moneys from persons impacting wetlands or streams pursuant to an authorized permitted activity and that extends the moneys received to provide consolidated compensatory mitigation for permitted wetland and stream impacts." Virginia legislative and regulatory authority for In-lieu fee programs comes from § 62.1-44.15:21 B of the Code of Virginia and 9VAC25-210-116 D.

There are several in-lieu fee programs approved by the department for operation in Virginia, including the Virginia Aquatic Resources Trust Fund (VARTF) and the Living River Restoration Trust (LRRT). Within the department, in-lieu fee programs are approved by issuing a VWP permit for a specific project, taking an enforcement action, or approving an in-lieu fee program instrument that the department notices its intent to sign, according to 9VAC25-210-116 D 1. A Program Instrument is signed by the in-lieu fee program sponsor, DEQ (Central Office), and the US Army Corps of Engineers (Corps-Norfolk District). Similar to mitigation banks, an in-lieu fee program completes projects involving the restoration, establishment, enhancement, and/or preservation of aquatic resources, and monitors for performance standards. The Final Mitigation Rule mandates that an in-lieu fee sponsor must "secure in-lieu fee project sites and conduct the initial physical and biological improvements (e.g., grading and planting) by the third full growing season after the first advance credit for that service area is secured by a permittee." An in-lieu fee program has two types of credits: advance and released credits. Advance credits may be sold for impacts anywhere in a given "river watershed" in which the in-lieu fee program operates, and may be sold prior to a mitigation site being identified by the in-lieu fee sponsor. However, after advance credits are sold and a project is implemented, each project is assigned a geographic service area that adheres to the Code. In-lieu fee program released credits are those credits that have been constructed, are meeting performance standards, and are in excess of the in-lieu fee program's existing liability for impacts within the river watershed or the geographic service area.

The Code of Virginia (see § 62.1-44.15:23) allows the purchase of in-lieu fee credits only in the same or adjacent fourth-order subbasin (8-digit HUC area) in the same “river watershed” as the proposed surface water impact.

If the applicant demonstrates there are no available mitigation bank or in-lieu fee program credits that may satisfy the permit (i.e. no banks with a geographic service area that covers the impacts), the permittee must consider other mitigation options. If there are no other appropriate mitigation options, the applicant may ask an in-lieu fee program sponsor to submit a request to the Interagency Review Team (IRT) for a released credit sale outside of the in-lieu fee program’s geographic service area. This request will be reviewed by the IRT, and should conform to the conditions in the Code. DEQ Permit Writers are not responsible for furnishing to a permittee a list of in-lieu fee programs where credits are available. Please direct all permittees to the Corps’ RIBITS website or have the permittee contact the DEQ mitigation specialist for information on advance, released, and available credits.

3.5.1.3 Permittee-Responsible Compensatory Mitigation

“Permittee-responsible compensatory mitigation” or “permittee-responsible mitigation” includes activities such as restoration, establishment, enhancement, and/or preservation of aquatic resources that are undertaken by the permittee, or an authorized agent or contractor, for which the permittee retains full responsibility. These activities may occur on the site where impacts are located, or at another site, and are constructed or implemented concurrent with permitted impacts. The permittee retains all liability for ensuring the long-term success of the mitigation project, and the permit contains a final mitigation plan, which lays out the conditions for site selection, planning, construction, financial assurances, monitoring, success criteria, long-term management, and site protection of the permittee-responsible mitigation site. *Note: If a permittee requests to create a multi-project mitigation site, please note that this mitigation strategy was historically allowed, but is no longer permitted under the regulation. Any mitigation site that is to be used for multiple permits/projects must go through the mitigation bank approval process.*

3.5.2 Mitigation Hierarchy

9VAC25-210-116 C of the VWPP Regulation specifies the following sequence of preference for compensation alternatives:

Table 2. Compensation Preference Order

| Preference Order | Wetlands | Streams |
|------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------|
| 1 | Mitigation bank wetland credits | Mitigation bank stream credits |
| 2 | In-lieu fee program credits | In-lieu fee program credits |
| 3 | Permittee-responsible compensation using a watershed approach ⁴ | Permittee-responsible compensation using a watershed approach ² |

⁴ “Watershed approach” means an analytical process for making compensatory mitigation decisions that support the sustainability or improvement of aquatic resources in a watershed and that ensures authorized impacts and mitigation have been considered on a watershed scale. (9VAC25-210-10)

| Preference Order | Wetlands | Streams |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Permittee responsible on-site and in-kind compensation | Permittee responsible on-site and in-kind compensation |
| 5 | Permittee responsible off-site or out-of-kind compensation | Permittee responsible off-site or out-of-kind compensation |
| 6 | Upland buffer restoration, enhancement, or preservation when adjacent to wetlands and only when utilized in conjunction with options 1 through 5 | Upland buffer restoration, enhancement, or preservation when adjacent to streams and only when utilized in conjunction with one of the above options |
| 7 | Preservation of wetlands only when used in conjunction options 1 through 5 | Preservation of stream channels and adjacent riparian buffers only when used in conjunction options 1 through 5 |

3.5.2.1 Evaluation of Mitigation Proposals that Differ from Mitigation Hierarchy

The Code of Virginia section for Impacts to Wetlands (§ 62.1-44.15:21), dictates that “The Board shall evaluate the appropriate compensatory mitigation option on a case-by-case basis with consideration for which option is practicable and ecologically and environmentally preferable, including, in terms of replacement of acreage and functions, which option offers the greatest likelihood of success and avoidance of temporal loss of acreage and function. This evaluation shall be consistent with the U.S. Army Corps of Engineers Compensatory Mitigation for Losses of Aquatic Resources (33 C.F.R. Part 332).” An applicant may present a proposed compensatory mitigation option that is different from the mitigation hierarchy. If there are available mitigation options of higher preference on the hierarchy than the proposed compensatory mitigation option, then the applicant shall submit information and the Board shall evaluate the proposed compensatory mitigation option according to the terms of the Code of Virginia outlined above. This section outlines considerations for evaluating the proposed compensatory mitigation option, under these circumstances.

ECOLOGICALLY AND ENVIRONMENTALLY PREFERABLE

The Code of Virginia section above highlights the need to evaluate the practicable and ecologically and environmentally preferable mitigation option. The three parameters by which to evaluate ecological and environmental preferability are described here.

Replacement of acreage and functions – The degree to which the proposed compensatory mitigation option provides a greater replacement of wetland acreage and functions or stream functions and water quality benefits than available mitigation options higher on the hierarchy. This may take the form of an evaluation between the impacts, available hierarchy mitigation options, and the proposed compensatory mitigation option, and may include, but is not limited to: evaluation according to the Site Selection Criteria (USACE, 2018) for mitigation sites, evaluation of in-kind vs. out-of-kind compensation, the aquatic resource functions and services impacted and replaced by each option, a full no net loss evaluation,

proximity to impacts, compensatory mitigation done under a watershed approach, special resource considerations at the impacted or compensation site(s) (i.e. presence of rare, threatened, or endangered species, rare plant communities, etc.), specific factors discussed under the type of mitigation option below, or other factors, as applicable.

Greatest likelihood of success – “Likelihood of ecological success and sustainability” (Final Mitigation Rule, 332.3(a)(1)) of the proposed mitigation option, in comparison with other available mitigation options higher in the hierarchy. Generally, the greatest likelihood of success occurs where risks and uncertainties can be reduced to the greatest extent practicable, and may include ecological and administrative aspects of a given mitigation option. For example, the Final Mitigation Rule states that restoration of wetlands may present a greater likelihood of success than creation of wetlands from uplands. In addition, those mitigation options with the greatest likelihood of success may be located at mitigation banks and in-lieu fee program mitigation sites, for the reasons established in the following sections. However, a permittee-responsible mitigation site may be evaluated for the greatest likelihood of success, if the applicant were to provide all the required elements provided by a mitigation bank or in-lieu fee program site. See the permittee-responsible mitigation section below.

Avoidance of temporal loss of acreage and functions – Temporal loss is defined as the time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site. This evaluation may consider, but is not limited to, the following factors: Anticipated impact date, impacted resource type, anticipated mitigation construction date (if not already built), released credit date, maturity of constructed mitigation site(s), specific factors discussed below, or other factors, as applicable. In most cases, released mitigation credits will have the greatest avoidance of temporal loss of acreage and functions.

PRACTICABLE

State regulations define practicable as “available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.” For the purposes of the evaluation of compensatory mitigation options, ecological and environmental preference will always outweigh practicability. If a mitigation option is proposed that is equal in the evaluation of ecological and environmental preference to all other mitigation options higher on the hierarchy, then practicability may be considered.

3.5.2.2 Mitigation Banks

The preference hierarchy in the VWPP Regulation is consistent with the 2008 Mitigation Rule⁵. The hierarchy is designed to improve the effectiveness of compensatory mitigation at replacing lost aquatic resource functions and acreage, and is based on a large body of science demonstrating that the typical large-scale mitigation project is more efficient and effective than multiple smaller mitigation projects. Research findings from numerous studies conclude mitigation banks and in-lieu fee fund programs are the most successful modes for mitigating impacts to aquatic resources for the following reasons:

⁵ “Compensatory Mitigation for Losses of Aquatic Resources”. 73 Fed. Reg. 19594 (April 10, 2008) (codified at 33 CFR Parts 325 and 332 and 40 CFR Part 230 (<http://www.epa.gov/wetlandsmitigation/#plan>))

1. Replacement wetlands are often sited in unsuitable locations under a system that prefers on-site mitigation.⁶
2. Mitigation banks and in-lieu fee programs have advantages toward achieving the goal of no net loss of wetlands.⁷
3. Mitigation banks provide economy of scale and better ecological performance, which benefits the aquatic environment.⁸
4. Mitigation banks provide ecological benefits in advance of impacts.⁵

In addition to their ecological benefits, mitigation banks and in-lieu fee programs have several practicable advantages over permittee-responsible mitigation projects:

1. Mitigation Banking Instruments (MBI) require thorough planning and monitoring of mitigation banks.
2. The Interagency Review Team (IRT) only issues released credits from banks and in-lieu fee programs when the IRT agrees that the compensatory mitigation is meeting certain success criteria.
3. DEQ recognizes the benefits of having mitigation in place before impacts are initiated, which is the case more often with mitigation banks and in-lieu fee program released credits than with permittee-responsible mitigation.
4. Current science shows that consolidated mitigation is ecologically preferable and fits a watershed approach as compared to permittee-responsible mitigation.

3.5.2.3 In-Lieu Fee Programs

DEQ may consider in-lieu fee program released credits, but the applicant must demonstrate that the in-lieu fee project is more practicable and ecologically and environmentally preferable than available mitigation bank credits, which have a higher preference in the hierarchy set by the regulation. Factors to consider may include those listed above, as well as whether mitigation bank credits within the watershed have been issued as part of an initial release of credits, which takes place prior to work being completed.

DEQ may consider in-lieu fee program released credits to be more practicable and ecologically and environmentally preferable than in-lieu fee program advance credits, because in-lieu fee program released credits are those credits that have been constructed, are meeting performance standards, and are in excess of the in-lieu fee program's existing liability for impacts in the watershed. In-lieu fee program released credits are the most equivalent mitigation option to released credits from a mitigation bank, for ecological and environmental preferability.

⁶ Michigan Department of Environmental Quality (Michigan DEQ). 2001. Michigan Wetland Mitigation and Permit Compliance Study: Final Report. Michigan Department of Environmental Quality, Land and Water Management Division. Lansing, Michigan. 59 pp. plus appendices.

⁷ National Research Council (NRC). 2001. Compensating for Wetland Losses Under the Clean Water Act. National Academy Press (Washington, DC).

⁸ Federal Register. 1995. Federal Guidance for the Establishment, Use and Operation of Mitigation Banks; Notice. Department of Defense, Environmental Protection Agency, Department of Agriculture, Department of the Interior, Department of Commerce, November 28, 1995. Volume 60, No. 228, pp. 58605-58614.

3.5.2.4 Permittee-Responsible Mitigation

DEQ may consider permittee-responsible mitigation, but the applicant must demonstrate that the proposed project is more practicable and ecologically and environmentally preferable, in terms of the Code of Virginia section above than all available mitigation options having higher preference in the hierarchy above. In addition, the permittee must be held to the same standards as a mitigation bank or in-lieu fee program for plans, success criteria, site protection, long-term stewardship, etc. If a permittee responsible site is being compared to either initial release bank credits or in-lieu fee program advance credits, the applicant shall demonstrate whether the permittee-responsible mitigation will likely meet performance standards before the initial release credits or advance credits are fulfilled.

If an applicant proposes permittee-responsible mitigation using a watershed approach, and has agreed to be held to the same standards as mitigation banks and in-lieu fee programs, VWPP staff should consider whether a watershed approach is applicable. Factors to consider include but are not limited to:

1. Is there adequate information currently available on watershed conditions and needs?
 - a. If there is a watershed plan, is it appropriate for wetland mitigation planning or is it mainly used for some other purpose such as stormwater planning? A watershed plan appropriate for mitigation planning should not focus exclusively on one or two specific functions (e.g. water quality or one habitat type), but should provide an analysis of the suite of functions typically provided by the affected aquatic resource. In addition, the plan should prioritize sites for mitigation, through identification of degraded aquatic resources and of immediate and long-term aquatic resource needs.
 - b. Is this in an area where watershed boundaries are unclear or do not exist (e.g. coastal areas) and therefore a watershed approach is not relevant?
 - c. Does the watershed approach account for geographic ecosystem type even within the watershed? For example, it should require impacts in coastal, non-tidal waters to be compensated for in coastal, non-tidal waters.
2. Do in-house resources (e.g. mapping, threatened and endangered species databases, aerial photographs) provide additional watershed or site-specific data? For example, where an impact site has Mabee's salamander (a state-listed threatened species) habitat and an applicant proposes in-kind/off-site mitigation within the watershed where the compensation site provides Mabee's salamander habitat, the off-site mitigation option may be given preference.
3. Is the scope of analysis adequate? The scope of analysis should be commensurate with the level of impact. When determining the scale of the watershed analysis, staff should consider factors such as aquatic habitat diversity, habitat connectivity, relationships to hydrological sources (including availability of water rights), trends in land use, ecological benefits, and compatibility with adjacent land uses.

3.5.2.5 Preservation

The use of preservation of wetlands or stream channels with upland buffers as compensation should be very rare, and should *always* be discussed with regional management prior to consideration. Preservation should only be used when no ecologically preferable options exist, and in conjunction with sufficient restoration or creation to achieve no net loss of acreage and function. Preservation should be used with caution when paired with mitigation bank credits, because these credits often already incorporate a

preservation component. It is critical to ensure that, when preservation is combined with bank credits made up in part by additional preservation, the project will still achieve no net loss of wetland acreage and function and no net loss of stream functions. As permittee responsible mitigation, preservation must meet the same criteria as a mitigation bank, in order to ensure success. Neither the statute nor the regulation lists economic practicability as a factor the agency should consider when evaluating compensatory mitigation proposals; therefore, choosing preservation due to anticipated savings to the applicant is not acceptable.

Managing long-term compliance and success of preservation instruments requires significant agency resources. In addition, oftentimes the agency must pursue enforcement judicially, rather than through the typical administrative enforcement process. As properties change hands, enforcement becomes more complex.

If no other options for compensatory mitigation are available, preservation may be considered. Appropriate preservation sites and proposals **must** meet all of the following criteria:

- The system to be preserved is of exceptional quality, and demonstrate all of the following characteristics:
 - documented presence of Threatened or Endangered species, Species of Greatest Conservation Need (classified as Tier 1 or 2, or assemblages of Tier 3 and/or 4 species (See <http://bewildvirginia.org/species/>)) or areas listed as a Natural Heritage Resource;
 - invasive species absent;
 - system at or near maturity; and
 - favorable water quality within the system.
- The system has an important, positive effect on downstream water quality.
- Documented threat of loss or degradation, such as from development, agriculture, or silviculture.
- Preservation requirements are not already in place (such as Resource Protection Areas (RPAs) or other local ordinances).
- The preservation plan protects the aquatic system, to the extent possible, against present and potential future adverse effects, such as fill, fragmentation, erosion or sedimentation, litter, stormwater inputs, hydrologic changes, and lack of buffer.
- Resources to be preserved are geographically connected to each other, are physically buffered from project development, and are not within subdivided lots or other areas that make them susceptible to human or other anthropological impacts.
- The preserved site must be legally protected in perpetuity through a protective mechanism such as, but not limited to, a conservation easement held by a third party in accordance with the Virginia Conservation Easement Act (§ 10.1-1009 et seq. of the Code of Virginia) or Virginia Open-Space Land Act (§ 10.1-1700 et seq. of the Code of Virginia), a duly recorded declaration of restrictive covenants, or other protective instrument. Declarations of restrictive covenants must follow the most recently approved template. Any changes to the template must be approved by Central Office prior to approval.
- A long-term stewardship plan must be completed, and must include a description of long term management and maintenance needs, the entity responsible for stewardship, annual cost

estimates for management and maintenance, and provide funding to be used to meet those needs.

- All other IRT planning, execution and success criteria are met.

3.5.3 Determining the Amount of Compensatory Mitigation Required

In consideration of the length of time it takes to replace the vegetative community and functions of forested and scrub-shrub wetlands, ratios for impacts to these wetland types are greater than 1:1. Generally accepted compensation ratios are found in the table below. Ratios may vary in individual permits depending on specific site characteristics, however any proposed variation should be discussed between regional and central office management and would require a functional analysis per 9VAC25-210 80 C. if the proposal includes bank/in-lieu fee program credit purchase at less than the listed ratios.

Table 3: Wetland Compensation Ratios

| Resource Type | Total Compensation Ratio |
|--------------------------------------|--------------------------|
| Palustrine Forested Wetland (PFO) | 2:1 |
| Palustrine Scrub Shrub Wetland (PSS) | 1.5:1 |
| Palustrine Emergent Wetland (PEM) | 1:1 |

Compensation ratios for wetlands should be applied to the acreage of wetland impacts that has been rounded to the second decimal place, and ratios for streams should be applied to the linear footage of streambed impacts that has been rounded to the nearest whole number. Ratios should not be applied to square footage of wetland impacts. Wetland compensation requirements should be rounded to the second decimal place, and stream compensation requirements should be rounded to the nearest whole number.

In the sample table below, note that compensation requirements would be different had the ratios been applied to the square footage of impacts or to acreage that had not been rounded to the second decimal place.

Table 4. Compensation Requirements Rounding Example

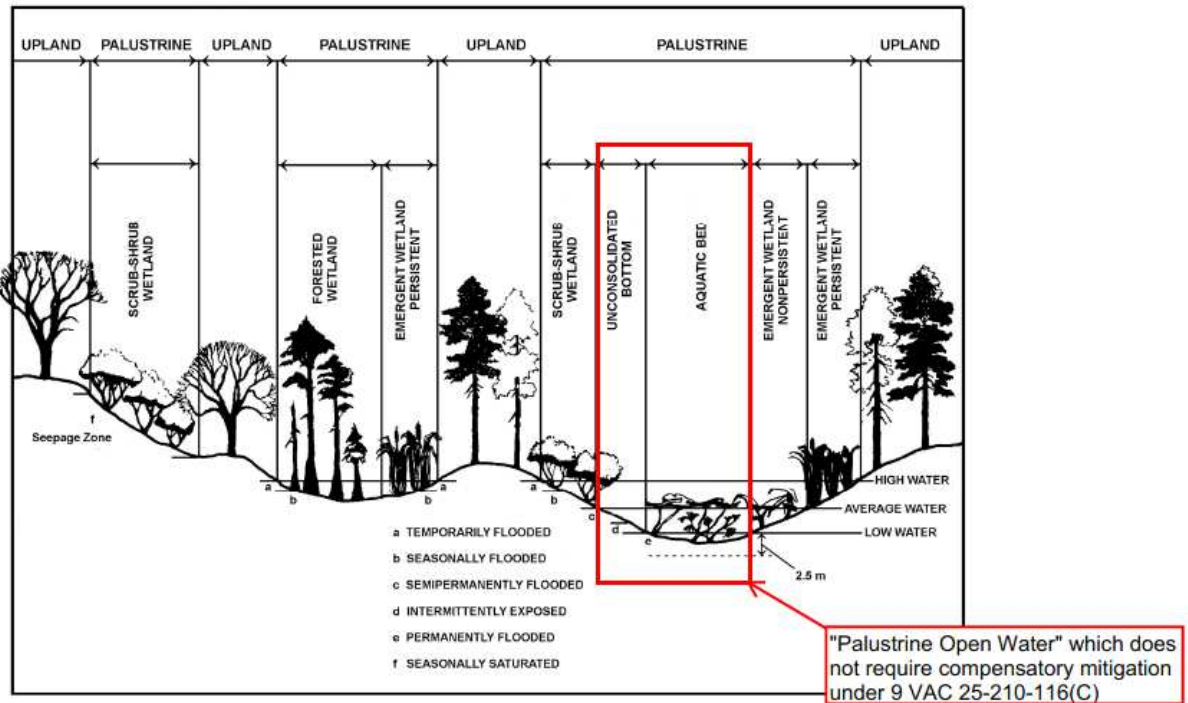
| Sample Impact Table | | | |
|-------------------------|--------|--------|--------|
| | PFO | PSS | PEM |
| Impact Area 1 (sq. ft.) | 5,981 | | 10,982 |
| Impact Area 2 (sq. ft.) | 4,378 | 23,478 | |
| Impact Area 3 (sq. ft.) | 678 | | |
| Impact Area 4 (sq. ft.) | 2,977 | | |
| Sum (sq. ft.) | 14,600 | 23,860 | 10,982 |
| Acreage | 0.3352 | 0.5478 | 0.2521 |
| Acreage Rounded | 0.34 | 0.55 | 0.25 |
| Mitigation Ratio | 2:1 | 1.5:1 | 1:1 |
| Mitigation Credits | 0.68 | 0.83 | 0.25 |

Compensation for stream channel impacts requires analysis of each impacted stream reach according to the [Unified Stream Methodology](#) (USM) to determine compensatory requirements. The USM was developed collaboratively between the Norfolk District and DEQ in 2007. The USM forms are completed by the applicant and provided with the permit application. **The forms must be reviewed by DEQ staff, preferably with a site visit, to ensure that the proper compensatory mitigation is being proposed.** A typical Reach Condition Index (RCI) value for a stream immediately surrounded by urban or agricultural conditions may be between 0.80 and 1.00. A typical RCI value for a stream immediately surrounded by forest, wetlands, or other natural or rural conditions may be between 1.10 and 1.30. All RCI values should be reviewed thoroughly, especially if they are above or below these typical ranges. Common mistakes include utilizing the Channel Alteration Parameter incorrectly, by evaluating not only the primary physical alteration, but also the impact the physical alteration is having on the assessment reach. The impact to the assessment reach resulting from physical alteration (i.e. scouring, head cuts, vertical banks, etc.) is accounted for in the Channel Condition Parameter.

Certain open water impacts may require compensation if necessary to protect state waters and fish and wildlife resources from significant impairment if they do not otherwise qualify for the open water impacts exclusion (9VAC25-210-60 6). The regulation prohibits DEQ from requiring compensation for permanent or temporary palustrine open water impacts, unless they are within karst topography and were formed by the natural dissolution of limestone. Palustrine open waters fall into the Cowardin classes of Unconsolidated Bottom or Aquatic Bed and include nonvegetated wetland areas with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) lacking active wave-formed or bedrock shoreline features; (3) water depth in the deepest part of basin less than 2.5 m (8.2 ft) at low water; and (4) salinity due to ocean-derived salts less than 0.5 ppt. A site visit should be made if a permit writer determines that compensation for POW impacts may be necessary.

Figure 1: Palustrine Open Water Subject to 9VAC25-210-116 C

Source: <http://www.fws.gov/wetlands/Documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States-2013.pdf>



Impacts within jurisdictional ditches containing open water or vegetated wetlands are calculated in acres. Compensation is determined using standard ratios for the applicable Cowardin class (open water ditches are subject to guidelines on open water impact compensation above). Impacts within channelized streams or ditches containing streams are calculated in linear feet, assessed using the USM, and compensated as streams.

Impacts for utility corridors are considered as follows:

- No compensation is required by any VWP permit type for impacts to wetlands that occur within a 20-foot total width as positioned over the centerline of the corridor (that is, 10 feet on either side of the center line of the corridor). Impacts to wetlands outside of this 20-foot width require compensation.
- Support and/or staging areas that are not maintained permanently are considered temporary impacts.

3.5.4 Compensation Phasing

In some circumstances, due to economic or other concerns, applicants may request to phase the purchase of mitigation bank credits or other portions of the required compensatory mitigation. Phasing should only be considered under an individual permit, never under a general permit. Phasing should also never allow impacts to occur in advance of the corresponding mitigation purchase. The permit writer should utilize the following guidelines to determine whether phasing is appropriate for a project. Variation from these guidelines should be discussed with the regional VWP program manager.

- Phases should not be allowed for projects with less than 3 acres of wetland impacts or less than 1,500 linear feet of stream impacts.

- The first and middle phases must have a minimum of 3 acres of wetland impacts or 1,500 linear feet of stream impacts. The last phase may have less than these amounts. Example: 7 acres total wetland impacts may have 3 phases of compensation: Phase I for 3 acres of impacts, Phase II for 3 acres of impacts, and Phase III for the remaining 1 acre of impacts.
- Phase boundaries should be logical and contiguous.
- As part of the application, the applicant must submit an impact map depicting the phase boundaries and a table containing a list of each impact within each phase, with applicable compensation for each impact, as well as total impacts and compensation for each phase.

The individual permit should include permit conditions that 1) reference the impact map and table depicting the phases, 2) set hard deadlines for completing compensation for each phase, based on the applicant's proposed schedule, and 3) require full purchase of credits for a phase if unauthorized impacts occur within that phase. In addition, the permit should require 10-day notice for each phase separately, and the construction-status update forms should require separate statuses for each phase. Example compensation special conditions include the following:

1. The permittee shall provide compensation through the purchase of X wetland mitigation bank credits and the purchase of X USM stream mitigation bank credits from a mitigation bank that meets the requirements of §62.1-44.15:23 A of the Code of Virginia and 9VAC25-210-116 E 1. Multiple banks may be used to fulfill compensation requirements.
2. The wetland and stream mitigation may be provided for Phase I and Phase II separately. Phase boundaries shall be those depicted on the exhibit entitled "Wetland Overall Impact Map" with the last revised date July 15, 2016 and drawn by Wetland Consultant, Inc. and received by DEQ on July 18, 2016.
 - a. Documentation that an approved mitigation bank has debited 6.34 wetland credits and 254 USM stream credits shall be submitted to and received by DEQ no later than July 1, 2017 or prior to initiating work in Phase I, whichever occurs *first*.
 - b. Documentation that an approved mitigation bank has debited 3.06 wetland credits and 340 USM stream credits shall be submitted to and received by DEQ no later than July 10, 2021 or prior to initiating work in Phase II, whichever occurs *first*.
3. If any work activities cause direct or indirect unauthorized surface water impacts within a Phase, the permittee shall purchase all required mitigation for that Phase and submit documentation of such purchase to DEQ within 30 days of the occurrence of such impacts.

Permit conditions such as those above enable the permit writer to enter specific mitigation due dates into CEDS as Compliance Events, in order to better track the project. Changes to the hard dates can be authorized as a minor modification under 9VAC25-210-180 E 2. Compensation totals for each phase should be entered as separate line items in the CEDS Compensation screen.

3.5.5 Conceptual Compensation Plan

As part of the application process, an applicant must provide a conceptual compensation plan. The purpose of the conceptual compensatory mitigation plan is to outline what the applicant intends to do to compensate for unavoidable impacts to surface waters. For mitigation bank or in-lieu fee program credit purchase, the plan must consist of the number of credits proposed for purchase and documentation from

the approved bank or in-lieu fee program sponsor of the availability of credits at the time of application. For permittee-responsible compensation, the applicant must provide the items listed in the regulation for each plan type. Remember that permittee-responsible compensatory mitigation projects must be held to the same standards as mitigation banks, in order to ensure that the agency meets the statutory requirements of no net loss of acreage and function.

3.6 Agency Coordination

In addition to reviewing the application for completeness, staff should initiate all coordination with applicable federal and state agencies as soon as possible after application receipt. Coordination ensures consistency between federal and state permit actions, that fish and wildlife resources are protected, and, in the case of individual permits, that public water supplies will not be affected. Although not required by statute or regulation, staff should strive to initiate coordination within 15 days of receipt of the application. VWP staff may solicit comments via e-mail and provide the Joint Permit Application material (when necessary) using the FTP site or through VITAShare.

Agency coordination requirements vary with the type of permit applied for, as well as whether or not the applicant requests coverage under the SPGP. Please see Chapters 4, 5, and 6 for specific agency coordination steps and requirements. Generally, if an agency does not respond within the timeframe provided by the statute or memorandum of understanding, staff may assume that the agency has no comments. If a project's boundaries (even those in uplands) or impact areas change, staff should coordinate interagency to determine if re-coordination is required.

For VWP Permits sought by Virginia users of the Potomac River, the Maryland Department of Environment must be furnished copies of the applications and as an "interested and affected agency" must be consulted in the same manner as are Virginia agencies.

The statute requires that DEQ consider comments from sister agencies regarding the effect of a project on fish and wildlife resources. General permits must not be used to authorize activities that will result in a take of state listed (or state proposed) threatened and endangered (T&E) species, or proposed or designated critical habitat. Comments regarding listed or proposed threatened or endangered species issues must be resolved before issuance of a VWP permit. In accordance with the 2007 Memorandum of Understanding between DEQ, DCR and DGIF, DEQ will consider comments regarding migratory birds, natural area preserves, Stream Conservation Units (SCUs), stormwater or other issues outside of the direct impact areas. DEQ is not required, however, to incorporate these comments into the permit. It is best practice for permit writers to share these recommendations with the applicant for general information purposes. A quick-reference tool for coordination with DGIF (*VaFWIS Coordination Recommendations by Species Status*) is located in the "References JPA Review" subfolder of Chapter 3.

3.7 Site Visits

Ideally, a site visit will be conducted for all new permit applications so that the permit writers may familiarize themselves with the site, investigate areas of concern as identified during the initial permit-application review process, and review wetland functional assessments and USM scores as appropriate. Permit writers will need to document the site visit using photographs and field notes. A site visit report should be completed after the site visit in order to document findings for the permit file, and pertinent photographs should be incorporated into the report to document significant findings.

If necessary, a copy of the report should be provided to the applicant in order to allow them to respond to any concerns noted during the site visit. Findings that will warrant further coordination with the applicant are inconsistencies with the permit application with what was observed in the field, such as identification of undocumented or misclassified surface water resources. In such cases, further coordination with the applicant will be necessary until these issues are resolved to the satisfaction of the permit writer.

However, for some projects, a site visit will not provide any additional information beyond what the applicant has provided. During periods of heavy workload, omitting some site visits will free up time for other priorities. However, projects may have specific characteristics that justify a site inspection so VWP staff should consider omitting site visits on a case-by-case basis. Project characteristics, environmental sensitivity, and complexity should be considered when prioritizing projects.

In lieu of site visits, VWP staff may use recent aerial photos, and topographic maps, along with photographs provided by the applicant, to assess the onsite conditions. Online resources may provide street level photographs of the site.

3.8 Permit Fees

Permit application fees are required for a complete application. The fees are set by regulations that are separate from the VWP Permit Program Regulations. The fee schedule for individual permit applications may be found at 9VAC25-20-110 C [and 9VAC25-20-120 3](#), and the fee schedule for general permit applications may be found at 9VAC25-20-130.

3.8.1 Calculating Fees

To determine the appropriate application fee, the permit writer will need to determine the total acreage of impacts (permanent, conversion and temporary) proposed to all surface waters, including wetlands, non-excluded open water, and stream channels. Stream channel acreage shall be determined using the linear footage of impact and mean width, which must be submitted as part of the permit application. The permit fee should be based on the impact quantities that are proposed in the original application, not necessarily the final authorized impact amount; however, if staff recognize upon initial application review that impact quantities are likely to change, it may be best to wait to request the permit fee until impacts are appropriately quantified. Other fees are applicable to surface water withdrawal projects (9VAC25-20-110 C).

Example: A proposed project requires a new permit for impacts to 2.12 acres of wetlands and 3,105 linear feet of stream (0.60 acres). The permit fee is:

2.12 acres wetlands + 0.60 acres stream = 2.72 acres impact for fee calculation

2.72 acres impact = 2 acres (base fee) + 8 tenths of an acre (or portion thereof). *Remember, any portion of a tenth of an acre is rounded up, to the next highest tenth, for fee purposes. Therefore, 0.72 acres is rounded to 0.8.*

Fee = \$2,400 base fee + (\$220 x 8) = \$4,160

Example: A proposed project requires a new general permit authorization for impacts to 1.54 acres of wetlands and 292 linear feet of streambed (0.06 acres). The permit fee is:

1.55 acres wetlands + 0.06 acres stream bed = 1.61 acres impact for fee calculation

1.61 acres impact = 1 acres (base fee) + 7 tenths of an acre (or portion thereof). *Remember, any portion of a tenth of an acre is rounded up, to the next highest tenth, for fee purposes. Therefore, 0.61 acres is rounded to 0.7.*

Fee = \$1,200 base fee + (\$220 x 7) = \$2,160

In certain circumstances, determining the amount of acreage to use for fee calculations is not straightforward:

Table 6. Permit Fee Scenarios

| Scenario | Fee Approach |
|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Projects with surface water impacts less than 0.10 acre but stream impacts greater than 300 LF | \$0 |
| Projects which have cumulative impacts from previous permitting actions | Fee is based only on acreage of impacts that are authorized by the current permit action |
| Projects that require a major modification of an individual permit | Fee is \$1,200 plus additional cost based on acreage of <u>new</u> impacts only |
| Projects having individual permits where the activities need to continue beyond the permit expiration date | Fee is based on acreage of all impacts, regardless of completion status |
| Projects that require new coverage under a general permit due to changes in impacts that exceed Notice of Planned Change thresholds | Fee is based on acreage of impacts authorized by the new permit action |

DEQ officially requests the appropriate permit or modification application fee using the Permit Application Fee Form (fee form), which may be attached to the Additional Info letter if necessary. The most recent version of the fee form can be obtained at <https://www.deq.virginia.gov/Programs/Water/PermittingCompliance.aspx>.

Complete all sections of the fee form except the IRS Employer Identification Number (EIN) and the section marked 'For DEQ Use Only'. Also, **add the permit writer's name and phone number in the space to the right of the 'amount' field on the fee form so that questions can be directed accordingly**. This will ensure timely processing by DEQ's financial office and aid in the electronic tracking of payments in CEDS.

The applicant is responsible for completing the IRS EIN and submitting the fee form and payment per the instructions on the fee form.

Should an applicant return the fee form and/or payment to VWP staff rather than to DEQ Receipts Control, immediately provide the form and the check to the office manager for the proper logging and mailing procedures. Staff should verify with OFM staff if record of payment is not observed in CEDS.

3.8.2 Permit Fee Refunds

DEQ Guidance Memorandum Number 06-2011 outlines the situations in which a refund of the permit application fee is appropriate. Generally, refunds should only be initiated when the general permit determination changes to an NPR determination, or when a mistake is made in determining the appropriate fee. It is the Regional VWP Manager's decision to approve or deny a refund request by an applicant who has avoided and minimized impacts in order to change the required fee when VWP staff has spent time reviewing the application. Refunds may also be processed if the application is withdrawn within 90 days of receipt and has not been deemed administratively complete.

Refund requests may only be initiated for permit fees received within the fiscal year. Permit fee refund requests for fees received in June must be made within 90 days of receipt.

In those cases where a refund is appropriate, the refund is initiated by completing a Permit Fee Refund Request Form, then submitting the form and a copy of all applicable payment information to the OFM-AR manager at Central Office. The refund request form is included as Attachment B to Guidance Memorandum Number 06-2011 and can be obtained internally from DEQNet at: http://deqnet/docs/water/Guidance_Memoranda/2006_Guidance_Memos/GM06-2011.Water_Permit_Fee_Program_Procedures.pdf

When completing the form, check the appropriate reason for requesting the refund, such as 'an incorrect fee amount was determined during the permit application review'. Attach a copy of the permit-application fee form, which shows the payment amount and date of deposit. Submit the request form and attachments to the Office of Wetlands and Water Protection for approval.

The request will be reviewed and approved or denied by OFM-AR staff. Denied requests will be returned to the requesting office.

When a general permit determination is elevated to an individual permit determination, such as when there are significant threatened and endangered species issues, the general permit application fee may be applied toward the cost of the individual permit application fee. DEQ Receipts Control will need a copy of the already-completed VWP general permit fee form, a check for the cost difference, and a brief explanation of the circumstances.

3.9 Permit Files

All permit files should be uploaded to ECM in accordance with the most current ECM Manual no later than 7 days after a permit decision is made.

3.9.2 GIS

The latitude and longitude of the project center should be added to the permit record in CEDS when the permit application is received. The project boundary shapefile is typically requested by the appointed VWP staff on a quarterly basis for incorporation into VEGIS.

3.9.3 CEDS

Permit application and other applicable data should be kept up to date in CEDS at least weekly.

APPENDIX A - PROPERTY ACCESS AGREEMENT

DEQ Regional Letterhead

Virginia Water Protection Permit Program Property-Access Agreement

[PROPERTY OWNER NAME(S) – must include ALL] (“Owner”) who own[s] the property located at [ADDRESS and/or DEED BOOK INFORMATION and/or TAX PARCEL #] (“Property”) hereby authorizes the Department of Environmental Quality, its employees, agents, and contractors (“Authorized Parties”) the right of entry to the Property to conduct inspections necessary to evaluate the application for and ensure compliance with [PERMIT NUMBER] (“VWP Permit”).

For the purpose of this section, the time for inspection shall be deemed reasonable during regular business hours. Nothing contained herein shall make an inspection time unreasonable during an emergency.

Inspections may include but are not limited to the following activities:

1. Enter upon the property, and have access to, inspect and copy any records that required as part of the VWP permit;
2. Inspect any facilities, operations or practices (including monitoring and control equipment) regulated or required under the VWP permit; and
3. Sample or monitor any substance, parameter, or activity for the purpose of ensuring compliance with the VWP permit or as otherwise required by law.

The Owner understands that access to the Property is a requirement pursuant to 9VAC25-210-90 and the VWP Permit. The DEQ may enforce the provisions of this agreement utilizing all applicable procedures and authorities under Va. Code §§ 62.1-44.15 and 10.1-1186.

| Property Owner Name | Property Owner Signature | Title | Date |
|---------------------|--------------------------|-------|------|
|---------------------|--------------------------|-------|------|

(Print)

[Include Title for owners who are not individual persons.]

[Insert additional signature lines for each individual owner listed on property record.]

APPENDIX B – SPECIAL APPLICATION SITUATIONS

B.1 VDOT Projects

The Virginia Department of Transportation (VDOT) and DEQ have entered into a Memorandum of Agreement (dated March 8, 2017) which details how application and permitting processes are carried out for both agencies. VDOT projects have traditionally been processed through DEQ's Central Office; however, now that many transportation-related projects are occurring through third-party applicants, VWP programs in regional offices are also processing transportation-related projects. Central Office VDOT permit staff are available to assist regional offices as needed when permitting falls to that staff.

VDOT has several mechanisms by which applications may be submitted, and there are specific application informational requirements listed in the VWP Permit Program regulations. VDOT uses an Interagency Coordination Meeting (IACM Meeting) to discuss and provide application information to DEQ permit writers and other agency staff.

Of special note is the 15-day review period for a complete application. The time period is 10 days for applications under WP3 for VDOT-sponsored projects only (not public or private applicants doing VDOT or other linear transportation projects). Also, note that there are additional different timelines associated with these same projects scattered through the VWP regulations.

A separate manual or permit reference specific to VDOT procedures has not been developed to date.

B.2 Solid Waste Management Facilities

Solid Waste Disposal Facilities must have siting (Part A) approval in order to submit a Design Report (Part B) application and obtain a Solid Waste Permit. In the Part A application, the applicant must demonstrate how wetlands will be avoided and protected in the siting of the landfill or its supporting facilities. If wetlands cannot be avoided, then the applicant must minimize the impact and mitigate the taking of the wetlands. The VWP permit satisfies this requirement.

Va. Code [§ 10.1-1408.5](#) of the Solid Waste Management Act contains special provisions regarding wetland impacts needed for new municipal solid waste landfills or expansion of existing municipal solid waste landfills. The provisions apply to landfills that will impact more than 2 acres of nontidal wetlands, or any tidal wetlands. Specifically, the statute states that Director may issue a solid waste permit for the expansion of a municipal solid waste landfill located in a wetland only if the following conditions are met:

- i. the proposed landfill site is at least 100 feet from any surface water body and at least one mile from any tidal wetland;
- ii. the Director determines, based upon the existing condition of the wetland system, including, but not limited to, sedimentation, toxicity, acidification, nitrification, vegetation, and proximity to existing permitted waste disposal areas, roads or other structures, that the construction or restoration of a wetland system in another location in accordance with a Virginia Water Protection Permit approved by the State Water Control Board would provide higher quality wetlands; and
- iii. the permit requires a **minimum two-to-one wetlands mitigation ratio**.

When a VWP permit writer receives a VWP permit application or a request for a VWP pre-application meeting, and the development activity at the site is a new or existing landfill, or could be related to a

landfill activity, (i.e., borrow area, access roads, other activities within 1,000 feet of a landfill), VWP staff should:

1. If not provided in the VWP permit application, the VWP permit writer must request certification from the applicant whether the project purpose involves a new municipal solid waste landfill or expansion of an existing municipal solid waste landfill.
2. Notify, in writing, the Waste Permitting Office Director of the scope of the project and request coordination as needed, and existing technical guidance. Waste Permit Staff will assist in determining if such VWP activities are associated with a landfill and if the activity satisfies the Part A siting criteria. This determination will be confirmed after the completeness review of the water permit application and may be confirmed during the completeness review if time allows. The primary responsibility for the initial determination of VWP applicability with a landfill is with the applicant.
3. If the applicant certifies that the activity is not associated with a landfill or the Waste Permit Staff determine that the activity does not require siting review, the VWP application may be processed in accordance with standard water permit application processing procedures.
4. If the application specifies that impacts are associated with a landfill, the VWP permit writer must **notify the applicant in writing** as soon as possible during the completeness review, that the proposed activity may involve landfill siting approval limitations on wetlands and that **no further action can be taken** by the VWP Program (per 9VAC25-210-50 B 1) until the Waste Permit Program determines what those wetland limitations are in accordance with 9VAC20-81 *et seq.* The VWP permit writer should copy the review letter and application to the Waste Permitting Office Director and the Regional Waste Program Manager.
5. Once both applications are submitted, coordination should be conducted to ensure that both regulations are satisfied, and to ensure that the permit conditions of the two permits are consistent.

B.3 Surface Water Withdrawal Projects

The Code of Virginia (§ 62.1-44.15:22) and VWP Regulations (9VAC25-210-50) include provisions regulating surface water withdrawals and the preservation of instream flows. As of July 1, 2015, the OWS became the central location for all surface water withdrawal permitting. The OWS is now responsible for processing all new applications and managing existing VWP permits statewide that involve surface water withdrawals. OWS also has responsibilities for groundwater characterization, permitting groundwater withdrawals, and statewide water supply planning.

Surface water withdrawals are authorized using VWP permits, which may include limits to the volume and rate of water withdrawn as a part of the permitted activity, and conditions necessary to protect beneficial uses. Examples of surface water withdrawal projects include, but are not limited to, reservoirs, power plants, public water supply and industrial intakes, and irrigation withdrawals. Additionally, projects requiring a Federal Energy Regulatory Commission (FERC) license or relicense associated with a surface water withdrawal activities, such as hydroelectric facilities that alter instream flow, may also be subject to the VWP regulations.

The VWP Surface Water Withdrawal regulations are consolidated into Part V of the VWP Regulation from 9VAC25-210-300 to 9VAC25-210-390. OWS is developing a Water Withdrawal Permitting Manual that will guide staff processing VWP permit applications for surface water withdrawals. The OWS manual will cover any additional steps and procedures required to process and issue VWP permits including water withdrawals not covered in this manual.

When a regional VWP permit writer receives a VWP permit application, pre-application meeting request or inquiry related to a water withdrawal activity, VWP staff should:

1. Transfer new applications, modification requests, or inquiries clearly identified as water withdrawal activities to OWS as soon as possible. Applications or inquiries regarding permitting of surface water withdrawals can be directed to the Office of Water Supply at DEQ's Central Office.
2. If the connection with a water withdrawal activity is unclear, then notify OWS of the scope of the project and request coordination as needed. OWS Staff will assist with determining the activity is associated with a water withdrawal and transferred to OWS for further evaluation.
3. OWS will manage citizen concerns and complaints about surface water withdrawals. OWS will be the lead in complaint investigations. However, OWS may request that RO provide an initial field presence/investigation to facilitate a timely response and efficient use of staff time. This is most likely to occur when the distance from central office is too great to conduct a timely inspection.

B.4 Natural Gas Projects

During the 2018 Virginia General Assembly, Senate Bill 950 (March 30, 2018) amended the Code of Virginia regarding the permitting of certain interstate natural gas pipelines. Projects meeting the criteria detailed in [§ 62.1-44.15:20 D](#) must receive a VWP individual permit and ([§ 62.1-44.15:21 D, E, and I](#)) and Section 401 Water Quality Certification pursuant to the new **Article 2.6** ([§§ 62.1-44.15:80 through -44.15:84](#)). Applications for natural gas pipeline projects that *do not* meet the specific criteria in Code should be processed following current DEQ procedures and policy for other linear utility projects.

At the August 2018 State Water Control Board meeting, several VWP Permit Program Regulations were revised to reflect these statutory amendments (9VAC25-210, 9VAC25-670, and 9VAC25-690). See the reference materials in this Appendix for the language of statutory amendments, or refer to the Code of Virginia website.

Highlights of the Code amendments include:

- For *natural gas transmission pipeline greater than 36 inches inside diameter pursuant to a certificate of public convenience and necessity under § 7c of the federal Natural Gas Act (15 U.S.C. § 717f(c))*, the §401 certification consists of two actions by DEQ.
- A VWP general permit cannot be developed for use on a *natural gas transmission pipeline greater than 36 inches inside diameter pursuant to a certificate of public convenience and necessity under § 7c of the federal Natural Gas Act (15 U.S.C. § 717f(c))*.

- DEQ staff have one year⁹ to make a case decision *for an individual permit application related to an application to the Federal Energy Regulatory Commission for a certificate of public convenience and necessity pursuant to § 7c of the federal Natural Gas Act (15 U.S.C. § 717f(c)) for construction of any natural gas transmission pipeline greater than 36 inches inside diameter.*
- Only one IP has to be issued, but *each wetland and stream crossing shall be considered as a single and complete project.*
- *Individual review of each proposed water body crossing with an upstream drainage area of five square miles or greater shall be performed.*
- The IP special conditions will specifically state that *all pipelines shall be constructed in a manner that minimizes temporary and permanent impacts to state waters and protects water quality to the maximum extent practicable, including by the use of applicable best management practices that the Board determines to be necessary to protect water quality.*
- DEQ can charge the applicant(s) a fee for the work involved with these case decisions in addition to any applicable permit application fees pursuant to 9VAC25-20 *et seq.*
- New rules for processing applications submitted on or after July 1, 2018 and the issuance of permits under the Code amendments:

Article 2.6. Additional Upland Conditions for Water Quality Certification

[§ 62.1-44.15:80](#) Findings and purpose

[§ 62.1-44.15:81](#) Application and preparation of draft certification conditions

[§ 62.1-44.15:82](#) Public notice of draft certification conditions

[§ 62.1-44.15:83](#) Requests for public hearing, hearings, and final decisions procedures

[§ 62.1-44.15:84](#) Requests for modification or revocation; public notice

In May 2017, Guidance Memorandum GM17-2003 was issued to detail the process for §401 certification of upland activities in conjunction with two large natural gas projects, Mountain Valley Pipeline and Atlantic Coast Pipeline. GM17-2003 will be used as the basis for future permit processing as necessary, but it and/or this manual may be subject to revision as DEQ implements the statutory amendments.

⁹ One year from FERC determining the license application is complete. JPA review is not necessarily done concurrently with the FERC process.

APPENDIX C – SECONDARY IMPACTS

C.1 Installation of Ditches or Stormwater Conveyance Systems

Pending

C.2 Homeowners Activities

Pending

C.3 Homeowner Association Activities

Homeowner Association activities in surface waters remaining within open space areas within a development (e.g., passive recreation; vegetation alteration; subsequent deeding over of portions to individual homeowners).

C.4 Fragmentation of Wetland or Streams

Pending

C.5 Erosion of Steep Slopes in Areas with Highly Erodible Soils

Pending

C.6 Filling, Grading, or Other Activities Adjacent to Surface Waters

Pending

C.7 Creating Overly Steep Slopes

Installation of fill or excavation resulting in angles that are extremely difficult to stabilize, greatly increasing the likelihood of sedimentation impacts.

APPENDIX D – GUIDELINES FOR ASSESSING IMPACTS IN SPECIAL SITUATIONS

This Section addresses specific permitting scenarios that based on the nature of the activity and associated impacts, warrant special consideration. The below subsections address these specific permitting scenarios with the aim of providing VWPP Permit Writers clear guidance as to how to permit such activities, and how to quantify and qualitatively assess the nature of proposed impacts. This Section is meant to be guide, and thus project-specific considerations and permitting determinations are necessary, as is working closely with supervisors and technical assistance staff to ensure appropriate permitting outcomes.

D.1 Stormwater Management Facilities

Quantifying primary and secondary surface water impacts resulting from the construction of stormwater management facilities (“SWM facilities” or “SW BMP(s)”) often requires special consideration.

D.1.1 Primary Impacts due to Construction of SWM Facilities in Surface Waters

When evaluating SWM facilities proposed in surface waters, staff must determine to what extent surface waters within the inundation zone of the SWM facility should be considered impacted.

1. **Wet Ponds:** Surface waters located within the permanent pool, 10-year design elevation above normal pool elevation unless locally more stringent (i.e. designed to treat 25 or 50 year storm), and all maintenance areas, including but not limited to access areas and outlet structures, will be considered impacted.
2. **Extended Enhanced Retention/Detention Ponds:** The definition of permanent flooding does not include back flooding resulting from the construction of an extended enhanced detention facility (9VAC25-210-10), unless that construction is not done in accordance with DEQ standards [the 2013 Acts of Assembly transferred the stormwater management program from DCR to DEQ effective July 1, 2013]. Flooding – regardless of the definition – is not the only result of building these facilities. Converting surface waters to a stormwater treatment facility is by design an impact to the chemical and biological properties of the surface waters. At the time of the conversion of the surface water to a stormwater management facility, the original, primary functions of the surface water are shifted to treatment of stormwater quality and quantity. The loss of surface water function(s) is an impact under State Water Control Law. Furthermore, the surface water will be permanently maintained as a stormwater treatment facility, which oftentimes includes mowing, tree cutting, stabilization (such as riprap), grading, filling, dredging or the placement of structures in surface waters. Therefore, impacts will occur to surface waters located within the defined treatment area, the maintenance area, including but not limited to outlet structures; the 10-year design elevation above normal pool elevation (unless locally more stringent i.e. designed to treat 25 or 50 year storm); and all maintenance access areas.
3. **Non-quality Detention Facilities:** Surface waters located within the defined detention volume and maintenance areas, including but not limited to the area located within the elevation of design detention storm event, outlet structures and all maintenance access areas will be considered impacted.
4. **Permitting Implications:**

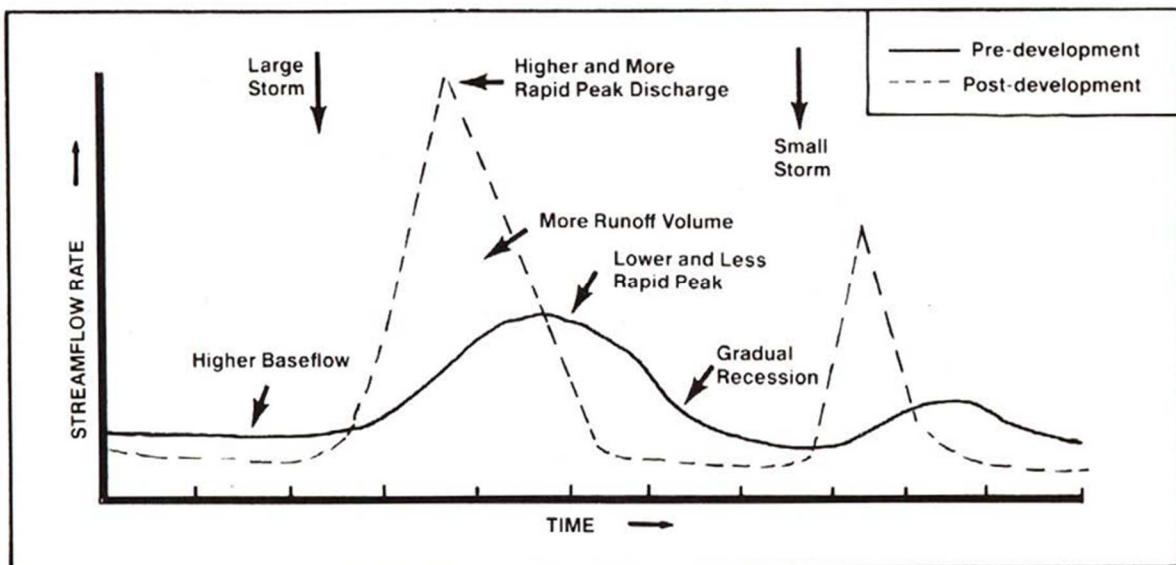
- a. IPs - During application review staff should require submittal of a maintenance plan that delineates the geographic extent of all areas designated for maintenance, to include but not limited to outlet structures, 10-year design elevation above normal pool elevation (unless locally more stringent), and all maintenance access areas. If the VSMP approval process results in changes to the defined maintenance area and associated impacts to surface waters, coverage will require modification. An Individual Permit can also be conditioned to require receipt of final maintenance agreement as approved by VSMP authority within 30 days following VSMP approval.
- b. GPs - During application review staff should require submittal of maintenance plan that delineates the geographic extent of all areas designated for maintenance, to include but not limited to outlet structures, 10-year design elevation above normal pool elevation (unless locally more stringent), and all maintenance access areas. If the VSMP approval process results in changes to the defined maintenance area and associated impacts to surface waters, and we somehow find out about it, coverage will require modification.

D.1.2 Potential Secondary Impacts due to Construction of SWM Facilities

Development of SWM facilities can have an impact on surface waters beyond the direct fill, dredge, or alteration of those waters. In many development projects, stormwater infrastructure has significant potential to cause secondary impacts because of the nature of those structures to manage, redirect or otherwise alter the hydrologic sources and characteristics of surface waters.

The Virginia Stormwater Management Program (VSMP) addresses the quantity and quality of stormwater discharged after construction has occurred. As impervious cover increases, the rate and volume of stormwater discharged from a site during storm events increases, as does the amount of pollutants, such as nutrients and sediments, carried within the stormwater.

Figure 2: Pre- and Post-Development Flow Rates (Source: VA DEQ Stormwater Training Program, Training Module 2)



The Stormwater Management (SWM) Program requires that SWM facilities be installed to 1) control storm-event runoff volume and peak discharge rate to levels that will protect downstream channels and prevent downstream flooding, and 2) reduce the concentration of pollutants discharged from a site to surface waters. The program seeks to replicate, as nearly as practicable, the existing pre-development site runoff rate and flow characteristics.

Although the VSMP regulations set methodologies to determine the maximum allowable volume and discharge rate needed to protect downstream channels, the VSMP regulations do not provide methodologies to calculate, or require consideration of, the *minimum* flow rate necessary to sustain downstream hydrology and ecological communities. Furthermore, in seeking to ensure downstream channels are protected and reduce flooding as much as possible, stormwater is oftentimes “over-managed”, by reducing or eliminating flows to smaller channels or wetlands on a site, in favor of rerouting storm flows through a few larger stormwater management (SWM) facilities. To evaluate potential impacts, staff should ensure that all SWM facilities and routing is shown on project drawings. An outfall of some sort should be shown at every remaining tributary, unless the tributary receives hydrology from another (upstream) source, which is documented through a water budget or flow calculations, or will be otherwise be considered impacted. Even if an outfall is present, staff should request pre- and post-construction drainage areas and consider not just the size of drainage areas, but also any reduction in pre- and post-construction hydrology. A reduction in the drainage area will oftentimes reduce hydrology, but the reduction is not always proportional. VWP staff should coordinate project-specific questions with DEQ stormwater staff.

Installation of stormwater ponds and conveyance channels adjacent to surface waters can also have a secondary impact by influencing the groundwater supporting those resources. If the pond or conveyance channel is proposed to be installed below the elevation of adjacent surface water, it may intersect with the zone of influence and act as a drain on the groundwater supporting adjacent surface waters. This influence can be mitigated by lining the structures with a layer of impervious material.

D.1.3 Other Considerations

Applicants and their consultants may use water quality treatments as justification for project layout or impacts to surface waters. Water quality can be mitigated offsite and should rarely be used to justify surface water impacts. Water quantity, on the other hand, must be managed onsite and fewer options may exist address that portion of the project. That said, stormwater management facilities come in a variety of sizes, and the SWM program gives priority to the reduction of runoff, which will in turn reduce the need for water quantity treatment. Low-impact development (LID), vegetated filter strips, and bioretention cells (among others) are all other options that are available to address stormwater quality and quantity on a more localized, micro-drainage area basis; however, they will not always be appropriate or adequate to eliminate the need for stormwater ponds. These options should be evaluated if the project proposes significant impacts associated with the construction of stormwater infrastructure.

D.2 Culverts

Culverts generally refer to structures, like pipes and boxes, which are placed in a stream to convey flow under another feature, such as a roadway. Culverts placed in streams for crossings, and covered under VWP permits, must be countersunk, unless the culvert is a bottomless structure (see Section 100, Part I B 2 of the General Permit regulations or Part I F 5 of the individual permit special conditions template). When reviewing any permit applications, staff should request cross-sections and details of the culvert

construction. Such information should verify that the culverts are present, are designed to be countersunk to the correct depth and are designed to maintain the pre-construction hydrology of downstream surface waters, as opposed to a drop inlet or other conveyance that re-directs the hydrology into a stormwater management system, etc. Details of construction may also indicate whether secondary impacts (temporary or permanent) to the stream channel or adjacent wetlands are likely. The application and construction plans should demonstrate the following to ensure that impacts are minimized:

- The culvert must be countersunk at both the inlet and outlet to the correct depth for the structure's size.
- The culvert should be designed with enough hydraulic capacity to allow for three or six inches of sediment deposition in the pipe bottom?
- The culvert should not impound water on the upstream side, nor should it redirect hydrology away from (and therefore impact) downstream surface waters, unless impacts associated with the hydrologic change are accounted for and authorized by the permit application.
- The material under the outlet or inlet of the culvert must not enable erosion of the channel at either end of the culvert.
- The length and depth of the riprap at the outlet or inlet of the culvert must be the minimum necessary to provide appropriate stability and erosion control.
- Aquatic organisms must be able to move through the crossing.

Permit writers may request the following information to facilitate the review of crossings that use culverts.

- Description provided of the materials to be used, the method of construction (including the use of cofferdams), the sequence of construction events, and if bedrock conditions may be encountered;
- Cross-sections and profile plans of the culvert crossings including wing walls and rip rap;
- Spot elevations of the stream bottom within the thalweg at the beginning and end of the pipe or culvert, extending to a minimum of 10 feet beyond the limits of proposed impact (including riprap aprons); and
- Verification that hydraulic studies have been performed that account for sediment within the culvert and any reduced hydraulic capacity due to countersinking.

In addition, when drafting general permits (including reporting only general permits) with stream crossings staff should add the following condition to the cover page: "When countersinking culverts, permittees must install the structure and any riprap or other ancillary features to ensure reestablishment of a surface water channel within 15 days post construction and ensure that the movement of aquatic organisms is not impeded. The structures shall be placed so as to maintain the pre-construction hydrologic regime. Surface water depth within the impact area shall be consistent with depths upstream and downstream of the impact area."

The condition in the regulation does not discuss a specific timeline in which this must be done or the possible need for the addition of finer materials to choke the larger stone and/or placement of riprap to allow for a low flow channel. However, the condition does align the VWP permit with one of the U.S. Army

Corps of Engineers' regional conditions applicable to many of its 2017 Nationwide Permits (3, 7, 12, 14, 17, 18, 21, 23, 25, 27, 29, 32, 33, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 49, 50, 51, and 52).

Chapter 8.3.7 of VDOT Drainage Manual provides specifications for culvert countersinking relative to DEQ and the Corps requirements. Additional sections of this Chapter also provide specifications for installation of aprons and other ancillary structures. (See <http://www.virginiadot.org/business/locdes/hydra-drainage-manual.asp>)

D.3 Temporary Impacts

Impacts to surface waters are temporary when the surface water will be “returned to preconstruction elevations and contours such that wetland acreage and surface water functions will be restored” (9VAC25-210-10). This definition of temporary impact does not require replanting or restoration of the preconstruction vegetative community, but general and individual permits require replanting of temporary wetland impact areas by planting or seeding with the appropriate cover type as part of the minimization of the impact required by 9VAC25-210-80 B 1 g.

Under a general permit, DEQ is limited to the second year post-disturbance to determine if temporary impact areas are progressing appropriately toward full vegetative restoration. Section 100, Part I B 11 of the VWP general permits (9VAC25-660, 9VAC25-670, 9VAC25-680, and 9VAC25-690) states, “...All temporarily disturbed wetland areas shall be restored to preexisting conditions within 30 days of completing work at each respective temporary impact area, which shall include reestablishing preconstruction elevations and contours with topsoil from the impact area where practicable and planting or seeding with appropriate wetland vegetation according to cover type (i.e., emergent, scrub-shrub, or forested). The permittee shall take all appropriate measures to promote and maintain revegetation of temporarily disturbed wetland areas with wetland vegetation through the second year post-disturbance...” This permit condition does not require that the temporary impact area be fully restored to pre-construction conditions prior to permit expiration. It only requires planting (for PFO impacts) or seeding (for other vegetative communities) and restoring preconstruction contours.

In evaluating proposed temporary forested wetland impacts, Staff should note size of the impact area, the vegetative community type and its functions and values, and inquire about restoration timelines. These details will assist the permit writer in determining the appropriate permit conditions for a given temporary impact area. Prior to permit issuance, permit writers should confirm that the temporary impacts will be replanted with native wetland species at a minimum density of 400 stems per acre. Permit writers should also confirm that the species to be planted will be FAC, FACW, or OBL species located within the temporary impact area prior to clearing.

All temporarily disturbed wetland areas shall be restored to preexisting conditions, which shall include reestablishing preconstruction elevations and contours with topsoil from the impact area where practicable and planting or seeding with appropriate wetland vegetation according to cover type (i.e., emergent, scrub-shrub, or forested). For i) large (>1 ac) proposed temporary forested wetland impacts; ii) impacts to forested wetland communities that provide unique or high-value functions that cannot be readily replaced; or iii) temporary impacts that will remain in place for a long period of time (more than 6 months), the temporal loss of functions in a vegetated community affected by a temporary impact shall be compensated to the satisfaction of DEQ. Such compensatory mitigation *should not* be used to justify converting a temporary impact to a permanent impact during the application process. If an impact need

only be temporary to accomplish the project purpose, staff may not authorize it as a permanent impact [as it would not be the least damaging practicable alternative](#). If compensatory mitigation is not ecologically preferable, staff may require long-term monitoring to ensure successful restoration. Such monitoring may only be included in an individual permit, because the general permit regulation limits DEQ's oversight to the criteria in Part I B 11.

If requiring long-term monitoring for temporary impacts under an individual permit, the below long-term monitoring and defined success criteria serve as a guide. Monitoring and success criteria may be tailored to meet project- and site-specific needs.

- **Replanting** – Density of at least 400 stems/acre, with composition based on surrounding/adjacent forest coverage to compromise 50% of proposed plantings, with an additional 50% comprised of early successional species with the propensity to rapidly accumulate biomass, form a tree stratum, and provide some measure of canopy closure to facilitate later-stage successional tree growth.
- **Monitoring** – Seven (7) years of monitoring, with final release contingent on all defined success criteria being met by the 7th year of monitoring.
- **Success Criteria** – Establish vegetative plots or transects at a minimum density of four (4) per acre selected by randomized quadrant placement, and measures.
- **Stem Counts** – At least 400 stems/acre. Volunteers may be included. Stem counts are to include identification of species, vegetative indicator status, and computation stating FAC or wetter dominance. Tree heights to be included in the stem count are to be 12" by year one, 18" by year two, 24" by year three, and 36" by year 7.
- **Herbaceous Coverage** – Assess a 3 ft x 3 ft plot or area equivalent. Eighty percent coverage by year one, 95% coverage by year two of FAC or wetter dominance.
- **Invasive Species** – Aerial coverage of invasive species may not exceed 5% on any given monitoring year. To include identification of invasive species and percent coverage attributed to each invasive species, with total coverage summed.
- **Reporting** – Annual reporting with the January Construction Status Update Form, to include above measures of success, photo documentation representing four cardinal directions in each temporary impact restoration area, and if necessary, a corrective action plan to bring the site back into compliance with the defined success criteria.

D.4 Boardwalk Impacts

The use of boardwalks within wetlands is a means by which to provide pedestrian access to these unique systems while avoiding the use of impervious surfaces, grade alterations, or other such intensive alterations to the system's landscape and associated hydrology. However, the use of boardwalks can impact wetlands.

D.4.1 Boardwalks within PFO

If a boardwalk is within PFO, and is proposing any tree cutting to facilitate boardwalk installation and/or permanent maintenance activities, the footprint of the boardwalk is to be considered a conversion impact from PFO to palustrine emergent wetland (PEM), and thus compensatory mitigation at a 1:1 ratio is

required. The total area of the pilings is considered fill and compensatory mitigation is required at a 2:1 ratio.

If the boardwalk avoids tree removal within the PFO, impacts may still occur due to shading, as defined below.

D.4.2 Shading Impacts

When assessing project's use of boardwalks, permit writers will require specific information regarding the height and width of the boardwalk.

In instances where the boardwalk has a height to width ratio less than 0.8, the boardwalk will be considered to have a permanent impact on the wetland's functionality, and thus require compensatory mitigation at a 0.5:1 ratio. The reduced compensatory mitigation ratio is to account for the loss of vegetative functionality, but recognize the maintenance of wetland hydrology and relatively undisturbed hydric soils.

The quantity of impact from shading is determined utilizing the following equation:

$$I = L_b(W_b - 1.25H_b)$$

if $I < 0$, then assume $I = 0$

Where:

I = wetland impact (sq. ft)

L_b = bridge length over wetlands (ft)

W_b = bridge width (ft)

H_b = average bridge height over wetlands (ft)

D.5 Beaver Dam Removals

In accordance with 9VAC25-60 6, the removal of a beaver dam may constitute an open water impact with no detrimental effect, and thus be excluded from requiring a VWP Permit. Permit writers should utilize the Open Water Exclusion Checklist to determine the applicability of the exclusion and determine if any component of the proposed beaver dam removal may require permitting, such as temporary impacts to wetlands for construction access, or the dewatering of fringe wetlands that would result from the dam structure's removal. Any temporary impacts facilitating beaver dam removal or impacts to established wetlands due to changes in hydrology may require a VWP Permit.

In addition, if the backflooding from the beaver dam is affecting serviceable structures, the beaver dam removal may be excluded under 9VAC25-210-60 5.

D.6 Fences within Surface Waters

The placement of fences across streams can serve as an impediment to stream flows by creating the propensity for large woody debris and other stream-transported materials to accumulate at the location of the fence crossing and dam the watercourse. Thus, when fences are proposed to cross streams, permit writers should assess the nature of the crossing and determine the potential for stream impacts.

Applicants are to provide cross-sections of proposed fence crossings to ensure footers are outside of OHW, and that fence height across the channel is sufficient as to not intercept normative elevated flows (10-year storms). In instances where fence infrastructure is within stream channels, this would constitute an impact to the stream channel, and thus require compensatory mitigation utilizing the USM, with the length of impact derived from the affected bank width. Furthermore, should assessment of the cross-sections demonstrate the potential for a fence to serve as an impediment to stream flow, permit writers are to work with applicants to modify fence designs, re-orientate crossings, or develop alternatives that still achieve the applicant's desired outcome.

Fences within wetlands typically do not constitute an impact, given the incidental nature of fill associated with fence posts. However, permit writers should still assess the practicability of avoiding or minimizing placement of fences within wetlands via design alternatives, and/or placement within uplands. Furthermore, fences' should be assessed on an individual basis, to ensure that proposed designs and fence type are consistent with what would constitute incidental fill. Unique fence applications that may result in significant fill given the number or volume of fence posts, or some other design characteristic that may have a detrimental impact on a wetland (i.e., privacy fencing of sufficient height to pose a shading impact to adjacent vegetation, or maintenance corridor that results in a conversion) may result in permanent wetland impacts.

D.7 Herbicide/Pesticide Use within Surface Waters

The use of herbicides and pesticides within state surface waters does not require a permit from the Virginia Water Protection Program, as it is discharge authorized under the VPDES program (9VAC25-210-60 2). However, these activities may require a permit from the Virginia Pollution Discharge Elimination System (VPDES) Program: VPDES pesticide general permit (VAG87).

In addition, pesticide and herbicide use is considered jurisdictional for the Virginia Marine Resources Commission (VMRC) when a tidal wetlands plant is located within 1.5 times the mean tide range above mean low water. The decision of whether a permit is required is generally left up to the local wetlands board within the associated locality, and may depend upon the specific application/treatment plan. Thus, a Joint Permit Application is to be submitted to the VMRC to facilitate review by the locality in coordination with VMRC.

In summary, in instances where an applicant/citizen is seeking herbicide/pesticide use within state surface waters, permit writers are to refer inquiries to the VMRC, local wetlands board, and regional VPDES program.

D.8 Mechanical Removal of Aquatic Plants

Mechanical removal of nuisance plants is considered jurisdictional for the Virginia Marine Resources Commission (VMRC) when a tidal wetlands plant is located within 1.5 times the mean tide range above mean low water. The decision of whether a permit is required is generally left up to the local wetlands board within the associated locality, and may depend upon the specific application/treatment plan. Thus, a Joint Permit Application is to be submitted to the VMRC to facilitate review by the locality in coordination with VMRC.

In situations where proposed mechanical removal of nuisance plants is not under VMRC jurisdiction, the activity may not require a VWPP permit under the below scenarios.

1. In accordance with 9VAC25-210-50 A, the activity does not require a permit because it does not involve propose to dredge, fill, or discharge any pollutant into, or adjacent to surface waters; withdraw surface water; otherwise alter the physical, chemical, or biological properties of state waters regulated under this chapter and make them detrimental to the public health, to animal or aquatic life, or to the uses of such waters for domestic or industrial consumption, for recreation, or for other uses; excavate in wetlands.
2. In accordance with 9VAC25-210-60 6, impacts to open waters that do not have a detrimental effect on public health, animal life, or aquatic life or to the uses of such waters for domestic or industrial consumption, recreation, or other uses, are excluded from permitting.
 - a. Littoral aquatic plants do not constitute emergent vegetation, and thus affected resources are typically open water, unless some other characteristic(s) would define a fringe emergent wetland system (i.e. seasonal variations in water elevation resulting in prolonged periods of exposed shoreline) or lotic system (flowing waters).
 - b. Permit writers are to utilize the Open Water Exclusion Checklist to determine the applicability of the exclusion.
3. In accordance with 9VAC25-210-60 5, maintenance of currently serviceable structures, such as purpose-built stormwater and utility structures, transportation structures, dikes, groins, levees, dams, riprap breakwaters, causeways, or bridge abutments or approaches, are excluded from permitting. This exclusion applies when:
 - a. Activities conducted to maintain the function of serviceable structures, such as docks and boat ramps.
 - b. Removal activities are limited in scope to single-family homes, docks, boat rams, and other associated attendant infrastructure.

If mechanical removal activities are proposed within wetlands, or are proposed across multiple structures or resource-wide (an entire lake or section of lake), the activities may be subject to VWPP permitting. In summary, the above situations apply in situations where the only affected resource is open water, and the scope of work is limited to a single-family homeowner and/or the maintenance of existing serviceable structures.

D.9 Piles, Pylons, and Bridge Abutments

As dependent on the size and type of resource affected, the placement of pylons, pier posts, and bridge abutments within surface waters may be exempt from permitting. However, permit writers will need to assess projects on an individual basis to determine the need for permit inclusion, and whether any permanent impacts to surface waters may result that require compensatory mitigation.

The installation of piers may qualify for a USACE Regional Permit 17 (18-RP-17) or Regional Permit 18 (18-RP-18). If the activity qualifies for either of these regional permits, no VWPP permit is required.

D.9.1 Piers in Open Waters and Large Waterways

The installation of piers (including floating piers) within open waters and large streams/ivers (typically, widths exceeding 20ft – permit writers should assess the size of waterways based on the proposal) are exempt from permitting, provided:

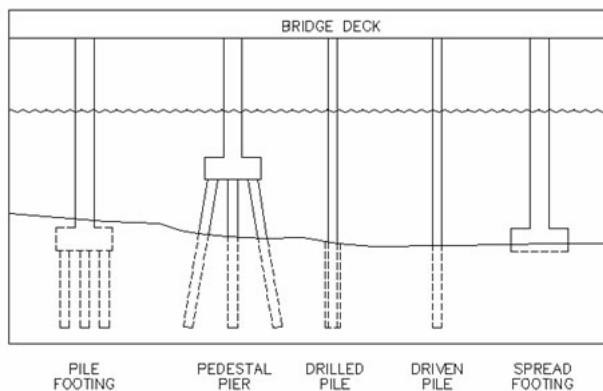
- All pier piles associated with the proposed structure(s) must be non-steel and no more than 12” in diameter; and no more than 25 pier piles may be installed channelward of mean high water (MHW) or OHW.
- Piers are not of a channel-ward length as to pose an impediment to stream flows, as to affect flows within the stream’s thalweg, and/or exceed 25% of channel width (as measured from MHW to MHW, or OHW to OHW, and to include all channelward wetlands).
- The proposed structure(s) may not extend greater than 300 feet from MWH or OHW (including all channelward wetlands).
- The pier and attendant features do not exceed aerial coverage of an open water of 10%.
- The pier and attendant features do not impact fringe wetlands (if so, see Section D.9.3).

Affects to submerged aquatic vegetation, including shading impacts, should be referred to the VMRC.

D.9.2 Piles, Pylons, and Abutments in Open Waters and Large Waterways

USACE counts the cubic yards of the entire footing structure that is below the river bottom towards permitting thresholds. DEQ only assesses the area of the pier at its interface with the stream bottom towards impact quantification. However, DEQ does count the required volume of dredged material to accommodate the footing structure towards the 5,000 cubic yard threshold for general permits. See Figure 3 for common types of bridge footings.

Figure 3: Types of Footings



The footprint of the piles, pylons, and/or abutments, or of the pile cap if it sits on the sub-aqueous bottom, counts towards impact totals. However, the installation of piles, pylons, and abutments within open waters and large streams/ivers (widths exceeding 20 ft) are exempt from compensatory mitigation, provided:

- The placement of the piles, pylons, or abutments is not within the stream’s thalweg.
- For effected open waters or fringe wetlands, height to width ratio of the supported structure is equal to or greater than 0.8 (see Section D.9.5).
- The footprint of the piles, pylons, or abutments does not exceed 10% of the effected resource.
- The construction of and the pylon(s)/abutment(s) permanent footprints do not impact fringe wetland (if so, see Section D.9.3).

D.9.3 Piers in Wetlands

The placement of pier piles within a wetland would generally not constitute a permitted activity due to its incidental nature. However:

- All pier piles associated with the proposed structure(s) must be non-steel and no more than 12” in diameter.
- If the installation of a pier within a PFO results in the clearing of trees, such impacts would constitute a conversion impact requiring compensatory mitigation at a 1:1 ratio as based on the area of coverage of the pier and attendant features.
- Any temporary PFO impacts associated with pier construction should be evaluated using Section D.3.
- The installation of a floating pier within a wetland constitutes a permanent impact.
- If the aerial coverage of the piers exceeds 50% of the effected resource, secondary impacts due to fragmentation should be evaluated.
- If the proposed height to width ratio of the pier is less than 0.8, evaluate for shading impacts (see Section D.9.5).

D.9.4 Pylons and Abutments in Wetlands

The footprint of the piles, pylons, and/or abutments, or of the pile cap if it sits on the soil interface, counts towards impact totals. However, the installation of piles, pylons, and abutments within a wetland would generally not require compensatory mitigation due to its incidental nature. However:

- If the aerial coverage of the pylons or abutments exceeds 10% of the effected wetland, impacts may require compensatory mitigation.
- If the proposed height to width ratio of the supported structure is less than 0.8, evaluate for shading impacts (see Section D.9.5).

D.9.5 Shading from Bridges, Piers, and Walkways in Wetlands

For bridges, piers, and walkways with a height to width ratio less than 0.8, these structures may pose impacts to wetlands due to shading, and thus require compensatory mitigation of the effected resources at a 0.5:1 ratio. See Section D.4.2 for further details.

D.10 Temporary Matting within Wetlands

Temporary matting is to be used to facilitate the use of heavy equipment within wetlands while preventing soil compaction, and thus permanent impacts to wetlands. Temporary matting is a specific condition of all Virginia Water Protection Permits. However, in cases where the only disruption to surface waters involves the use of temporary matting, the nature and temporal aspects of the proposed activity need be considered in determining the applicability of a VWPP permit.

D.10.1 Duration

The duration of the use of the matting is of principal consideration, as short-term versus long-term matting can have significantly varying effects on existing vegetation. In instances where the use of temporary mats is to be of sufficient duration to result in the loss of vegetative cover, and the subsequent need for appropriate reseeding and mulching, projects will require a VWPP permit. Proposed projects are

to be assessed on an individual basis; however, matting placement that exceeds 1 week is a good baseline in determining a period sufficient to result in vegetation die-off.

D.10.2 Extent of Use

Another factor to be considered when assessing temporary matting is the proposed extent of use project-wide. A single matted access point of short duration may not warrant the need for a VWPP permit, however, extensive matting, if even of short duration, may require a VWPP permit given the number of mats in use and increased propensity for temporary wetland impacts that may require restoration. Extensive use of matting would complicate project timelines and add complexity to project oversight, and thus the potential for vegetative impacts would increase. Thus, permit writers should assess projects individually, and utilize best professional judgment concerning the extent of mat usage as a determining factor in the need for a VWPP permit to ensure any impacts are adequately mitigated.

D.10.3 USACE Permitting of Temporary Matting

Oftentimes, the use of temporary mats in a Section 404 WOUS, including wetlands, is not considered a discharge of dredged or fill material as long as the matting is removed upon completion of work. Therefore, in many cases, a Section 404 Permit from the Corps is not required. Applicants are to ensure that the placement of matting within the stream channel is in a manner that does not impede flow. The Corps has not established a set timeframe for the use of temporary matting, however, 6-12 months is usually an acceptable period time. Utilization of matting beyond this period may constitute a permanent impact.

D.11 Impoundment Drawdowns

In order to facilitate the maintenance of an impoundment's infrastructure, dredging operations within the impoundment, and/or wide-scale homeowner maintenance activities, it may be necessary to drawdown the water level of an impoundment. While specific activities within an impoundment may be excluded from VWP permitting¹⁰, in some cases the staff may have to evaluate whether the drawdown¹¹ causes an adverse effect that may constitute an impact to the open water feature, any associated fringe wetlands, and upstream and downstream receiving waters, which would require VWPP Program authorization.

Staff will generally encounter three common scenarios:

- The project is a maintenance activity that qualifies for exclusion 9VAC25-210-60 5, and therefore, staff does not review the project's impact. However, if necessary, staff can require the requestor to demonstrate that the project is actually a maintenance activity.
- The project may qualify for the open water exclusion in accordance 9VAC25-210-60 6. Depending on the characteristics, storage and relative size to the watershed, staff may determine that additional information is necessary. The requestor must provide sufficient information to demonstrate the project will not have an adverse effect.
- The project may qualify for the exclusion related to wetland and open water impacts to a stormwater management facility that was created on dry land (uplands) for the purpose of

¹⁰ See 9VAC25-210-50 5, 6, and 12.

¹¹ A drawdown physically removes surface water. One or more exclusions under 9VAC25-210-310 may apply to the physical removal of surface waters (withdrawals).

conveying, treating, or storing stormwater. Other permits may be required pursuant to local, state, or federal law. Projects claiming this exemption shall create no more than minimal ecological impact [*add reference once this concept is finalized*].

- The project may have dredging or wetland impacts or other elements that preclude an exclusion; therefore, the activity will require a permit and must be reviewed by staff.

For the projects that require VWP Permit Program review, the requestor should submit sufficient information for VWP Permit Program and/or Office of Water Supply (OWS) staff¹² to process the request, including any necessary coordination with other resource agencies. The requestor should, as applicable, address the below:

- Are there any direct impacts to surface waters, including wetlands, associated with the proposed impoundment drawdown activities and any associated maintenance activities?
- Will the activity(ies) impact minimum instream flow (MIF) and/or involve surface water withdrawals?
- Are there fringe wetlands associated with the impoundment that would be adversely affected by the drawdown, such as changes to hydrology due to prolonged periods of drying?
- How will the drawdown be implemented? Specifically, the requestor should provide :
 - What is the method of drawdown? For instance, a gate valve from bottom or from top with sluice gate or siphon (top withdrawal results in more O₂ and higher temperature releases to receiving waters (bottom withdrawal may result in discharge of anoxic or low O₂ water).
 - Would the rate of drawdown have adverse effects on receiving waters, such as prolonged elevated discharges?
 - The timing of drawdown (time of year implications). For instance, drawdowns occurring during wetter periods of the year may overwhelm the capacity of a receiving channel and cause localized flooding.
 - The duration of drawdown. Consider the biochemical implications on the open water, any associated wetlands, and upstream and downstream waters. A prolonged period of drawdown may not only affect the open water resource and associated aquatic life, but also fringe wetlands and upstream and downstream waters due to alterations to existing flow regime.
 - Is a routine drawdown being proposed? If so, would the duration and frequency of the scheduled drawdowns have potential biochemical implications?
- For an in-line BMP, will a new channel be allowed to cut into the newly exposed bottom of the impoundment? How will the new channel be stabilized, and how will downstream waters be protected from deposition of sediment?
- Are there downstream water users who would be affected by the lake drawdown?

¹² Coordinate with staff in the Office of Water Supply for drawdown (withdrawal) activities, especially when an impoundment is located in-line and has significant storage relative to watershed size (Chapter 3 Appendix A).

- Identify potentially affected users and how the proposed action may affect such uses. For instance, after drawdown the receiving channel may have reduced flow, however during drawdown, the potential to overwhelm downstream impoundments exists.
- Will the drawdown, as proposed, affect designated uses of upstream and downstream stream channel(s)?
- Are there potential impacts to protected species¹³?
 - Is the resource subject to Time of Year Restrictions from the Virginia Department of Game and Inland Fisheries (DGIF)?
 - Is the impoundment a DGIF managed resource?
 - Are threatened and endangered species present in the impoundment, or upstream or downstream of the impoundment?

After drawdown, refilling of the impoundment may also have impacts to upstream and downstream waters. The requestor should address the following concerns:

- MIF
- The timing of refilling the impoundment. Refilling during dry months exacerbate effects to downstream receiving waters and water users.
- The duration of refilling the impoundment. A prolonged period of filling would result in an extended alteration to hydrologic inputs to downstream receiving waters.
- If permanent draining of an in-line impoundment, how with the new channel re-form and how will it be stabilized?
- Will the impoundment's normal pool elevation be returned to its original elevation?
- What contingencies exist if drought conditions experienced during the refiling of the impoundment? Drought conditions would prolong the period of filling and exacerbate any direct effects of surface waters associated with the drawdown activity, and may have significant implications on downstream waters.

¹³ If the requestor identifies possible species concerns, coordinate with the DGIF concerning threatened and endangered species and/or DGIF-managed resources, and how the proposed drawdown activity may affect them.