590 NM Checklist Report

Auto fills farmer and consultant contacts

Answers for the Plan Year entered in report setup >>>>

SnapPlus will check NA if no manure or organic wastes are applied in plan for 1.c., 1.h., 1.i., 1.n., 1.o., 1.q., 1.s. and 2.a.-2.g.

Be sure to check all answers and fill in any blanks.

Section 1. Use header sections to add comments.

1. Does the plan include the following nutrient application requirements to protect surface and groundwater?  
   a. Determine field nutrient levels from soil samples analyzed by a DATCP certified laboratory.

SnapPlus will check yes for item 1.a. if soil test results are present for every active field.

b. For fields or pastures with mechanical nutrient applications, determine field nutrient levels from soil samples collected within the last 4 years according to 590 Standard (590) and UWEX Pub. A2809, Nutrient Application Guidelines for Field, Vegetable, and Fruit Crops in Wisconsin (A2809) typically collecting 1 sample per 5 acres of 10 cores. Soil tests are not required on pastures that do not receive mechanical applications of nutrients if either of the following applies:
   1. The pasture average stocking rate is one animal unit per acre or less at all times during the grazing season.
   2. The pasture is winter grazed or stocked at an average stocking rate of more than one animal unit per acre during the grazing season, and a nutrient management plan for the pasture complies with 590 using an assumed soil test phosphorus level of 150 PPM and organic matter content of 6%.

SnapPlus will check yes for item 1.b. if all fields comply with soil test age and density requirements in the plan year. Note: SnapPlus is not currently checking for pasture exceptions.
Section 1. Continued

**c.** For **livestock siting permit approval**, collect and analyze soil samples meeting the requirements above in 1. b., excluding pastures, within 12 months of approval and revise the nutrient management plan accordingly. Until then, either option below maybe used:
1. Assume soil test phosphorus levels are greater than 100 ppm soil test P, OR
2. Use preliminary estimates analyzed by a certified DATCP laboratory with soil samples representing > 5 ac/sample.

SnapPlus will always check NA for 1.c., manually correct if it is a siting plan.

**d.** Identify all fields’ name, boundary, acres, and location.

SnapPlus will check yes for 1.d. if field borders are present in SnapMaps for all active fields listed. If not, then it will be left blank.

**e.** Use the field’s previous year’s legume credit and/or applications, predominant soil series, and realistic yield goals to determine the crop’s nutrient **application rates consistent with A2809 for ALL forms of N, P, and K**.

SnapPlus will check yes for 1.e. if the field N and P<sub>2</sub>O<sub>5</sub> application rates from fertilizer and manure are consistent with A2809. Note: SnapPlus is checking that N and P<sub>2</sub>O<sub>5</sub> applied as corn starter fertilizer is at planting and placed subsurface.

**f.** Make no **winter applications of N and P** fertilizer, except on grass pastures and winter grains.

SnapPlus will check yes for 1.f. because SnapPlus does not allow winter fertilizer applications.

**g.** Document method used to determine application rates. Nutrients shall not runoff during or immediately after application.

SnapPlus will check yes for 1.g. if any calibration method is selected on the Farm screen.

**h.** Identify in the plan that **adequate acreage** is available for manure produced and/or applied.

SnapPlus will check yes for 1.h. if the “Remaining volume” for every nutrient source is less than or equal to 10% of the “Available Annual Volume” produced in the prior, current plan, and future years. It will be left blank if any of the 3 years is missing the annual volume or planned applications.
Section 1. Continued

i. Apply a single phosphorus (P) assessment using either the P Index or soil test P management strategy to all fields within a tract when fields receive manure or organic by-products during the crop rotation.

SnapPlus will check yes for 1.i. if there are no compliance messages for the chosen P assessment strategy. These strategies do not apply to fields that only receive P2O5 fertilizer with no manure or organic by-products during the rotation.

j. Use complete crop rotations and the field’s critical soil series to determine that sheet and rill erosion estimates will not exceed tolerable soil loss (T) rates on fields that receive nutrients.

SnapPlus will check yes for 1.j. if Avg. Soil Loss is less than “T” for all fields in the planning year.

k. Use contours; reduce tillage; adjust the crop rotation; or implement other practices to prevent ephemeral erosion; and maintain perennial vegetative cover to prevent reoccurring gullies in areas of concentrated flow.

SnapPlus will leave 1.k. blank if no unfixed field problems are noted in the plan year for the planner to confirm that no ephemeral erosion or gullies exist. SnapPlus will check no if any field has an unrepaired gully or ephemeral erosion listed in Field Problems.

l. Make no nutrient applications within 8’ of irrigation wells or where vegetation is not removed.

SnapPlus leaves 1.l. blank for the planner to confirm if all irrigation or uncropped areas are mapped. If they are mapped, the planner can mark this yes since well buffers and exclusion areas are taken out of spreadable acres.

m. Make no nutrient applications within 50’ of all direct conduits to groundwater, unless directly deposited by gleaning/pasturing animals or applied as starter fertilizer to corn.

SnapPlus leaves 1.m. blank for the planner to confirm if all direct conduits to groundwater are mapped. If they are mapped, the planner can mark this yes since the buffer areas will be taken out of spreadable acres.

n. Make no untreated manure applications to areas within 1000’ of a community potable water well or within 100’ of a non-community potable water well (ex. church, school, restaurant) unless manure is treated to substantially eliminate pathogens.

SnapPlus leaves 1.n. blank for the planner to confirm if all public wells are mapped. The buffer areas for community (municipal) and non-community (public) wells are taken out of manure spreadable acres. Treated manure sources can be applied.

Note: SnapPlus cannot currently calculate the treated manure volumes within the buffer area.

Note: There is no 590 provision for how surface water flows, towards or away from the well. Therefore, mechanical applications of untreated manure are prohibited within circular buffer areas 1000 feet from municipal wells and 100 feet from public wells.
Section 1. Continued

0. Make no manure applications to areas **locally delineated** by the Land Conservation Committee or in a conservation plan as areas contributing runoff to direct conduits to groundwater unless manure is substantially buried within 24 hours of application.

SnapPlus will mark 1.o. NA if all field borders are in counties with no locally delineated layers. Otherwise SnapPlus will leave this blank for the planner to answer if manure/organic by-products are planned to be incorporated within 24 hours of application when a field intersects the locally delineated county layer.

p. Make no applications of **late summer or fall commercial N fertilizer** to the following areas UNLESS needed for establishment of fall seeded crops OR to meet A2809 with a blended commercial fertilizer. Commercial fertilizer N applications shall not exceed 36 lbs. N/acre on:

- Sites vulnerable to N leaching **PRW Soils** (P=high permeability, R= bedrock < 20 inches, or W= wet < 12 inches to apparent water table);
- Soils with depths of 5 feet or less to bedrock;
- Area within 1,000 feet of a community potable water well.

On **P soils**, when **commercial N is applied** for full season crops in **spring and summer**, follow A2809 and apply one of the following:

1. A split or delayed N application to apply a majority of crop N requirement after crop establishment.
2. Use a nitrification inhibitor with ammonium forms of N.
3. Use slow and controlled release fertilizers for a majority of the crop N requirement applied near the time of planting.

SnapPlus will check yes for 1.p. if all fields comply with the above commercial fertilizer nitrogen application requirements on these areas vulnerable to N leaching to groundwater.

q. Limit manure applications in late summer or fall using the lesser of A2809 or the following 590 rates on **PRW Soils**.

- **P and R soils** on **all crops, except annual crops**. Additionally, manure with ≤ 4% dry matter (DM) wait until after soil temp. < 50°F or Oct. 1, and use either a nitrification inhibitor OR surface apply and do not incorporate for at least 3 days.
- **W soils or combo. W soils** on **all crops**. Additionally, manure with ≤ 4% DM on **all crops** use at least one of the following: 1. Use a nitrification inhibitor; 2. Apply on an established cover crop, an overwintering annual, or perennial crop; 3. Establish a cover crop within 14 days of application; 4. Surface apply & don’t incorporate for at least 3 days; 5. Wait until after soil temp. < 50°F or Oct. 1.

**Use ≤ 120 lbs. available N/acre on:**

- **P and R soils** on **annual crops** wait until after soil temp. < 50°F or Oct. 1. Additionally, manure with ≤ 4% DM use either a nitrification inhibitor OR surface apply and do not incorporate for at least 3 days.
- **W soils or combination W soils** receiving manure with ≤ 4% DM on **all crops**.

SnapPlus will check yes for 1.q. if all fields comply with manure nitrogen application requirements on these areas vulnerable to N leaching to groundwater.

r. Use at least one of the following practices on **non-frozen soils for all nutrient applications** within **Surface Water Quality Management Area (SWQMA) = 1000’ of lakes/ponds or 300’ of rivers**: 1. Maintain > 30% cover after nutrient application; 2. Effective incorporation within 72 hours of application; 3. Establish crops prior to, at, or promptly following application; 4. Install/maintain vegetative buffers or filter strips; 5. Have at least 3 consecutive years no-till for applications to fields with < 30% residue (silage) and apply nutrients within 7 days of planting.

SnapPlus will check yes for 1.r. if all fields comply with at least 1 of the 5 listed practices.
Section 1. Continued

s. Limit mechanical applications to **12,000 gals/acre of unincorporated liquid manure or organic by-products with 11% or less dry matter where subsurface drainage is present OR within SWQMA**. Wait a minimum of 7 days between sequential applications AND use one or more of the practice options on non-frozen soils listed in 1.r.1. through 1.r.5.

SnapPlus will check yes for 1.s. if surface application of liquid manure do not exceed 12,000 gallons per acre per application where fields have tile drainage or intersect SWQMA boundaries.

Section 2.

2. When frozen or snow-covered soils prevent effective incorporation, does the plan follow these requirements for winter applications of all mechanically applied manure or organic by-products? This section doesn’t apply to winter gleaning/pasturing meeting 590 N and P requirements.

a. Identify manure quantities planned to be spread during the winter, or the amount of manure generated in 14 days, whichever is greater. *For daily haul systems, assume 1/3 of the manure produced annually will need to be winter applied.*

SnapPlus will leave 2.a. blank for the planner to answer yes or no.

b. Identify manure storage capacity for each type applied and stacking capacity for manure ≥ 16% DM if permanent storage does not exist.

SnapPlus will leave 2.b. blank for the planner to answer yes or no.

Is this manure produced on the farm? Then, please add animal numbers to the Nutrient-screen’s, Manure Production Estimator and transfer volumes to the Nutrient screen. It is needed to show adequate acres and winter manure storage and use. In next year’s plan, manure storage volumes should be noted on the Manure Production Estimator screen.

c. Show on map and make no applications within the SWQMA.

If field borders are present in SnapPlus it will check yes for 2.c. because all winter manure applications can only be planned in the winter spreadable area of the field and not in the winter prohibited spreading area.

d. Show on map and make no surface applications of liquid manure during **February and March** where Silurian dolomite is within 60 inches of the soils surface OR where **DNR Well Compensation** funds provided replacement water supplies for wells contaminated with livestock manure.

SnapPlus will check NA for 2.d., unless these areas intersect any field. SnapPlus will check yes and provide appropriate guidance if the field intersects these areas.
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Section 2. Continued

e. Show on map and make no applications of manure within 300 feet of direct conduits to groundwater.

SnapPlus will check yes for 2.e. if winter manure applications occur on fields that intersect these areas because they are removed from spreadable acres.

Watch for “winter spreadable acres” when planning winter manure applications and note where manure cannot be applied to the entire field in winter. “Winter manure prohibited areas” can be planned for manure applications in other seasons to spread and credit the same rate for the entire field.

f. Do not exceed the P removal of the following growing season’s crop when applying manure. Liquid manure applications are limited to 7,000 g/acre. All winter manure applications are not to exceed 60 lbs. of P2O5/acre.

SnapPlus will check yes for 2.f. if winter manure applications occur and are in compliance with the standard.

g. Make no applications of manure to fields with concentrated flow channels unless using two of the following:
   1. Contour buffer strips or contour strip cropping; 2. Leave all crop residue and no fall tillage; 3. Apply manure in intermittent strips on no more than 50% of field; 4. Apply manure on no more than 25% of the field waiting a minimum of 14 days between applications; 5. Reduce manure app. rate to 3,500 gal. or 30 lbs. P2O5, whichever is less; 6. No manure application within 200 feet of all concentrated flow channels; 7. Fall tillage is on the contour and slopes are lower than 6%

Make no applications to slopes greater than 6% (soil map units with C, D, E, and F slopes) unless the plan documents that no other accessible fields are available for winter spreading AND two of the options 2.g.1. through 2.g.5. are used.

SnapPlus will check yes for 2.g. if 2 practices are planned for all winter applications for fields with concentrated flow channels or slopes greater than 6%.

Yes, electronic signatures can be used for the 2015-590 NM Checklist

The intention of the signature block is to ensure the farmer understands the 2015-590 Standard, some requirements are new. Since the form is a fillable Word document and a SnapPlus report, it makes sense to use an electronic signature.

As noted in Wisconsin Statute, an electronic signature satisfies the signature requirement of the 2015-590 Checklist. s. 137.15, (3) and (4), Wis. Stats. 137.15(3) If a law requires a record to be in writing, an electronic record satisfies that requirement in that law. 137.15(4) If a law requires a signature, an electronic signature satisfies that requirement in that law.
Can you explain why this field flags in 2019 and not 2020?  

The field is in a Surface Water Quality Management Area (SWQMA).

Can you explain how to fix the flag?  

What would unincorporated manure do at this rate in the SWQMA?
Unincorporated manure and compatible with no-till

What would injecting manure do with this rate in the SWQMA?

Which soil, predominant or critical, is used for calculating soil loss for the Sediment and P Trading Reports?

The P and sediment trade reports use the predominant soil so that we don’t exaggerate the pollution reduction for practices for a field. In contrast, for the P Index and soil erosion for NM planning, we use the critical soil (the most erosion-sensitive soil that covers at least 10% of the field) to ensure protection of the more vulnerable parts of the field. You can see all the soil map units for a field and their erosion sensitivity index on the SnapMaps Soils screen.

Helpful Hint: Link to Tillage Explanations from the Cropping screen

For more information on the SnapPlus tillage systems and how to choose one that is representative of the soil disturbance for your tillage system using Soil Tillage Intensity Ratings (STIR), see Matching SnapPlus Tillages.
**New feature: Create rotations and copy crop years forward in the Cropping screen**

The **Add/Copy/Delete Years** button has a new feature that will allow you to insert a rotation into your existing plan.

Click on the **Add/Copy/Delete Years** button and select the **Copy crop years** tab or **Create rotation** tab. There you can copy the Cropping years for the field to extend the rotation or to make a crop rotation to run on other fields.

Click on the **Add/Copy/Delete Years** button and select the **Insert Rotation** tab. There you can insert a rotation at a given year overwriting the existing plans.

**OR** you can select to **not** overwrite and move the existing plans forward.
New feature: Create Nutrient System in the Nutrient Application Planner (NAP) screen

Once your applications are setup for a given crop year, you can save those applications as a nutrient system by clicking on the **Create Nutrient System** button and giving those applications a system name. Now that the system was saved it may be used in another year or for another field by clicking on the **Apply Nutrient System** button and selecting the new system from the list. It can also be used in the rotation wizard.

New feature: Pre-tillage for Silurian dolomite

Pre-tillage soil erosion calculations are available when planning for WPDES permitted farms.

New feature: Manure application records

There is now a column where you may designate whether a nitrogen inhibitor was used with the application.
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New feature: Liquid Waste Storage

Allows you to determine how many days of storage you have or what you might need. You either enter the NRCS table values or define all of your pit storage and link them to nutrient sources on the Manure production estimator screen.

Manure production estimator screen

New feature: Fertilizer sources

The dry and liquid fertilizer sources are now managed from the same grid. The NO$_3$ column displays whether the fertilizer has SR or NO$_3$. And the Density column will only have a value for liquid fertilizers.
New feature: Import crop yields

WPDES farms will now have an option to import their crop yields. The option is only available from the cropping grid by clicking on the **Import Yields** button. This will bring up the Import Crop Yields window where you select the import excel file, verify your data then **Import To SnapPlus**.

Field New feature: spreadable acres

Your spreadable acres may now be imported from an Excell worksheet. Most users should download their spreadable acres from the SnapMaps website but if you’re not using SnapMaps the import is available. Clicking the **Spreadable Acres** button on the fields screen will open the **Manage Field Acres** window. There you can click on the **Import Spreadable Acres** button and another window will open where you can select a file. The values in the file will be loaded into a grid that you can edit and import. Similar to our other import functions.
This year some of the soils have changed. Because of those changes all users should upload their data to the SnapMaps website and then do a download to get the soil changes. After the download you may notice some differences because some of the cells will be orange or, if protected, just bold italic soil symbols.

At this point, if you click on Import, two things will happen. First, you will be prompted to select all cells. If you click on OK, all of the cells will be selected and any orange cells will be imported.

Second, because the soil changes are in protected rows, you will be asked whether you’d like to import the soil differences.

When you click on Yes, you will notice the soil changes have been imported but the slopes and slope lengths still show up as differences bold italic so the values on the fields screen were not overwritten.
Locking for Protection of Verified Data

There are three places where you may lock data to prevent a SnapMaps import from overwriting your verified data. The first two allow you to lock your field characteristics such as soil symbols and series, slope, and slope length. The third has to do with protecting your spreadable/prohibited acres values.

1. **Fields Tab - Verified**: Check this box to indicate you have verified all of the information that is present in this row and do not want it to change upon future importations from the SnapMaps Fields tab. This is useful when you import new information into SnapPlus but do not want the values of a certain field to be overwritten by that information. When the Verified box is checked on the fields screen, the Is Locked box on the SnapMaps Fields tab will also be checked. The reverse is not true. Unchecking the Verified box does not uncheck the Is Locked box.

If at some later date you want to re-enable overwriting, just uncheck the Verified box and the Is Locked box on the SnapMaps Fields tab and the import will proceed as usual.

2. **SnapMaps Fields tab – Is Locked**: Check this box to restrict the importing of data for the given field row.

   ![SnapMaps Fields tab](image)

   By checking this you are telling SnapPlus to ignore the downloaded SnapMaps data and keep what existed before. The highlighting will disappear but the text that is different will be bold.

3. **Fields Screen – Spreadable Acres**: To prevent overwriting your field verified spreadable acres when you import from the SnapMaps Acres tab you must check the Field Verified box on the field spreadable acres screen. To get to the Manage Field Acres screen, go to the Fields screen click on the Spreadable Acres button.
Merge/Split Fields

Fields should be merged or split first on the desktop (SnapPlus) then uploaded to SnapMaps. SnapPlus will automatically merge geometries for fields when a merge occurs. Below are the steps to split and merge fields.

Split a field

Click on Tools > Split a field. The split field dialog box will appear. Select the field to split in the dropdown and then the number of fields and click apply.

You should now see the new split fields. Notice the new fields are active and the old one is not.

Now we must go to SnapMaps to draw the boundaries for these new fields. Click on the SnapMaps tab. Click the download button first to make sure any updates on SnapMaps are downloaded to SnapPlus. Now click upload.

Once the upload finishes click the Website button.

In SnapMaps go to Drawing Tools > Draw a Feature > Field.

Now click on the map and draw the outline of your first field. Now a dialog box should appear with a dropdown of field names to select. You should see your split fields here. Select the field name you wish to use. Repeat the process for all your new split fields. Once you are done drawing your fields go back to SnapPlus and click the Download button from the SnapMaps tab. You should see the new split fields with properties from SnapMaps.
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Merge/Split Fields continued

Merge a field

Click on Tools – Merge fields. Now the merge fields dialog box should appear. Select the fields you want to merge and click Accept.

You will need to pick which field’s cropping data you want to have as the default because these records cannot be blended. Select the default data to preserve and the applications that you want to merge along with the years to merge. Then click Save Data. Please note that it is very difficult for us to merge Daily Log or Records applications correctly, and in some cases this has caused problems. It is best not to merge these records. Rather, export the application record to an Excel file, decide what you want in your new merged field records, and then re-import the records for the merged field.

SnapPlus merges the field geometry without using SnapMaps; however you should verify that the new merged boundaries are correct. Click on the SnapMaps tab. Now click Upload, then click Website. The fields that were merged should now show up as one. If the fields are not contiguous, only one part of the field will have a label.

Upload/Download Explained

Uploading deletes the data in SnapMaps before replacing it with your new information from the desktop portion of SnapPlus. Because of this, an upload should never be done if you have changes you made in SnapMaps that have not been downloaded. It’s always best to try a download before you upload to ensure that you have the most recent version of the maps saved in SnapPlus. Here are some specific times you should be sure to upload:

1. Creating a brand new farm.
2. Working with groups/sub farms/whole farm and going back and forth between all of these.
3. Adding new fields to a farm using SnapPlus.
4. Changing a field name in SnapPlus
5. Merging or splitting a field with geography.
6. Changing plan type between CAFO and 590.
7. Working with thematic mapping.
8. Changing the upload year on the SnapMaps tab.

Downloading changes the data in SnapMaps desktop screen. You should download anytime you:

1. Make a change in SnapMaps (adding, editing or deleting features etc.)
2. A new version of SnapMaps is released so you get the newest data from SnapMaps.
3. Anytime you want to make sure you have the most recent data from SnapMaps.
Adding Pasture Applications to Your SnapPlus NM Plan

Pastures need to be part of the NM plan whether they are grazed during the grazing season, gleaned in the winter, or if nutrients are mechanically applied. An assumed soil test phosphorus level of 150 PPM and organic matter content of 6% can be used for pastures receiving no mechanical nutrient applications, see NM Checklist item 1.b.

**Step 1.** Pick the pasture crop options on the Farm screen to get the correct pasture plant mix and seeding option.

**Step 2.** Add a grazing source to the Nutrient sources screen.

**Step 3.** In the sub tab of the Nutrient sources screen, click on Grazing Herd Setup and enter the number of head for each size of animal you have.

Estimate an application rate per acre for the farm. If you have 900 tons of manure being produced annually from grazing animals and you divide by the 90 acres of pasture you have, then you are aiming for 10 tons per acre as a rate. [900 tons manure ÷ 90 acre=10 tons/ac]

**Step 4.** To calculate how many days the herd needs to be on the pasture or in this case, how long on one acre to give us 5 or 10 tons/acre rate. Use the Grazing Est button in the Nutrient screen or the Cropping screen’s Nutrient Application Planner for the field. Adjust the days on pasture and the percent of each day spent grazing to determine the tons/acre rate.

**Step 5.** Add grazing applications to fields from the Cropping screen, Nutrient System, or use the Rotation Wizard.
Prevent Plant Options for Manure Applications

1. Go with idle land and cover crop, or Small grain cover crop. SnapPlus will not allow manure application though, because these are not harvested and no nutrients are recommended. If manure applications occur for 2019, then answer the flag explaining why you have to apply manure on a crop that is not harvested.

2. Since most of the 2019 prevent plant covers are going to be able to be harvested sometime in the fall for forage, you can use the closest analogous forage crop in SnapPlus (ex. Small grain silage, barlage, oatlage, soybean silage). These will all be able to get a summer application of manure without flagging.

The options below can have summer 2019 or fall manure applications added to the 2020 crop year up to the recommended nitrogen rate (or nitrogen uptake for legumes) with no flag.

3. Pick grass or legumes if they cover the field, then it can have summer manure applied and be harvested.
4. Pick idle land to fall seeding in 2019 crop year and cover crop or fall seed a legume.
5. Pick idle land for 2019 crop year. Pick the 2020 crop and fall-apply the manure.