RIDOT Stormwater Worksheets
Help Document
Worksheets A, B-30%, B-90%, & C

AUGUST 2022

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Worksheet A-Scoping

Cover Sheet	Non-Discharge Areas	**Worksheet A-Scoping**	LID & STUs	Worksheet B-30%	Worksheet B-90%	Worksheet C-As Built

Worksheet A-Scoping (i.e., *Worksheet A*) is the first worksheet of the *Stormwater Design Worksheets* and is used to determine a project's stormwater treatment goal. *Worksheet A* should be completed during initial project scoping.

Summary of Worksheet A

- Ensure that project information at the top of *Worksheet A* (e.g., Date, Prepared By, Project ID, etc.) is populated. Project ID, Location, and Municipality are auto populated from the *Cover Sheet*.

- Use the RIDOT Stormwater Program Web Map[1] to identify the Waterbody ID (Row A), Waterbody Name (Row B), and determine if the waterbody is within a Stormwater Control Plan (SCP) Watershed with Current SCP Results of "<10% IC and no TMDL" (Row E).

- Use the RIDEM Environmental Resource Map[2] Water Quality Standards and Assessments layer to determine if the WBID is impaired (Row C) and, if so, the impairments (Row D).

- Ensure that the **Non-Discharge Area ID**, Waterbody ID (**WBID**), and Design Point (**DP No.**) is populated for all non-discharge areas in the *Non-Discharge Areas* tab for **Worksheet A** to populate correctly.

  - Row G is populated from the *Non-Discharge Areas* tab. This row accounts for existing impervious area that is non-discharging.

  - Row J is populated from the *Non-Discharge Areas* tab. This row accounts for net *increase* in impervious area that is non-discharging.

- Row K is calculated as the difference in post- and pre-construction impervious area and is used to document net *increase* in impervious area (Note net *decreases* will appear as 0 on *Worksheet A* and are accounted for on Row E of *Worksheet B* as pavement removal.

- Row L applies a 50% treatment goal to the disturbed existing impervious area (after accounting for existing impervious areas that are non-discharging) and a 100% treatment goal to post-construction net *increase* in impervious surface (after accounting for net *increase* in impervious areas that are non-discharging).

- Row L will remain blank if there is an error calculating a stormwater treatment goal. Review and update the *Non-Discharge Areas* tab and all inputs if Row L is blank.

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[1] RIDOT Stormwater Program (arcgis.com)
[2] RIDEM Environmental Resource Map (arcgis.com)

Receiving Waterbody Information

The RIDOT Stormwater Program Web Map shows the location of SCP Watersheds across the state, as well as information such as SCP Group and SCP status. Use the RIDOT Stormwater Program Web Map to determine Waterbody IDs (Row A) and Waterbodies (Row B) intersecting the project limits. To do so, click on an SCP Watershed, and review the pop-up window for Waterbody ID and Waterbody Name, as shown below.
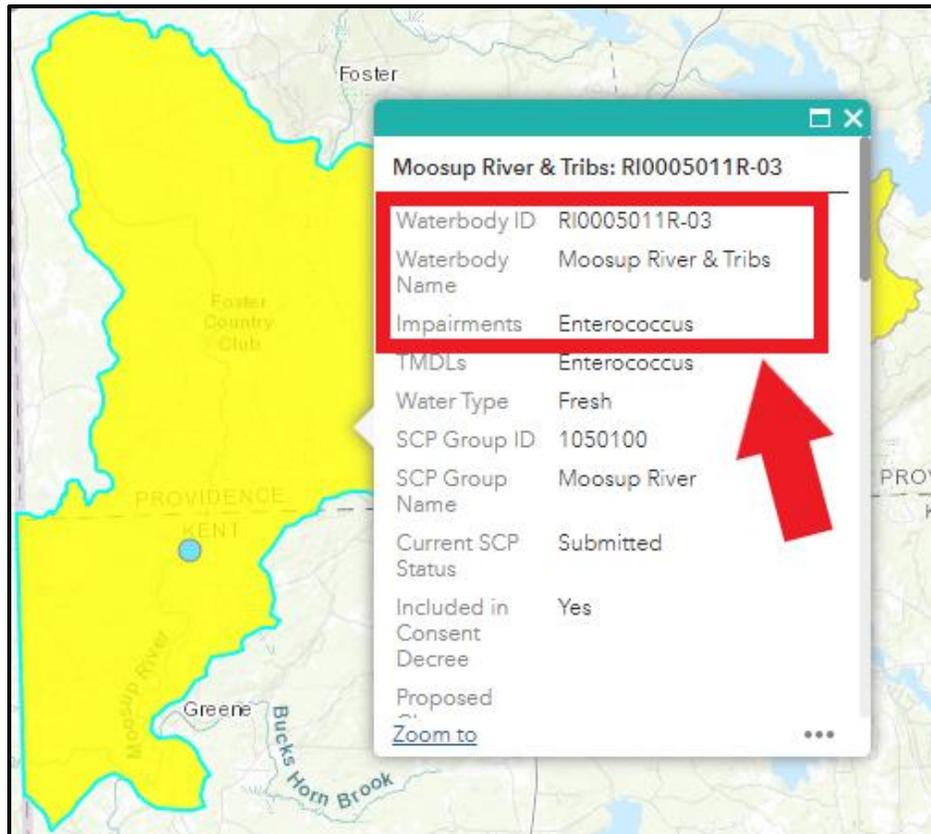
The RIDOT Stormwater Program Web Map also includes impairment information, however RIDOT recommends confirming all waterbody impairments using the RIDEM Environmental Resources Map when populating Rows C & D.

To determine if the Current SCP Results = "<10% IC and no TMDL" (Row E), select an SCP Watershed in the RIDOT Stormwater Program Web Map, and scroll down in the pop-up to locate the Current SCP Results field, as shown below.
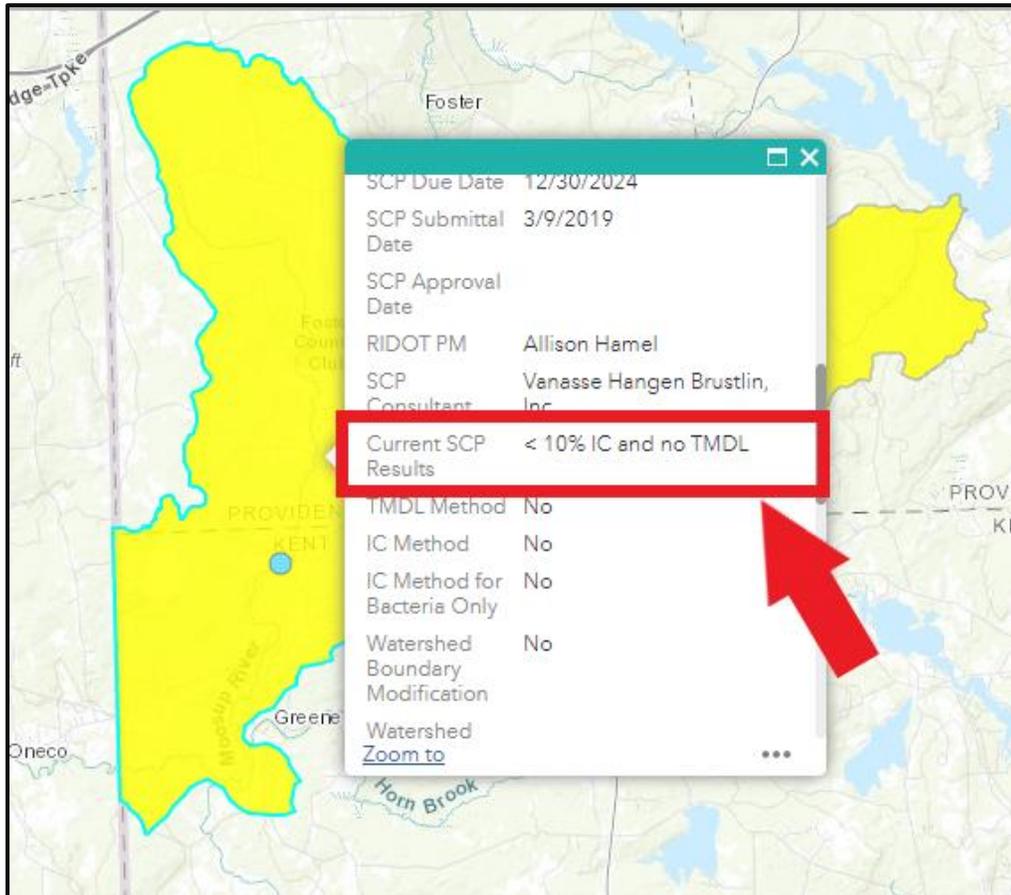
Non-Discharge Areas
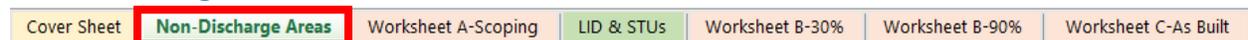
Non-discharge areas are RIDOT areas where runoff does not reach the impaired water body. Non-discharge areas should be identified during project scoping and documented in Table 1 of the **Non-Discharge Areas** tab, as shown below (Rows G and J of **Worksheet A** will be auto populated with areas entered on this tab).

Table 1: Impervious Surface Contributing to a Non Discharging (Rows G & J)														
Project Information			Impervious Area										**Errors and Warnings**	
Non-Discharge Area ID	WBID	DP No.	Non-Discharge Area Definition*	Existing Impervious Surface Contributing to a Non-Discharge Area (ft²)	Net Increase in Impervious Surface Contributing to a Non-Discharge Area (ft²)	Receiving Parcel Pervious Area (ft²)	A	B	C	D	IC : Pervious Cover Ratio	Non-Discharging Impervious Area (acre)	Sum of HSG Percentages does not equal 100%.	Parcel may not qualify as non-discharge area based on the IC:Pervious Cover Ratio and HSG Composition
EX-Non-Discharge-1	RI0007019E-01		Definition 2	43,560	43,560	43,560	60%	20%	10%	10%	2:1			X
EX-Non-Discharge-2	RI0007020E-01B		Definition 1	43,560	43,560	4,000,000	40%	30%	15%	15%	1:45.9	2.00		
EX-Non-Discharge-3	RI0007020R-06		Definition 2	43,560	43,560	800,000	25%	25%	25%	25%	1:9.2	2.00		

Non-discharge areas do not require further evaluation for stormwater treatment because RIDOT runoff does not reach the impaired waterbody. These areas are subtracted from the post-construction impervious surface requiring stormwater treatment used to determine a project's stormwater treatment goal. Non-discharge areas should be identified during project scoping as they affect the project stormwater treatment goal calculation completed as part of **Worksheet A**. Flow patterns should be reviewed to determine if there are non-discharge areas within the project limits.

Non-discharge areas must meet _one_ of the following two definitions:

1. Non-discharge areas have flow paths that discharge to a natural depression in the landscape, or discharge to a wetland that is not hydraulically connected to an impaired water body. Buffering wetlands are considered an extension of an impaired water body and are, thus, not considered non-discharge areas.

   The figure below shows an example of outfalls that release stormwater into an isolated depression, with no outlet (hatched areas). This meets the **Non-Discharge Area Definition 1** because flow discharges to an isolated depression and RIDOT runoff does not reach any impaired waterbodies or buffering wetlands.
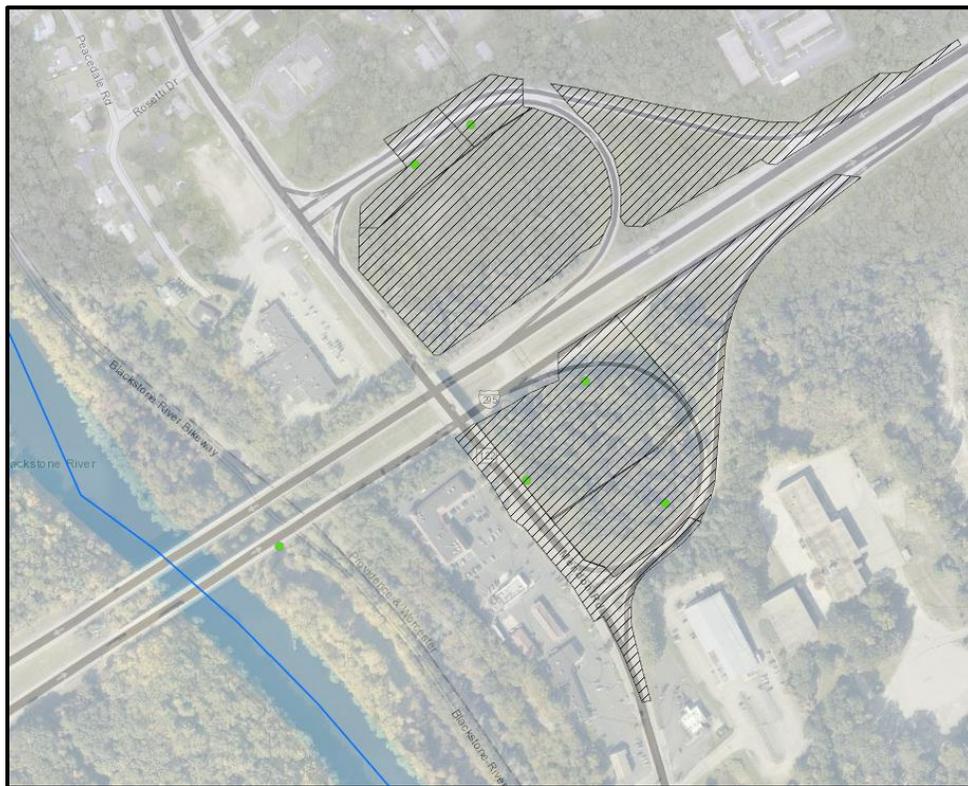

2. A non-discharge area has flow paths over a large, pervious area that do not result in a concentrated flow path. These areas are often where runoff from impervious surfaces sheet flows to adjacent vegetated areas. Under this definition, non-discharge areas are required to meet minimum ratios of the contributing impervious area to the receiving

pervious area over which the flow path travels in order to qualify. These minimum
ratios are based on the primary Hydrologic Soils Group (HSG) of the receiving parcel:

- o HSG A – 1 : 30
- o HSG B – 1 : 50
- o HSG C – 1 : 70
- o HSG D – primarily HSG D soils may **not** be considered non-discharge areas.
  However, these areas may meet the definition of an Impervious Cover (IC)
  Disconnection area (see Worksheet B-30%).

The figure below shows an example of a non-discharge area that meets **Definition 2**, as the
contributing impervious area sheet flows to a large, pervious receiving parcel (the area of
overland flow before reaching the impaired waterbody or buffering wetlands). In this example, the
IC to Pervious Cover Ratio (1:50) meets the requirement for the HSG soils (B) present. Note that if
the receiving pervious parcel were HSG C soils, this area would not quality as non-discharging
because a greater ratio than 1:50 is required but would qualify as an IC Disconnection area.

HSG = B Soils

Contributing Impervious Cover: 0.5 acres
Receiving Pervious Parcel: 25 acres

IC: Pervious Cover Ratio = 1:50

Flow Direction
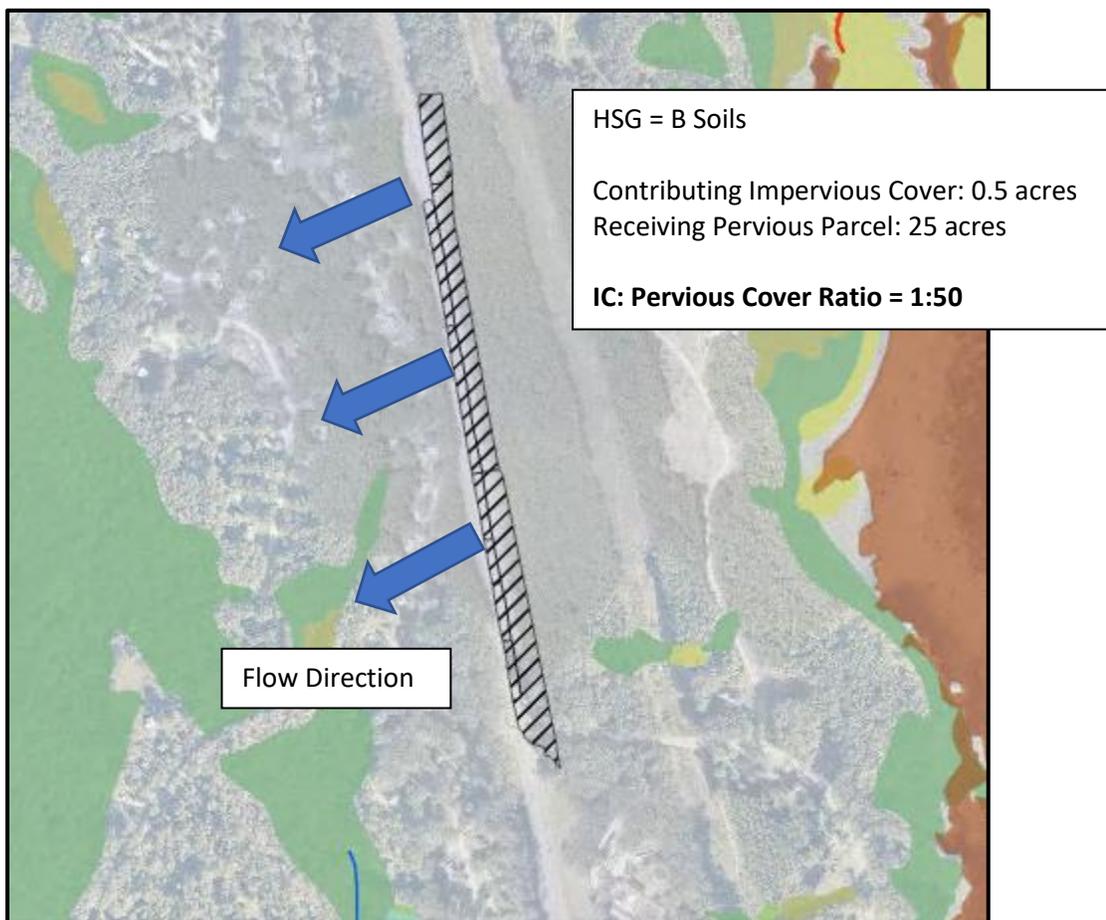
During scoping, review existing hydrography, topographic and wetland data to identify flow paths and
non-discharge areas. The definition type should be documented in the Non-Discharge Area Definition
column in Table 1. An error will appear if 'Definition 2' is selected and the IC : Pervious cover ratio does

not meet the above criteria. Similarly, an error will appear if the HSG soil composition of the receiving pervious parcel does not sum to exactly 100%.

Note **Worksheet A** separates the contributing impervious cover to non-discharge areas into two categories: existing impervious area that is non-discharging (Row G) and net *increase* in impervious area that is non-discharging (Row J). Both existing and net *increases* in impervious surface may contribute to the same non-discharge area (i.e., both represented on one row on the **Non-Discharge Areas tab**) but are distinguished on Worksheet A to accurately calculate the stormwater treatment goal. Existing impervious area that is non-discharging is subtracted from the disturbed area requiring 50% treatment and net *increase* in impervious area that is non-discharging is subtracted from the post-construction net *increase* in impervious area requiring 100% treatment.

Worksheet B-30%

| Cover Sheet | Non-Discharge Areas | Worksheet A-Scoping | LID & STUs | **Worksheet B-30%** | Worksheet B-90% | Worksheet C-As Built |
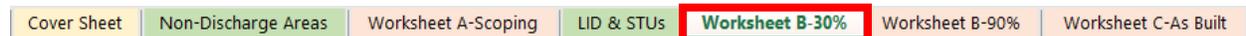
Worksheet B-30% is the second worksheet of the **Stormwater Design Worksheets** and is used to summarize stormwater treatment credit from priority measures including existing STUs, pavement removal, and Impervious Cover (IC) Disconnection. **Worksheet B-30%** should be completed during the 30% design submission. New structural STUs should only be considered after Worksheet B-30% has been completed in order to account for existing STUs and to prioritize identifying pavement removal and IC Disconnection areas.

Summary of Worksheet B-30%

- Ensure that project information at the top of **Worksheet B-30%** (e.g., Date, Prepared By, Project ID, etc.) is populated. Project ID, Location, and Municipality are auto populated from the **Cover Sheet**.

- Rows A & B are auto populated from **Worksheet A**.

- Ensure that the **STU ID**, Waterbody ID (**WBID**), and Design Point Number (**DP No.**) is populated for all STUs in the **LID & STUs** tab.

    - Rows C – E are auto populated from the **LID & STUs** tab. These values provide an estimate for the 30% design submission and may be updated as part of **Worksheet B-90%** development if needed.

- Row F is calculated as the sum of stormwater treatment credit received in Rows C – E.

- Row G is calculated as the difference between the stormwater treatment goal (Row B) and stormwater treatment credit (Row F).

Existing STUs

| Cover Sheet | Non-Discharge Areas | Worksheet A-Scoping | **LID & STUs** | Worksheet B-30% | Worksheet B-90% | Worksheet C-As Built |

Treatment provided by existing STUs should be documented in Table 1 of the **LID & STUs** tab (these controls will be auto populated in **Worksheet B-30%** Row C). Populate one row for each existing STU location to document design parameters and soils evaluation (Columns M through S are required to

calculate water quality treatment credit). STU Treatment Depth (Column T) is calculated as STU storage volume divided by the impervious area directed to the STU. Water quality treatment credit, in units of acres of effective impervious cover reduction (Column U), is calculated using STU treatment curves following RIDOT's methodology for Consent Decree compliance.

Table 1: Summary of Existing STUs (Row C)

	Project Information		Hydrologic Analysis Summary									Water Quality Treatment Calculations						
			Runoff Method Applied for 1.2" Water Quality Event:								Is this STU used to meet DEM Stormwater Requirements (as opposed to only required to meet additional treatment goals set by RIDOT Linear Manual)?*								
STU ID	WBID	DP No.	1.2" Peak Flow		1-yr. Peak Flow		10-yr. Peak Flow		100-yr. Peak Flow			STU Type*	STU Soil Type*	Total Area Directed to STU (ft²)	Impervious Area Directed to (ft²)	Provided Pretreatment Vol. (ft³)	STU Storage Volume (ft³)	Treatment Depth (in.) (e.g., 0.5", 1", etc.)	Effective IC Reduction (acres)
			Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)								
EX-STU-1	RI0007019E-01										No	Oil/Grit Separator	Sandy Loam (1.02 in/hr)	1,000,000	500,000		24,000	0.58	0.00
EX-STU-2	RI0007020E-01B										Yes	Tree Filter	Loamy Sand (2.41 in/hr)	500,000	100,000		30,000	3.60	1.55
EX-STU-3	RI0007020E-01										No	Bioretention Basin	Clay (0.02 in/hr)	500,000	20,000		1,000	0.60	0.22

Existing IC Disconnection Areas

Cover Sheet	Non-Discharge Areas	Worksheet A-Scoping	**LID & STUs**	Worksheet B-30%	Worksheet B-90%	Worksheet C-As Built

Existing IC Disconnection areas should be documented in Table 2 of the **LID & STUs** tab (these areas will be auto populated in **Worksheet B-30%** Row D). Project areas should be evaluated for IC disconnection before being evaluated for structural controls, such as basins or swales.

IC disconnection measures are natural or designed vegetated areas that filter and infiltrate runoff from an impervious surface. Disconnected runoff must be dispersed and not channelized within the receiving parcel. Note: Filter Strips and Qualifying Pervious Area (QPA) are subset types of IC disconnection discussed in the RIDOT Linear Manual.

IC disconnection areas are eligible for treatment credit towards RIDOT's stormwater treatment goal for ratios up to 8 : 1 (impervious : pervious). IC disconnection treatment credit is calculated based on the ratio of impervious contributing area to the pervious receiving area and the hydrologic soil group (HSG) of the receiving parcel, as shown in the example below.
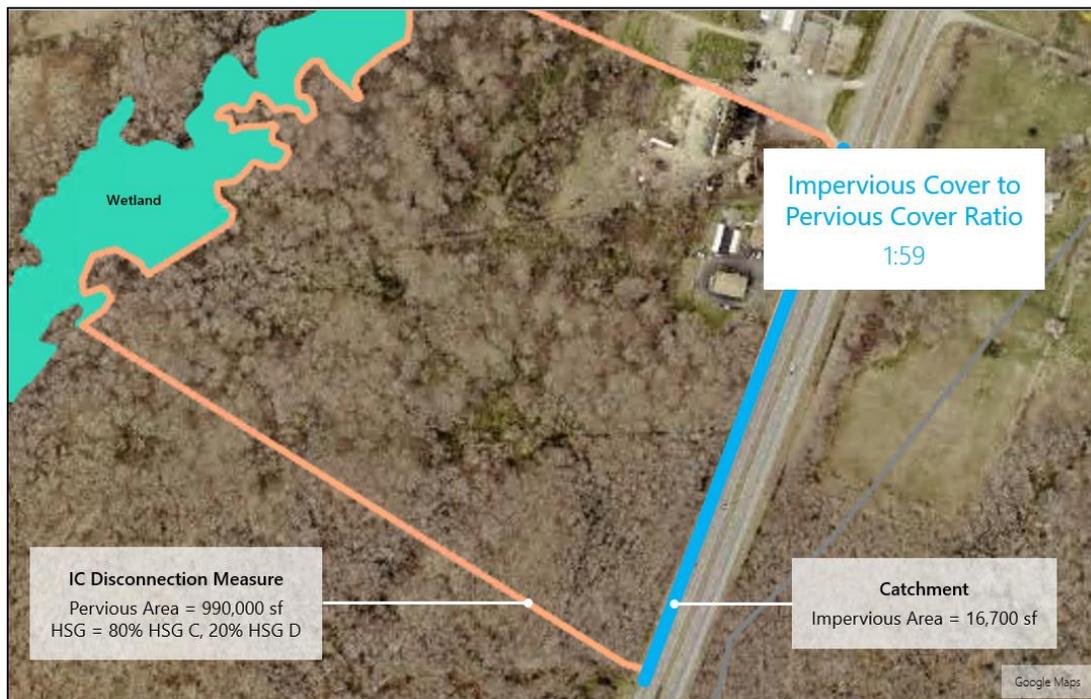
Wetland

Impervious Cover to Pervious Cover Ratio
1:59

IC Disconnection Measure
Pervious Area = 990,000 sf
HSG = 80% HSG C, 20% HSG D

Catchment
Impervious Area = 16,700 sf

Google Maps

An error will appear if the IC : Pervious cover ratio is large enough to meet the criteria for a non-discharge area. <u>In this case, document this area as non-discharging</u>. An error will also appear if the soil composition does not add up to 100%, or the IC : Pervious cover ratio is not eligible for water quality treatment credit (e.g., greater than 8 : 1).

Table 2: Summary of Existing IC Disconnection Areas (Row D)

Project Information			Water Quality Treatment Calculations										Errors and Warnings	
STU ID	WBID	DP No.	Is this STU used to meet DEM Stormwater Requirements (as opposed to only required to meet additional treatment goals set by RIDOT Linear Manual)?*	STU Type*	IC Area (ft²)	Receiving Parcel Pervious Area (ft²)	A	B	C	D	IC : Pervious Cover Ratio	Effective IC Reduction (acre)	Parcel may be non-discharge area (based on the IC:Pervious Cover Ratio and HSG Composition)	Sum of HSG Percentages does not equal 100%.
EX-Disconnection-1	RI0007019E-01		No	IC Disconnection	50,000	200,000	60%	20%	10%	10%	1:4	1.02		
EX-Disconnection-2	RI0007020E-01B		Yes	IC Disconnection	25,000	100,000	35%	10%	35%	20%	1:4	0.44		
EX-Disconnection-3	RI0007020R-06		No	IC Disconnection	4,000	20,000	5%	10%	75%	10%	1:5	0.07		

Pavement Removal

Cover Sheet	Non-Discharge Areas	Worksheet A-Scoping	**LID & STUs**	Worksheet B-30%	Worksheet B-90%	Worksheet C-As Built

Pavement removal should be documented in Table 3 of the **LID & STUs** tab (these areas will be auto-populated in **Worksheet B-30%** Row E).

<u>The first three rows of Table 3 auto-calculate any net *decrease* in impervious area (i.e., pavement removal) from pre- and post-construction impervious areas entered on **Worksheet A**</u>. Additional pavement removal areas identified during project design may be documented in subsequent rows of Table 3. The Effective IC Reduction (acres) for pavement removal is equal to the area of impervious surface removed.

Table 3: Summary of Proposed Pavement Removal (Row E)

Project Information			Water Quality Treatment Calculations	
STU ID	WBID	DP No.	IC Area (ft²)	Effective IC Reduction (acre)
From Worksheet A	RI0007019E-01		0	0.00
From Worksheet A	RI0007020E-01B		0	0.00
From Worksheet A	RI0007020R-06		0	0.00
PR-Pavement-1	RI0007019E-01		5,000	0.11
PR-Pavement-2	RI0007020E-01B		2,000	0.05
PR-Pavement-3	RI0007020R-06		1,000	0.02

Worksheet B-90%

Cover Sheet	Non-Discharge Areas	Worksheet A-Scoping	LID & STUs	Worksheet B-30%	**Worksheet B-90%**	Worksheet C-As Built

Worksheet B-90% is the third worksheet of the **Stormwater Design Worksheets** and is used to summarize stormwater treatment credit from all existing and proposed stormwater controls. **Worksheet B-90%** should be completed during the 90% design submission. <u>Treatment using measures such as</u>

redirecting drainage to a non-discharge or IC Disconnection area and upgrading existing STUs (Tier 1), should be evaluated before new structural STUs (Tiers 2 and 3) are proposed. STUs should not be proposed within areas identified as non-discharging, as these areas do not require additional stormwater treatment or evaluation.

Summary of Worksheet B-90%

- Ensure that project information at the top of **Worksheet B-90%** (e.g., Date, Prepared By, Project ID, etc.) is populated. Project ID, Location, and Municipality are auto populated from the **Cover Sheet**.

- Rows A & B are auto populated from **Worksheet A**.

- Ensure that the **STU ID**, Waterbody ID (**WBID**), and Design Point (**DP No.**) is populated for all STUs in the **LID & STUs** tab.

  - Rows C – K are auto populated from the **LID & STUs** tab. Existing STUs (Row C), Existing IC Disconnection (Row D), and Pavement Removal (Row E) may be updated from the 30% design submission if necessary.

- Prioritize treatment using measures such redirecting drainage to non-discharge (Row F) and IC Disconnection areas (Row G).

- Upgrades to existing STUs (Row H) are considered Tier 1 STUs and should be evaluated before new structural STUs are proposed.

- Row L is calculated as the sum of stormwater treatment credit received in Rows C – K.

- Row M is calculated as the difference between the stormwater treatment goal (Row B) and total stormwater treatment credit (Row L).

30% Submission Review

| Cover Sheet | Non-Discharge Areas | Worksheet A-Scoping | **LID & STUs** | Worksheet B-30% | Worksheet B-90% | Worksheet C-As Built |

Treatment provided by existing STUs, existing IC Disconnection areas, and pavement removal documented during the 30% design submission is auto populated onto **Worksheet B-90%** (Rows C – E). If changes or updates are necessary, update the **LID & STUs** tab for these areas and **Worksheet B-90%** will reflect most recent values.

Redirecting Drainage to a Non-Discharge Area

| Cover Sheet | Non-Discharge Areas | Worksheet A-Scoping | **LID & STUs** | Worksheet B-30% | Worksheet B-90% | Worksheet C-As Built |

Treatment provided by re-routing existing drainage to non-discharge areas should be documented in Table 4 of the **LID & STUs** tab (these areas will be summarized in Row F). Review hydrography, topographic and wetland data to identify flow paths and potential opportunities to redirect or reconfigure RIDOT drainage systems to an area that would qualify as non-discharging. When redirecting drainage to a non-discharge area, the receiving pervious area must meet one of the two definitions of non-discharge areas discussed above.

The definition type should be documented in the Non-Discharge Area Definition column in Table 4. An error will appear if 'Definition 2' is selected and the IC : Pervious cover ratio does not meet the criteria.

Similarly, an error will appear if the soil composition does not add up to 100% or is composed primarily of HSG D soils.

Table 4: Summary of Proposed Non Discharge Areas (Row F)

Project Information				Water Quality Treatment Calculations										Errors and Warnings	
Non-Discharge Area ID	WBID	DP No.	Is this Non-Discharge Area used to meet DEM Stormwater Requirements (as opposed to only required to meet additional treatment goals set by RIDOT Linear Manual)?*	Type*	Non-Discharge Area Definition*	IC Area (ft²)	Receiving Parcel Pervious Area (ft²)	A	B	C	D	IC : Pervious Cover Ratio	Effective IC Reduction (acre)	Sum of HSG Percentages does not equal 100%.	Parcel may not qualify as non-discharge area based on the IC:Pervious Cover Ratio and HSG Composition
PR-Non-Discharge-1	RI0007019E-01		Yes	Non-Discharge	Definition 2	8,000	1,000,000	60%	20%	10%	10%	1:125	0.18		
PR-Non-Discharge-2	RI0007020E-01B		No	Non-Discharge	Definition 2	4,500	500,000	80%	5%	5%	10%	1:111.1	0.10		
PR-Non-Discharge-3	RI0007020R-06		Yes	Non-Discharge	Definition 1	2,000	120,000	23%	64%	10%	3%	1:60	0.05		

Redirecting Drainage to an IC Disconnection Area

| Cover Sheet | Non-Discharge Areas | Worksheet A-Scoping | **LID & STUs** | Worksheet B-30% | Worksheet B-90% | Worksheet C-As Built |

Treatment provided by re-routing existing drainage to IC Disconnection areas should be documented in Table 5 of the **LID & STUs** tab (these areas will be summarized in Row G). Review hydrography, topographic and wetland data to identify flow paths and potential opportunities to redirect or reconfigure RIDOT drainage systems to an area that would qualify as IC Disconnection. Disconnected runoff must be dispersed and not channelized within the receiving parcel.

An error will appear if the IC : Pervious cover ratio is large enough to meet the criteria for a non-discharge area. In this case, document the area as redirecting drainage to a non-discharge area. An error will also appear if the soil composition does not add up to 100%, or the IC : Pervious cover ratio is not eligible for water quality treatment credit (e.g., greater than 8 : 1).

Table 5: Summary of Proposed IC Disconnection Areas (Row G)

Project Information				Water Quality Treatment Calculations									Errors and Warnings	
STU ID	WBID	DP No.	Is this STU used to meet DEM Stormwater Requirements (as opposed to only required to meet additional treatment goals set by RIDOT Linear Manual)?*	STU Type*	IC Area (ft²)	Receiving Parcel Pervious Area (ft²)	A	B	C	D	IC : Pervious Cover Ratio	Effective IC Reduction (acre)	Parcel may be non-discharge area (based on the IC:Pervious Cover Ratio and HSG Composition)	Sum of HSG Percentages does not equal 100%.
PR-Disconnection-1	RI0007019E-01		No	IC Disconnection	20,000	200,000	55%	30%	10%	5%	1:10	0.44		
PR-Disconnection-2	RI0007020E-01B		Yes	IC Disconnection	20,000	200,000	10%	33%	24%	33%	1:10	0.39		
PR-Disconnection-3	RI0007020R-06		No	IC Disconnection	20,000	200,000	25%	0%	45%	30%	1:10	0.38		

Structural STUs

| Cover Sheet | Non-Discharge Areas | Worksheet A-Scoping | **LID & STUs** | Worksheet B-30% | Worksheet B-90% | Worksheet C-As Built |

Treatment provided by proposed structural STUs should be documented in Table 6 of the **LID & STUs** tab and will be auto populated in Rows H – K, sorted by STU Tier (1, 2 or 3) and STUs outside the project limits.

STU Treatment Depth is calculated as STU storage volume divided by impervious area directed to the STU. Water quality treatment credit, in units of acres of effective impervious cover reduction, is calculated using STU treatment curves following RIDOT's methodology for Consent Decree compliance.

Table 6: Summary of Proposed STUs (Rows H - K)

Project Information			Hydrologic Analysis Summary											Is this STU used to meet DEM Stormwater Replacement...	STU Within the Project Limits?	STU Type*	Is this an Upgrade to an Existing STU?**	STU Tier	STU Soil Type*	Total Area Directed to STU (ft²)	Impervious Area Directed to (ft²)	Provided Pretreatment Vol (ft³)	STU Storage Vol (ft³)	Treatment Depth (in.)	Effective IC Reduction (x base)	Summary of Soils to Evaluate STUs							
			1.2" Peak Flow		1-yr. Peak Flow		10-yr. Peak Flow		100-yr. Peak Flow																	Test Pit ID		Depth of Boring/Test Pit (ft.)	Top of Filter Elev. (ft.)	SHGT Elev. (ft.)	Separation Distance (ft.)	Hydrologic Soil Group A, B, C or D	ExFiltration Rate (in/hr)
STU ID	WBID	DP No.	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)															Primary	Secondary						
PR-STU-1	R100070195-01													Yes	Inside the Project Limits	Bioretention Basin	No	Tier 3	Sandy Loam (1.02 in/hr)	20,000	15,000		5,000	4.00	0.24								
PR-STU-2	R100070200-01B													Yes	Inside the Project Limits	Infiltration Gutter	No	Tier 2	Sand (8.27 in/hr)	10,000	2,500		400	1.92	0.06								
PR-STU-3	R100070200R-06													No	Inside the Project Limits	Infiltration Basin	No	Tier 2	Loam (0.52 in/hr)	2,500	2,500		200	0.96	0.06								
PR-STU-4	R100070195-01													No	Outside the Project Limits	Sand Filter	Yes	Tier 1	Sandy Loam (1.02 in/hr)	45,000	20,000		16,000	3.60	0.31								
PR-STU-5	R100070200E-01B													Yes	Outside the Project Limits	Leaching Basin	Yes	Tier 1	Clay (0.02 in/hr)	2,000	1,500		600	4.80	0.00								

Tier 1 STUs

Upgrades to existing STUs are classified as Tier 1. Existing STUs should be evaluated for opportunities to enhance STU function and increase water quality treatment credit (e.g., redesigning an existing wet pond to function as an infiltration basin, or expanding the storage capacity of an STU). To document an upgrade to an existing STU in Table 6, set Is this an Upgrade to an Existing STU? = 'Yes' and document design parameters, hydrologic analysis, and soils evaluation for the site.

Tier 2 & 3 STUs

Proposed STUs are classified as either Tier 2 or Tier 3 depending on STU Type. Treatment provided by Tier 2 & 3 STUs should be documented in Table 6 of the **LID & STUs** tab. Set Is this an Upgrade to an Existing STU? = 'No' and document design parameters, hydrologic analysis, and soils evaluation for each site. STU Tier will be auto populated based on the selected STU Type.

STUs Outside the Project Limits

Treatment provided by STUs outside the project limits should also be documented in Table 6 of the **LID & STUs** tab. To document treatment provided by STUs outside the project limits, set STU Within the Project Limits? = 'Outside the Project Limits' and document design parameters, hydrologic analysis, and soils evaluation for each site.

Worksheet C-As Built

| Cover Sheet | Non-Discharge Areas | Worksheet A-Scoping | LID & STUs | Worksheet B-30% | Worksheet B-90% | **Worksheet C-As Built** |

Worksheet C-As Built is the fourth worksheet of the **Stormwater Design Worksheets** and is used to document as-built conditions of stormwater treatment credit. **Worksheet C-As Built** should be populated after construction is complete to reflect as-built conditions, which may be different from design plans.

Summary of Worksheet C-As Built

- Ensure that project information at the top of **Worksheet C-As Built** (e.g., Date, Prepared By, Project ID, etc.) is populated. Project ID, Location, and Municipality are auto populated from the **Cover Sheet**.

- Ensure that the **STU ID** and Waterbody ID (**WBID**) is populated for all STUs in the **LID & STUs** tab.

- Ensure that the **LID & STUs** tab is updated to reflect as-built conditions, including final STU types, storage volumes and soil infiltration rates.