BOARD OF WATER AND SOIL RESOURCES

Buffer Compliance Guidance Document – Using the Buffer Compliance and Tracking Desktop Tool

Board of Water and Soil Resources (BWSR) developed and continues to manage the Buffer Compliance and Tracking (BuffCAT) Desktop Tool. BuffCAT is a voluntary tool to track buffer compliance in regard to Minnesota Statute §103F.48 Riparian Protection and Water Quality Practices (Buffer Law).

Purpose: This document provides basic guidance on how to use the buffer compliance and tracking tool to update or research buffer compliance data. The tool is used to indicate and track buffer compliance on a parcel-by-parcel basis. Use of the tool is voluntary but collects data in a format that will integrate with BWSR's existing data and meet *BWSR Procedure 4: SWCD Reporting and Compliance Monitoring* requirements.

BuffCAT User Log-In Accounts

BuffCAT has a limited number of accounts available for Local Government Unit (LGU) users. BWSR manages and tracks the total number of user log-in accounts. Log-in accounts are authorized for Soil and Water Conservation District (SWCD), County and Watershed Districts. Each LGU has a limited number of accounts available for use to ensure each LGU is able to have an account if requested.

Types of user log-in accounts include:

- **Editor:** SWCD users are able to edit and review.
- **Reviewer:** users are able to review only and include:
    - County
    - Watershed Districts
    - Tribal Nations

New BuffCAT User

Process for obtaining a new BuffCAT User Account has two (2) options:

1. BWSR BuffCAT User Account:
    a. Contact your BWSR Buffer and Soil Loss Specialist requesting a BuffCAT user log-in account. Provide the following information with the request.
        i. User email
        ii. User organization

b. BWSR Buffer and Soil Loss Specialists will submit a request to MN IT personnel to create your new user log-in account.
c. You will receive an email requiring additional verification and steps to complete your new user log-in account. Remember to save your username and password you create.
d. A specific link will be sent to log-in to BuffCAT. Save this link! As it will ensure getting to the appropriate log-in for BuffCAT use.

2. Your own LGU Organization ArcGIS Online (AGOL) account.
    a. Verify user role is set to allow to join a group from another organization.
    b. Verify AGOL user type is, at minimum, creator account.
    c. Provide your Buffer Specialist with the required information listed below.
        i. AGOL username
        ii. AGOL username email tied to the account
        iii. LGU Organization name
    d. The notification to join will be located in the AGOL account in "notifications" in the upper right corner displayed as a bell.

If issues arise, contact your Buffer and Soil Loss Specialists for assistance.

Existing BuffCAT User

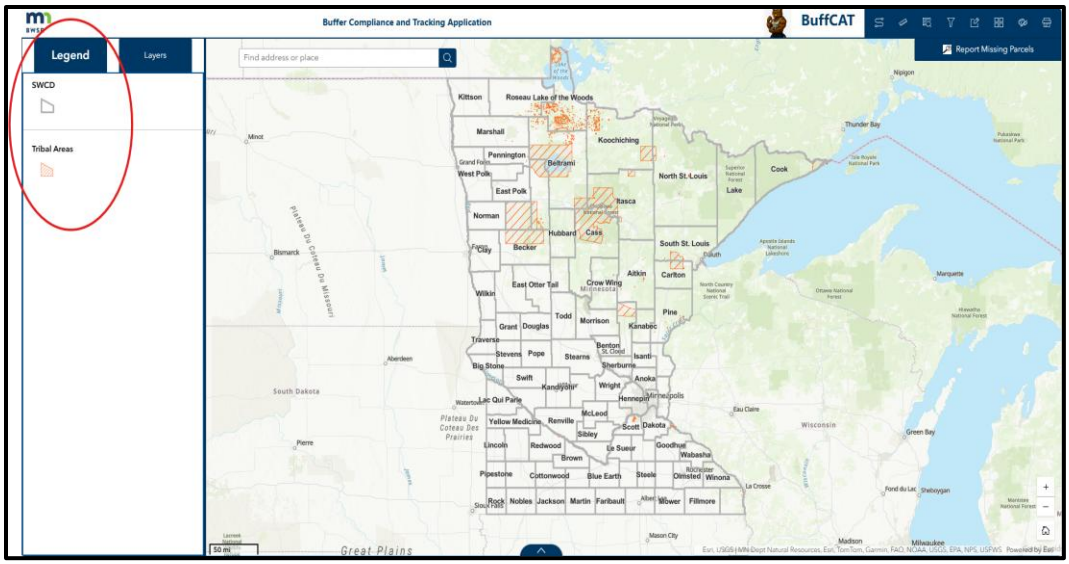
Contact your BWSR Buffer and Soil Loss Specialist for account and log-in support if issues occur. Your user log-in credentials are required for the web browser application. If issues continue, Buffer and Soil Loss Specialists will initiate an account reset or work with our Information and Technology (IT) staff to resolve the issues.

Existing BuffCAT users have the option to switch from a BWSR BuffCAT User Account to your own LGU AGOL account if requested by providing the required information below. Please ensure that your LGU account is set up to allow it to join a group from another organization.

- AGOL username
- AGOL username email tied to the account
- LGU Organization name

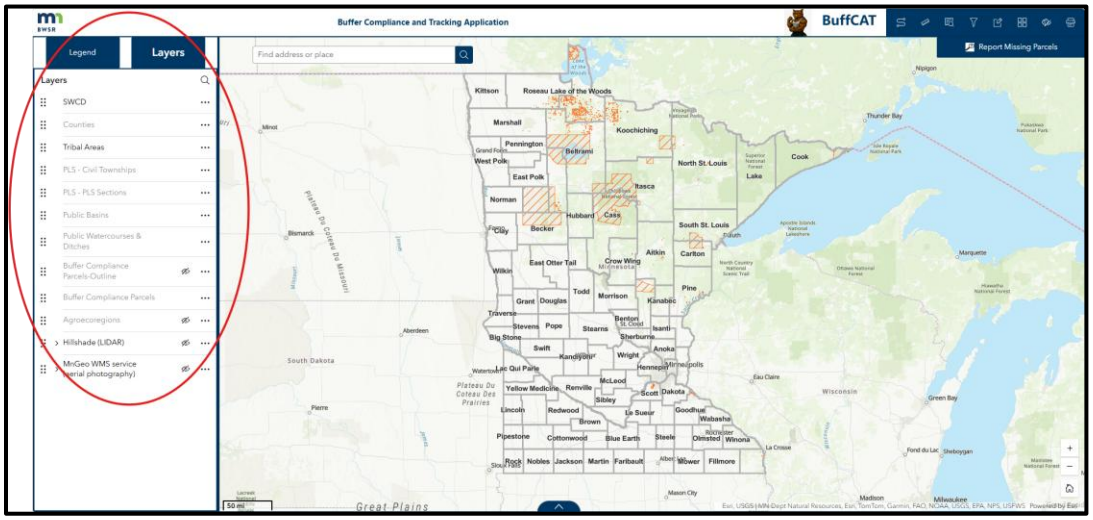
Navigation Tools

Navigation tools are broken down into a variety of items displayed within the BuffCAT Application. On the left side of the application, you will notice **Legend** and **Layers**. On the top right corner of the application you will notice **measurement, query by state PIN, filter, edit, basemap gallery, draw, and print** (in that order from left to right). Below those navigation tools is **Report Missing Parcel.** Below will be more details pertaining to each item individually.



Legend

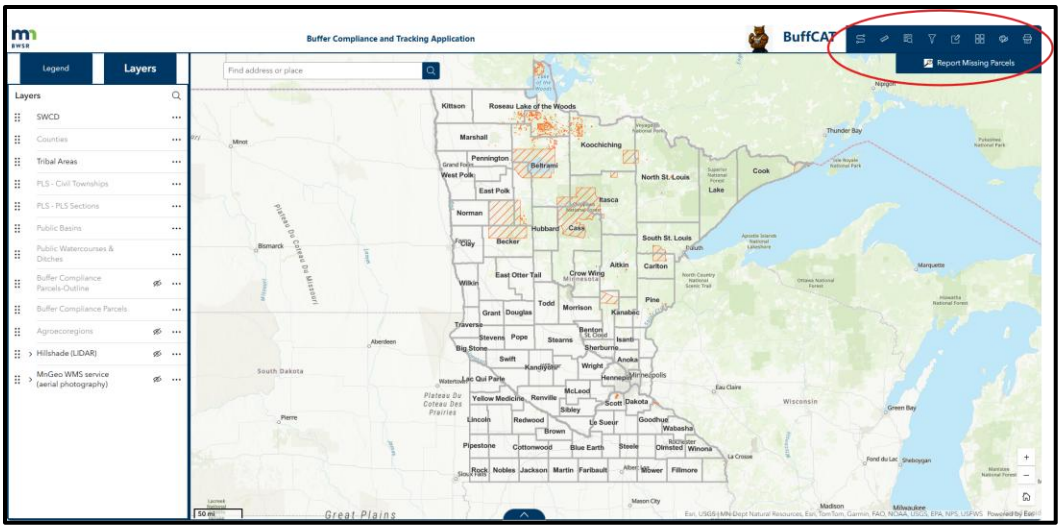
Located in the upper left corner of the main user page interface. This shows the layers that are active within the application and how each layer is symbolized. To display the Legend, select the Legend icon to open. The Legend will only display what layers are turned on (visible) at the current display range. Note, if the BuffCAT user zooms too far out in the application, some layers will not be visible due to a setting restriction. When a layer is displayed, meaning it has been turned on and zoomed within the display range, the layers will show up under the legend tab.



Layer

Located in the upper left corner of the main user page interface, second icon from the left. To display the layers, the Layers icon needs to be selected. There are selectable layers in this BuffCAT Application within which users can do the following:

- Turn layers on or off – lets you decide which map layers are displayed at any time.
- Control transparency – make layers more visible or less visible, to reveal underlying data.
- Set a filter for that layer – this is a way to filter that layer for display or analysis, allows you to focus on specific features or imagery.
- Calculate statistics – generating summary measures for your data. A popup box will appear, and the layer will have a dropdown menu to select the field from which statistics will be calculated.
- Add to a table – this adds the attributes from that layer to the expandable table at the bottom of the BuffCAT application. It displays the data / information for that layer. This table can be viewed using the arrow button at the very bottom center of the page.
- Export the layer to JSON, CSV, or GeoJSON, Shapefile, FGDB, or KML – please note that dependent on size of area selected, the application will determine how long and/or large the file could be when downloaded.
    - **JSON** (JavaScript Object Notation) – a lightweight, text-based data interchange format.
    - **CSV** (Comma-Separated Values) – a plain-text file format used to store tabular data (like a spreadsheet or database) where each line represents a row, and a comma separates each column.
    - **GeoJSON** – an open, lightweight format based on JSON used to encode geographic data structures.
    - **Shapefile** – a popular geospatial vector data format used in Geographic Information Systems (GIS)
    - **FGDB** (File Geodatabase) – a proprietary, folder-based geospatial data format created by Esri.
    - **KML** (Keyhole Markup Language) – an XML-based file format used to display geographic data, such as points, lines, polygons, and 3D models, on 2D and 3D maps.
- Adjust the drawing order, up or down, in the layer list – this is accomplished by clicking and holding the six-dot box on the left side of the layer to drag to the drawing location desired.



My Location

My Location tool is the first icon tool located in the upper right corner on the main page user interface, reading from left to right. Depicted as an “S” symbol with two dots on the end of the lines that create the S. When clicking this icon, a pop up displays with the option to hide or show your location on the map and to get your location. When clicking on Get Location another pop up will display that indicates whether you would like to block, just this time, or allow ArcGIS to know your location.

Measurement

Measurement tool is in the upper right on the main page user interface, seventh icon from the right. Depicted as a ruler. Users can utilize this tool to complete two (2) types of measurements within the BuffCAT Application. Note that the user may change the measurement units after they begin the measurement.

- Measure distance.
- Measure area.

When users are completing measurements in the BuffCAT application, users must “double click” to end the measurement. Selecting a “New Measurement”, will delete the previous measurement taken by the user.

Query by State PIN

Quary by State PIN tool is in the upper right on the main page user interface, sixth icon from the right. Depicted as a square paper with a magnifying glass over the square. Use this tool to search for a specific parcel using the state PIN, which is State Code 27 plus County FIPS Code plus the Original PIN without dots. Note the dropdown will auto filter as the user starts typing. When the user sees the PIN, they are searching for, click on the PIN in the dropdown. When you search for a new parcel, select the reset button to clear the query.

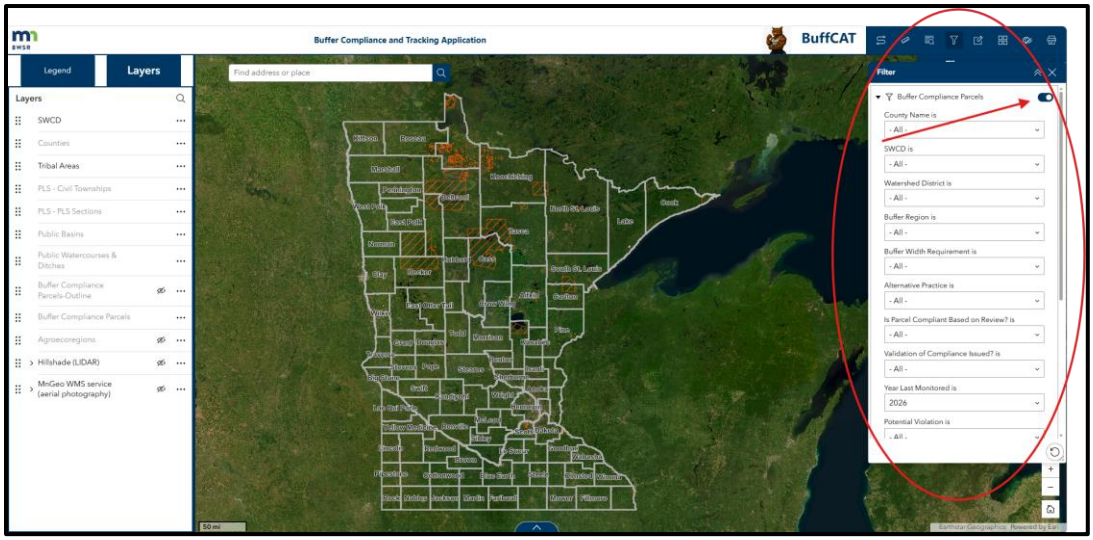
Filter

Filter tool is on the upper right on the main page user interface, fifth icon from the right. Depicted as a funnel. Use this tool to select specific searchable criteria to narrow the search in multiple fields. To open the filter tool, users must select the icon located in the top right corner of the BuffCAT Application.

When opening the filter tool there is a toggle switch on the upper right drop down menu, this allows the selection of the fields to filter by. Ensure that the toggle switch is clicked or turned on when ready to filter. Once on, it will automatically filter your data based on the field's value selections.

The filter uses an "AND" operator logic rather than an "OR" logic. This means that each additional field selected for filtering will limit the results in addition to the other fields selected for filtering.

The filter can be reset anytime using the circular arrow icon in the lower right corner of the filter widget.



Edit

The Edit icon is on the upper right on the main page user interface, fourth icon from the right. Depicted as a square with a pencil. BuffCAT users will utilize this tool when completing the requirements for Buffer Procedures #4. Users have the ability to edit via two (2) methods, single parcel and batch editing. When editing parcel(s), ensure all required fields are updated to correctly display the buffer compliance status determined by the SWCD.

Note:

- BuffCAT users can edit any parcels displayed in the state. Please ensure you are only editing your specific county parcels and not parcels in another County.
- Note that some fields are not editable.
- Users may add attachments to parcels using the attach button at the bottom of the edit window.
- Batch editing tips –

- If users are using batch editing to complete multiple parcels, please review and ensure the selected parcels are correct. A quick review helps ensure that only the intended parcels are selected.
- BuffCAT will select all parcels that are within the rectangle / polygon which is drawn.
- A drop-down list of all parcels selected will appear in the edit dropdown table.

Basemap Gallery

Basemap gallery tool is on the upper right on the main page user interface, third icon from the right. Depicted as four squares. This allows users access to a variety of basemaps to choose from to display within the BuffCAT application. Note, these basemaps are different from the MnGeo WMS service (aerial photography).

Draw

Draw tool is on the upper right on the main page user interface, second icon from the right. Depicted as a painting palate. Use this tool to draw points, lines, polygons, rectangles, circles and text. When using the draw tool, it will create a new ***layer*** (Drawings) that can be turned on/off in the layers.

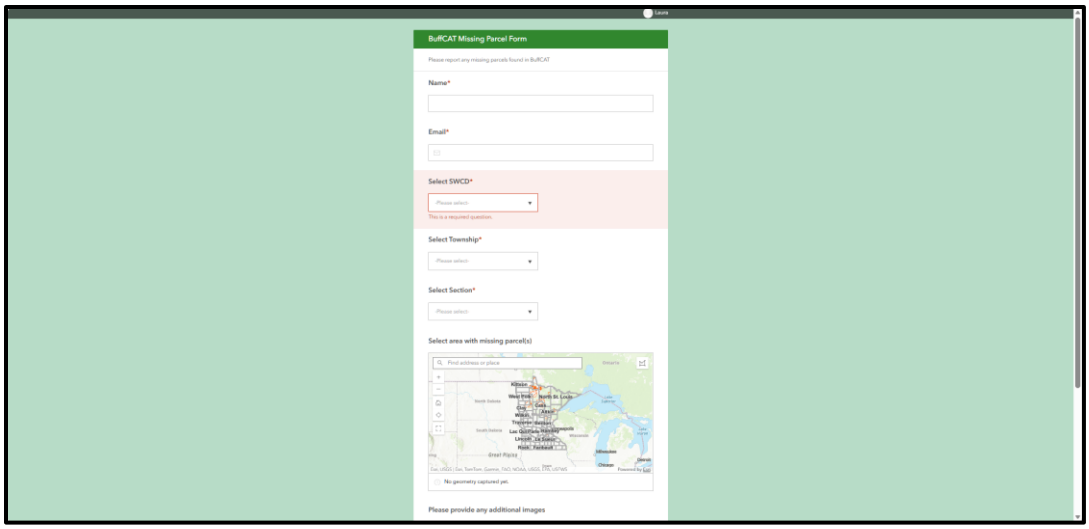
Print

Print tool is on the upper right on the main page user interface, first icon from the right. Depicted as a printer. A printable PDF map may be created by utilizing the print icon. There are two tabs when clicking on the print icon, Print template and results. Print template is where data can be input for the print screen to generate; information such as various paper sizes and orientations, printout title, as well as advanced printing options. The print button can then be clicked, and the resulting PDF will be in the Results Tab where it can be downloaded.

Report Missing Parcels

Report Missing Parcels button is located on the upper right on the main page user interface just below the print, draw, basemap gallery icons. If a parcel(s) subject to the buffer law is missing from BuffCAT, users should utilize this to provide necessary documentation to ensure the parcel is added during maintenance. When users initiate this process, it opens a new webpage to an ArcGIS Survey 123 form which users will need to complete. Fill out all required fields identified by an asterisk, utilize the map to select the location of the missing parcel(s), and upload all relevant images that may be helpful in the “additional images.”

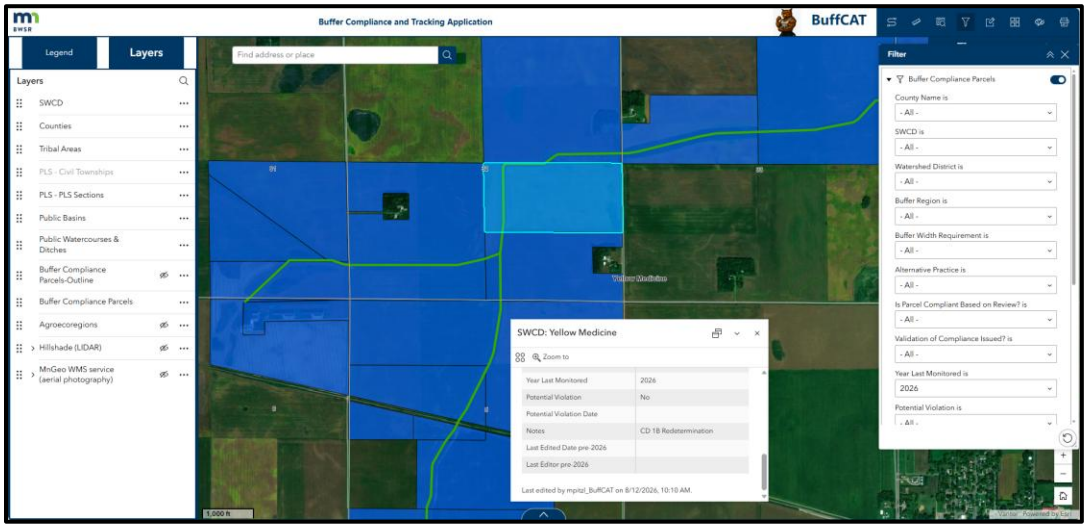
All the submitted data will be sent to and managed by BWSR’s Minnesota IT GIS personnel. During the annual BuffCAT Application maintenance, these missing parcels will be added and made visible in BuffCAT allowing SWCD’s to track buffer compliance.



Zoom

Zoom plus and zoom minus are located on the lower right on the main page user interface. The plus symbol zooms in and the minus symbol zooms out. Zoom may also be accomplished with the mouse utilizing the mouse scroll.

Reviewing and Editing Parcels



BuffCAT Fields

There are editable and non-editable fields for each parcel in the BuffCAT Application. This guidance will explain which fields are required to be edited by the SWCD staff, which are optional and the definition of each field's option. The non-editable fields are managed and updated during the annual BuffCAT Application maintenance if required. For additional information and details pertaining to some fields, refer to the BWSR Buffer Law webpage for any additional information.

Table Summary: Column one has the

Non-Editable Fields:

- County PIN
- State PIN
- SWCD
- County Code
- County Name
- Watershed District Name
- Buffer Region
- Section
- Township
- Range
- Range Direction
- Last Edited Date pre-2026
- Last Editor pre-2026

Editable Fields:

- Buffer Width Requirement
- Alternative Practice
- Is Parce Compliant Based on Review?
- Validation of Compliance Issued?
- Year Last Monitored
- Potential Violation
- Potential Violation Date
- Notes

Buffer Width Requirement

- **50 ft.** = the parcel is adjacent to an identified public water (blue line) on the Minnesota DNR Buffer Protection Map.
- **16.5 ft.** = the parcel is adjacent to an identified public drainage ditch (green line) on the Minnesota DNR Buffer Protection Map.
- **16.5 ft. & 50 ft.** = the parcel is adjacent to both an identified public water (blue line) and public drainage ditch (green line) on the Minnesota DNR Buffer Protection Map.
- **Not Applicable** = the parcel is not subject to the MN Buffer Law requirements.

Alternative Practice (Common Names)

For more detailed information regarding the BWSR Common Alternative Practices, users should refer to BWSR website or by clicking on the link for the alternative practice listed below. If the field is selected as “No Value” or

"Not Applicable", the parcel is then determined to meet buffer compliance either via 50-foot average / 30-foot width minimum on public waters and / or 16.5-foot width on public ditches. If an alternative practice is selected, it is assumed that alternative practice is used on ALL BUFFERS located within the parcel to meet compliance, unless noted in the NOTES section.

- **No Value** = the parcel is not utilizing an approved alternative practice to meet compliance with the buffer law.
- Alt #1 = Minnesota Agricultural Water Quality Certification Program
- Alt #2 = NRCS Filter Strip Standard: MN 393/391 Practice Standards – Public Waters
- Alt #3 = Grassed Waterway/Cultivated Watercourses – Public Waters
- Alt #4a = Negative Slopes or Concentrated Inflow – Public Ditches
- Alt #4b = Glacial Lake Plain Areas – Public Ditches
- Alt #5 = Negative Slopes or Concentrated Inflow – Public Waters
- Alt #6 = Conservation Tillage/Cover Crops with Vegetated Filter Strip – Public Waters
- Decision Support Tool
- **Other** = The parcel is utilizing multiple common alternative practices within the parcel to meet compliance or the SWCD has approved an alternative practice based on Local Site-Specific Landscape Conditions. Use the notes section to add additional details if needed or attach a PDF map.
- **Not Applicable** = The parcel is not using an alternative practice to meet compliance with the buffer law.

Is Parcel Compliant Based on Review?

- **Yes** = all buffers on the parcel have been determined by the SWCD as compliance with the buffer law requirements.
- **No** = the parcel was determined by the SWCD after completing a buffer compliance monitoring or review that it did not meet compliance with buffer law requirements. This does not mean the parcel was issued a Notice of Noncompliance to the enforcement entity.
- **Not Applicable** = the parcel has been determined by the SWCD to be not subject to the buffer law and is not adjacent to either public waters or public ditches as shown on the MN DNR Buffer Protection Map.

Validation of Compliance Issued?

- **Yes** = the SWCD has issued a Validation of Compliance Notice to the landowner indicating that the parcel has been determined compliant. This occurs either when a landowner requests validation of compliance or has resolved a buffer violation follow a determination of noncompliance.
- **No** = the SWCD has not issued a Validation of Compliance Notice for the parcel. This does not mean the parcel is noncompliant.

Year Last Monitored

- BuffCAT users will select the year in which the parcel was reviewed for buffer monitoring and compliance following their local SWCD Buffer Monitoring Plan. This will help aid SWCD staff to track and ensure they are meeting their BWSR Procedure 4: SWCD Reporting and Compliance Monitoring requirements.

Potential Violation

- **Yes** = The SWCD has identified a parcel maybe in violation of the Buffer Law requirements but will be looking at additional available resources before making the final buffer compliance determination. This will typically be used when completing roadside inspections, receiving a buffer violation complaint and/or being notified by the enforcement entity of a buffer violation.
- **No** = The SWCD has determined the buffer compliance status for the parcel and does not need to look at additional available resources.

Potential Violation Date

The purpose of the ***Potential Violation Date*** is to allow the BuffCAT User to input a date when the parcel was identified as potentially being in violation of the buffer law. This field is filterable and can be utilized as a tracking method. Click on the date dropdown, select the correct date and time.

When the parcel has been determined by the SWCD to meet buffer requirements to be compliant with the Buffer Law, users can remove the ***Potential Violation Date,*** since it no longer is relevant. If the user wants to track these dates, it is recommended not to rely on the BuffCAT Application and to utilize some other internal method to track.

Notes

BuffCAT Users are able to input additional notes to provide important details or content about a parcel. The Notes section may be ***required*** in some situations and optional in others. The table below will provide additional details.

Figure 1 Summary: Table describes what BuffCAT Application fields are required vs. optional to input additional information within the Notes field for each parcel. Column one (1) lists the possible BuffCAT Application Field, column two (2) lists whether it is required or optional and column three (3) lists additional information to provide more details.

BuffCAT Application Field	Required vs. Optional	Additional Information
Alternative Practice	Optional	If an alternative practice is selected for a parcel, it is assumed it is used on ALL BUFFERS within that parcel. If false, make necessary notes

		to clearly identify where the alternative practice is applicable.
Alternative Practices "Other"	Required	When selecting ***Other*** as the alternative practice, use the notes section to describe what multiple alternative practices are being utilized to meet compliance on the parcel. Recommended adding a PDF to provide additional information or reference. Example: Parcel utilizing Alt #2 on Buffer 1 and Alt #5 on Buffer 2.
Potential Violation "Yes"	Optional	Can input additional information regarding the potential violation being marked "Yes".
Year Last Monitored	Optional	BuffCAT users can input whether the parcel was reviewed for buffer compliance according to: 1. Required once every three (3) years. 2. Random Spot Inspection 3. Buffer Complaint

Needing Assistance

If a BuffCAT user requires assistance with application issues or has general questions, please email your BWSR Buffer and Soil Loss Specialist. To determine which Buffer and Soil Loss Specialist to contact if unsure, please follow the link here.