

Clean Water Project Data Management in the Watershed Projects Database (WPD)

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I. Introduction

The Watershed Projects Database (WPD) is a Vermont Department of Environmental Conservation (DEC) database managed by the Agency of Digital Services (ADS) that is used by DEC to review, screen, prioritize, track, and report on DEC-funded clean water projects in Vermont. External partners across the State of Vermont also use WPD public interface to identify projects for funding applications.

This document describes the WPD roles and responsibilities of the Watershed Planning Program (WPP), Clean Water Initiative Program (CWIP), ADS, and external partners and outlines the methods used to manage DEC's clean water project data. Please note that data from other State of Vermont agencies (e.g., VTrans, AAFM) are managed in a separate database, known as the Clean Water Reporting Framework (CWRP), which is outside the scope of this document.

II. Program Responsibilities

WPP uses WPD to identify and prioritize clean water projects for implementing tactical basin plans, while CWIP uses WPD to track DEC funding and project results. ADS supports the missions of these programs by performing standard database maintenance and implementing database improvements. External partners use WPD to identify projects eligible for funding. The roles and responsibilities of WPP, CWIP, ADS, and external partners in WPD are outlined below.

WPP Responsibilities

1. **Enter new projects and manage proposed projects.** New projects can be entered by manually creating a new project or uploading a Batch Import File (BIF). WPP may also be asked to assist in identifying and removing duplicates or updating descriptions for proposed projects.
2. **Review and screen projects to determine eligibility.** As projects move through the project development phases ("steps"), technical staff (e.g., WSMD resource programs) review projects as they are initially uploaded into WPD to determine eligibility and screen for natural resource constraints (i.e., determine if projects may require a jurisdictional determination). Technical reviews and Basin Planners also determine the water quality benefit and/or net environmental benefit as well as co-benefits, where possible.
3. **Update project statuses for projects with the "Other Funding" designation.** These projects are included in WPD for tactical basin planning and tracking project progress (30%, 100%, implementation), but are not included in CWIP's annual clean water reporting. Funding and project information from external partners (i.e., VTrans, LCBP external, VHCB, private

funding, etc.) are reported to CWIP once per year through the Clean Water Reporting Framework (CWRP) Import File, and these data are not stored in WPD by CWIP.

CWIP Responsibilities

1. **Enter DEC funding decisions (including LCBP internal) as they become available.** This involves updating the status from “Proposed” to “Funded” by adding “Proposals Submitted”, “Proposals Rejected”, “Funding Amounts”, and “Grant Executed” events. This also includes entering newly executed block grants and contracts funded by DEC. This process occurs continuously throughout the year as grant rounds are completed and also quarterly to capture additional grants/contracts.
2. **Close out DEC-funded (including LCBP internal) completed projects.** Closeout involves entering performance measures, phosphorus reductions, final funding, and photos from documents in the DEC Grants and Contract Management System (GCMS). Closeout occurs on a quarterly basis. Projects are not closed out at the request of external partners.
3. **Perform QA/QC review for annual reporting.** Numerous QA/QC reports are used to ensure WPD data meets *Performance Report* data standards.

ADS Responsibilities

1. **Perform standard database maintenance.** This includes correcting functionality errors, deleting projects, and uploading BIFs at the request of CWIP and WPP.
2. **Implement data management improvements.** This involves adding new data fields and improving the overall usability of the database at the request of WPP and CWIP.
3. **Export data for the *Performance Report*, *Clean Water Project Explorer*, and *Tactical Basin Planning Reports*.** Data in WPD is exported to CWRP for annual reporting. CWRP data are also displayed in the [Clean Water Project Explorer](#). The Project Explorer is only updated once per year after the *Performance Report* is published. Project data are also exported for the development of Tactical Basin Plan interim and final Report Cards to comport with the TMDL Accountability Framework.
4. **Provide database access to relevant staff.** This includes maintaining a user list and adding new staff, as appropriate (e.g., WSMD technical staff for project screening review).

External Partners

1. **Use WPD and the Clean Water Project Explorer to identify projects eligible for funding.** External partners may use the [WPD public interface](#) and the [Clean Water Project Explorer](#) to search for projects.
2. **Contact Basin Planners to update projects with “Other Funding”.** External partners must notify Basin Planners when they would like an external funding decision added to WPD, as

CWIP only receives external updates once per year and these data are managed in a separate database (CWRF).

Please note that DEC funding decisions and project closeout are not updated at the request of external partners. CWIP performs project closeout and updates DEC funding decisions mainly on a quarterly basis. External partners, however, can request for Basin Planners to change a completed project's status to "Pending Closeout" until CWIP can update the project to "Completed".

III. Creating New Proposed Projects

Basin Planners are responsible for determining if a project meets eligibility criteria then inputting new projects into WPD. This can be done either manually for one project at a time or multiple projects can be uploaded using the Batch Import File (BIF). Basin Planners must review BIFs submitted by partners to ensure the following project info is complete and accurate.

a) Proposed project data standards

Proposed projects should contain the following information.

1. **Project name (required):** A few words (10 words and 100 characters or less) that describe the project and distinguishes it from other projects. The project name should be able to be located by a simple search.
 - a. Examples: "Happy Camp Rain Garden", "Blue River Berm Removal", "Townville Road Culvert Replacement".
 - b. If a project has a design and implementation component, these phases are distinguished in the project title. Example: "Blue River Dam Removal – Final Design" and "Blue River Dam Removal – Implementation".
2. **Project description (required):** The project description is 3-4 complete sentences in present tense describing basic details about the (1) specific location of the project, (2) what the project entails/accomplishes, and (3) what specific problem it addresses. All acronyms are spelled out.
 - a. Format: This project is located [enter address, cross streets, stream name and reach or other landmark] in [town(s) or region]. The goal of this project is to [state reason for project/pollutant reductions]. This is accomplished by [state the outcome of the completed project].
 - b. Example: This project is located at the corner of Brook Lane and Pinehurst Dr. in Shelburne. The goal of the project is to reduce erosion from stormwater runoff in the Hullcrest neighborhood. This is accomplished by the construction of a 260-foot roadside swale with a perforated pipe and gravel trench underdrain.

3. **Project Type (required):** Project types are assigned according to the [descriptions stored in WPD](#).
 - a. If a project does not have a project type within the existing list, WPP and CWIP discuss the new project type before asking ADS to add to WPD. The sectors assigned to project types affect how funding is distributed for annual reporting.
4. **Town or Region (required):** Only the most specific town(s) or region for the project is entered. Projects may span multiple towns. If there is no discrete location for a project, a region may be chosen such as a county, “Statewide”, “Lake Champlain Basin”, or “Connecticut River Basin”.
 - a. The [Water Quality Screening Tool](#) or the [Natural Resource Atlas](#) can be used to identify the Town or County of a project.

Multiple levels of location data are not entered. For example, if a project is located in the “Town of Stowe”, then “Lamoille County” or “Lake Champlain Basin” should not be entered. Multiple levels of location data will incorrectly distribute funding for annual reporting.

5. **Watershed or Basin (required):** Only most specific watershed(s) or basin for the project is entered. Projects may span multiple watersheds. If projects are regional, they could be “Statewide”, “Lake Champlain Basin”, or “Connecticut River Basin”.
 - a. The [Water Quality Screening Tool](#) or the [Natural Resource Atlas](#) can be used to identify the Planning Basin or Sub-Basin of a project.
 - b. In most cases, the most specific watershed for the project is the “Sub-Basin”, which is also known as the Waterbody Identification Number (WBID). WBIDs are identified using a standard naming convention with the following format: VT03-14.

Multiple levels of location data are not entered. For example, if a project is located in the “8 – Upper Mad River Tributaries (VT08-20)”, then “8 – Winooski River Basin” or “Lake Champlain Basin” should not be entered. Multiple levels of location data will incorrectly distribute funding for annual reporting.

6. **Latitude & Longitude:** The center point of the project or stream reach/segment are used when determining the latitude and longitude. This location must represent the actual location of the project and not the location of the entity receiving funds.
 - a. If there is no discrete location for a project, (e.g., Stormwater Master Plans and Lake Watershed Action Plans), the town or region is entered rather than coordinates.
7. **SGA Reach:** Stream reach, if applicable (not required).

8. **Partners:** All applicable partners are linked for the project. If a partner is not within the existing list, ADS can add new partners. This field is not required when the project is still “Proposed”.
9. If the project being entered is associated with a previous project step, such as design or scoping, then projects are linked using “Parent” and “Child” relationships.

b) Batch Import Files (BIFs)

BIFs are used to import multiple proposed projects into WPD at once. The latest version of the BIF is stored on the [CWIP Grant Applicant & Recipient Resources webpage](#). BIFs are typically developed for the following reasons.

1. Basin Planners identify multiple projects through tactical basin planning. Uploading projects via BIF is more efficient than manually entering single projects.
2. Grantees are required to submit a BIF as part of a scoping, development, or design grant agreement. The Technical Project Manager (TPM) of the grant performs an initial review of the BIF for completeness and accuracy, which includes reviewing all of the “Proposed project data standards” outlined above. Project coordinates can be reviewed in the [Water Quality Screening Tool](#) or saved as a CSV and uploaded to the Natural Resources Atlas for location review. After reviewing the BIF, the TPM provides the BIF to the appropriate Basin Planners for review. The Basin Planner sends to ADS for upload.
3. External partners, such as MS4 communities, may also identify a series of planned projects and submit them to Basin Planners via BIFs.
4. Basin planners and TPMs carefully review BIFs to ensure all required fields are completed, titles and descriptions are accurate, project types are correct, according to the requirements outlined in Section IIIa above.
5. Basin Planners use their best professional judgement to decide which projects from a BIFs are uploaded into WPD. Generally, high and medium priority projects from BIFs are uploaded to WPD, but project prioritization can vary based on town readiness or nutrient reduction potential. All 30% design projects from BIFs should be entered into WPD.

All BIFs must be reviewed by the appropriate Basin Planner before being sent to ADS to upload. This helps ensure that projects are eligible and project information is correct.

IV. Updating Funding Decisions

After a project is displayed as proposed in WPD, external partners can apply to CWIP or external funding sources for the proposed projects. Information on CWIP grant opportunities can be found on the [Clean Water Initiative Program Grant Opportunities webpage](#). External

funding opportunities can be found through the [Clean Water Funding Opportunities tool](#) or through other State of Vermont agencies (VTrans, AAFM, VHCB, etc.) or non-profit entities (LCBP, Sea Grant, etc.). Note, State Revolving Fund (SRF) loans and pollution control grants are generally not tracked in WPD. Though the funds are managed by DEC, they can be considered “external” for the purpose of this document. The roles and responsibilities for updating CWIP and external funding decisions are described below.

a) CWIP funding decisions

In a CWIP-sponsored grant round, after proposals have been selected and all applicants have been notified, CWIP updates the status of each project in WPD using the following steps. CWIP will also update WPD or add a new project to WPD, if necessary, after an applicant is chosen to receive a block grant or a contract.

1. If a proposal was rejected during a grant round, CWIP adds “Proposal Rejected” and enters the date that the rejection notification was sent. CWIP also notes the reason for rejection so Basin Planners can understand why the proposal was rejected.
2. If a proposal was selected, then the “Proposal Selected” date is added to the project.
3. The grant executed date, grant number, grant amount, and funding source are entered once an agreement has been signed. The project status is now “Funded”.
4. Although not required, proposed performance measures can be entered once the grant agreement is signed. Performance measures can be found in the grant agreement under the Scope of Work.

Many circumstances can cause a delay between when a grant is executed and when the funding decision is updated in WPD. Thus, these projects will be updated through a quarterly review process rather than directly following a grant round. CWIP is working to improve this process so funding decisions can be updated in a timelier manner.

b) External or “Other Funding” decisions

Projects with external funding sources can be marked as funded using the “Other Funding” distinction. These projects are included in WPD for tactical basin planning but are not included in CWIP’s annual clean water reporting. WPP is responsible for updating “Other Funding” decisions following the points below.

1. External partners must notify Basin Planners when they would like an external funding decision added to WPD. If an external funding source is not listed in the database under “Other Funding” the basin planner may ask ADS to add the other funding source to the database.

2. Basin Planners may contact CWIP about sending a bi-annual Mail Chimp email to grantees asking them to review the Project Explorer for the statuses of their externally funded projects. For this notification to be effective, Basin Planners should encourage all grantees to subscribe to the [Grants Notification list](#).
3. Basin Planners then add the Funding Date, Funding Source, Amount, Grant Number, and Funded Partner to WPD.

Please note that projects with “Other Funding” are not reported to CWRF for annual clean water reporting. As a result, there is no need to be concerned with double counting of funding, performance measures, or phosphorus reductions for the “Other Funding” project in WPD and the same project reported by the external agency (e.g., VTrans).

V. Project Closeout

CWIP performs project closeout on a quarterly basis using the steps outlined below. Projects are not closed out at the request of external partners outside of the quarterly process.

a) Identifying projects to be closed

CWIP uses a database report to identify projects that need to be closed in WPD. The report, which uses grant number as a common identifier, pulls projects that have been financially closed in GCMS but that still have a “Funded”, “Proposed”, or “Pending Closeout” status in WPD. The projects in this report need to be closed out or changed to funded in WPD.

b) Individual project closeout

CWIP uses the following steps to close out each individual project in WPD.

1. Obtain the following documents from GCMS or the TPM.
 - a. Agreement
 - b. Form 430M
 - c. [Final Performance Report](#)
 - d. BMP reports ([Stormwater Report](#), [Buffer Planting Report](#))
2. Ensure the Title, Project Type, and Project Description reflect the outcomes of the project.
3. Ensure the Latitude/Longitude, Town, and Basin are correct by entering the coordinates into the [Water Quality Screening Tool](#). CWIP verifies that multiple levels of location data are not being reported (e.g., Stowe & Lamoille County, VT08-20 & Winooski Basin).
4. Confirm and update the final state funding amount and local match (430M) using the final paid amount in GCMS.

5. Add Project Completed date based on the date from the Final Performance Report or other final report. This changes the status of the project to “Completed”.
6. Add Performance Measures and achieved date from the Final Performance Report or other final report.
7. Add data for phosphorus reduction calculations using the Stormwater BMP Report or Buffer Planting BMP Report.
8. Ensure the project is linked to previous grants, design/scoping projects, or block grants. Projects identified under a Stormwater Master Plan or River Corridor Plan are linked to the appropriate identification parent project. If a project is part of a Flow Restoration Plan (FRP), the project is linked to the FRP and the applicable MS4s.
9. Add before and after photos for implementation projects. These photos are displayed on the [Clean Water Project Explorer](#).

c) Block grant closeout

Block grants are projects where funding is given to a single entity to design and/or implement numerous projects under a single grant agreement. Examples of CWIP block grants include River Corridor Easement Block Grants, Design/Implementation Block Grants, Work Crew Block Grants, and Woody Buffer Block Grants.

Before a block grant is completed, only the parent project (e.g., “2019 Northwoods Conservation Corps Work Crew Block Grant”) with total funding is entered into WPD. Once a block grant is completed, the parent project is divided, or “linked”, to multiple child projects with individual WPD IDs that represent individual projects or BMPs implemented (e.g., “Norwich Dam Removal Planting”, “Hubbardton Encapsulated Soil Lifts”, etc.). Each child project with a WPD ID is treated like a single project with its own coordinates, funding, project type, performance measures, and BMP reports, but is linked to the parent project for funding calculations. Funding for all of the child projects is added to calculate the total funding for the block grant.

Single Ecosystem Restoration Program grant agreements can have multiple project components or BMPs, which are managed similar to block grants in WPD. For example, a stormwater implementation project may construct two separate wet ponds 0.25 miles apart in the same neighborhood. For phosphorus accounting to be accurate, each wet pond must be managed as its own WPD ID and connected to a parent project.

CWIP closes out block grants in WPD using the following steps.

1. Update the parent project information and funding.
2. Add all individual child projects to WPD, if existing WPD IDs do not already exist, and connect to the parent grant. Child projects are closed out in the same way as individual

(i.e., non-block grant) projects, except the funding is added as a Grant Component to the parent project grant.

3. Confirm that all child project funding is summed to the correct grant total in the parent project.

d) Terminated or partially completed projects

Occasionally, projects will be terminated or only partially completed due to unforeseen circumstances. The following three categories determine how these projects are closed out in WPD. In all cases, CWIP consults with the grant TPM and the relevant Basin Planner before determining the status of the project.

1. **Grant Terminated:** If a grant agreement was executed but the project scope of work could not move forward, then there are no results to report in WPD. A small amount of money may have been expended prior to realizing this project could not move forward. “Grant terminated” only applies to the grant or contract agreement, and it does not necessarily indicate that the project will never move forward. The project could still be pursued at a later date unless a Basin Planner or other Watershed Management Division (WSMD) project coordinator (e.g., River Scientist) indicates project is terminated (see “Project Terminated” description).
 - a. In WPD, the grant is updated to “Grant Terminated” and the status of the project reverts to “Proposed”. There are no performance measures entered.
2. **Grant Partially Completed:** The grant agreement was executed, but the scope of work was only partially completed and there was partial expenditure of funds. If the project was pursued as much as was feasible, the project is designated as completed and results will be reported. The project could be pursued later unless project is deemed “Project Terminated” below). If the project could still be pursued further and there were no results to report, see “Grant Terminated” status.
 - a. In WPD, the status of the project is “Completed” and there are performance measures to report, but the scope of work is incomplete. Another project can be added to account for the remaining work on the original project.
3. **Project Terminated:** The project will likely never move forward to the next step due to landowner rejection, technical feasibility, site constraints, and/or site-specific solution exceeds reasonable cost effectiveness. “Project Terminated” does not necessarily indicate grant status. CWIP consults closely with the Basin Planner or TPM for the project to decide if this project could be pursued again or if it will never be completed. If they are certain it cannot be pursued further, the project is terminated.
 - a. In WPD, the status of the project is “Terminated”. There are likely no performance measures to report.

VI. Annual QA/QC Review

After all project closeout for a given fiscal year has been completed, CWIP uses numerous QA/QC database reports to ensure WPD data meets *Performance Report* data standards. This includes correcting inaccurate or missing grant numbers, project events, performance measures, location data, BMP data, and photos. CWIP also compares WPD data to the Clean Water Fund Spending Plan review to ensure all projects are captured in WPD.

VII. Future Improvements

WPD is continuously evolving to fit the needs of WPP, CWIP, and external partners. Thus, this SOP is a working document and subject to change to incorporate the following items as well as other needs that arise. This section describes improvements to WPD that are currently in development or will be pursued in the near term.

1. **Project closeout nForm.** Through the Clean Water Project Closeout Lean process, CWIP identified a more efficient closeout process where grantees submit final reporting deliverables to TPMs via ANR Online. TPMs then approve the final deliverables in ANR Online and data flow directly into WPD, which eliminates manual entry and allows the process to occur continuously throughout the year. CWIP is currently working with ADS to develop the project closeout nForm.
2. **Project entry and update nForm.** To initiate a new clean water project in WPD, requesters send proposed projects to Basin Planners for review via email, but data are often incomplete. The proposed project process also currently varies among Basin Planners, meaning there is no consistent process for our external partners working across basins. Once Basin Planners approve a proposed project for WPD, they must also manually enter data into a Batch Import File or WPD, which can result in errors if there is no additional QA/QC step. WPP is currently working with ADS to develop a project entry and update nForm to improve this process in WPD.
3. **Technical project review SOP.** WPP and WSMD have developed a consistent project screening process for each clean water project type. The SOP will be used to standardize the project review process in advance of the transition to Clean Water Service Providers under Act 76. The new project review process will likely involve the following steps.
 - a. Once project has been uploaded into WPD with relevant project data and standards, WPP will review projects for initial WQ and environmental benefits, as well as co-benefits.
 - b. Technical staff will be sent notification(s) that new projects and/or a change in project status requires technical review.

- c. ADS will enhance WPD to provide reviewing/ screening functionality in order to facilitate the standardized review of projects as they move through the project development phases, create and automated workflow for technical staff, and provide documentation to reduce risk
4. **Functioning Floodplains Initiative (FFI) river project tracking.** The FFI will establish a methodology to identify and prioritize potential river/ floodplain and wetland restoration projects related to water quality, aquatic habitat, and flood hazard mitigation in the Lake Champlain Basin of Vermont. The consultants will ultimately produce a web application to help the state identify and track priority protection and restoration projects. CWIP and WPP will be working with the FFI team to integrate these tools into WPD to inform river project planning and tracking.
5. **Clean Water Service Provider (CWSP) functionality.** WPP and CWIP will be working with ADS to determine how to best provide CWSPs with the appropriate level of access functionality in WPD in order to review project status and inform co-benefit scoring.