



NORTH CAROLINA
Department of Transportation

Project's Stream & Wetland Impacts Data Collection for the Mitigation Process

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CLEAR Lunch and Learn

Connecting people, products and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina

Overview

- 1. What is Stream and Wetland Mitigation?**
- 2. Why we need to Mitigate for Stream & Wetland Impacts?**
- 3. Developing 10-year STIP and non-STIP project impact projections.**
- 4. Updating the Project Impacts and the New Tool.**

What is Stream and Wetland Mitigation?



What is Stream and Wetland Mitigation?

Purpose and Benefits:

Improve water quality through nutrient reduction, restore habitat, natural flow regimes, erosion/ flood control, and stabilize banks.

Compensatory Mitigation

The process of restoring, enhancing, or creating aquatic resources to offset negative impacts to streams and wetlands that cannot be avoided.

Types of Compensatory Mitigation

- 1. Restoration** – Physically changing the floodplain connection, realignment of channel, to restore natural equilibrium for streams or re-establishing a wetland.



R-2413A Site 2 Lower

*In general, restoration receives
1:1 mitigation credits*



Types of Compensatory Mitigation

2. **Enhancement** – Improving the function of an existing wetland or stream. Adding vegetation, woody debris, and/or structures to improve the streams water quality, flow and habitat.

In general, these get 3:1 mitigation credits

May 2008



July 2012



Types of Compensatory Mitigation

3. **Preservation** – Fencing out or making the drainage area of the functional stream or wetland into a conservation area.



4. **Establishment / Creation** – Creating a **wetland** where one does not currently exist.
- Using topography, evidence of hydric soils, when stream is elevated, etc.

In general, preservation and establishment receive 10:1 mitigation credits

The Sources of Stream and Wetland Mitigation

Three Sources for Compensatory Mitigation

1. Division of Mitigation Services (DMS) mitigation
2. Private bank credits
3. On-site mitigation (NCDOT)

NC DMS is main source of mitigation for NCDOT impacts

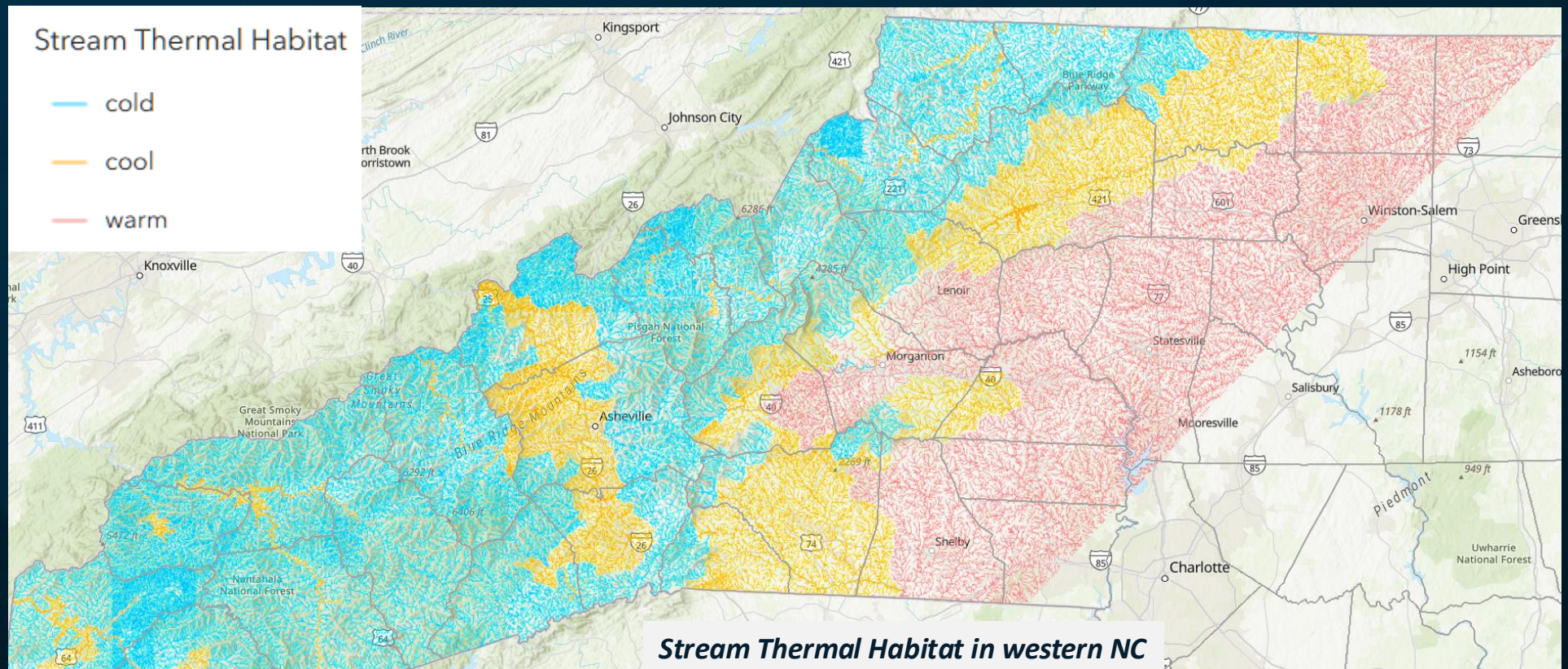
NCDOT offsets the unavoidable stream, and wetland impacts with mitigation credits primarily from NC Department of Environmental Quality, Division of Mitigation Services (NCDEQ-DMS).

2016 NCDEQ-DMS and NCDOT MOA

- Sets forth business operations between the two agencies.
- Reporting requirement for NCDOT to deliver 7-year STIP Impact Projections for wetlands and streams by February 1st annually. (March 1st -2025 and moving forward)
- Impacts to streams as Cold, Cool, or Warm (measured in Linear Feet)
- Impacts to wetlands as Riparian, Non-Riparian, or Coastal Marsh (measured in acres)
- Mitigation in the ground prior to **roadway project construction**
- We provide impact estimates to DMS far enough in advance for them to locate and procure mitigation credits for DMS's Full-Delivery Process.

Types of Stream Impacts for Compensatory Mitigation

1. **Cold** – Streams are found in western NC, in 27 counties.
2. **Cool** – Streams are found in western NC, in 30 counties.
3. **Warm** - Most of the state east of the mountains are classified as warm.



Types Wetland Impact for Compensatory Mitigation

Coastal Marsh

- Low-lying land areas that are flooded by lunar or wind tides in the coastal plain.



Riparian Wetland

- Riparian areas along river edges, streams, lakes or other water bodies that receive overbank flooding.



Non-Riparian Wetland

- Wetlands that receive water from precipitation only.

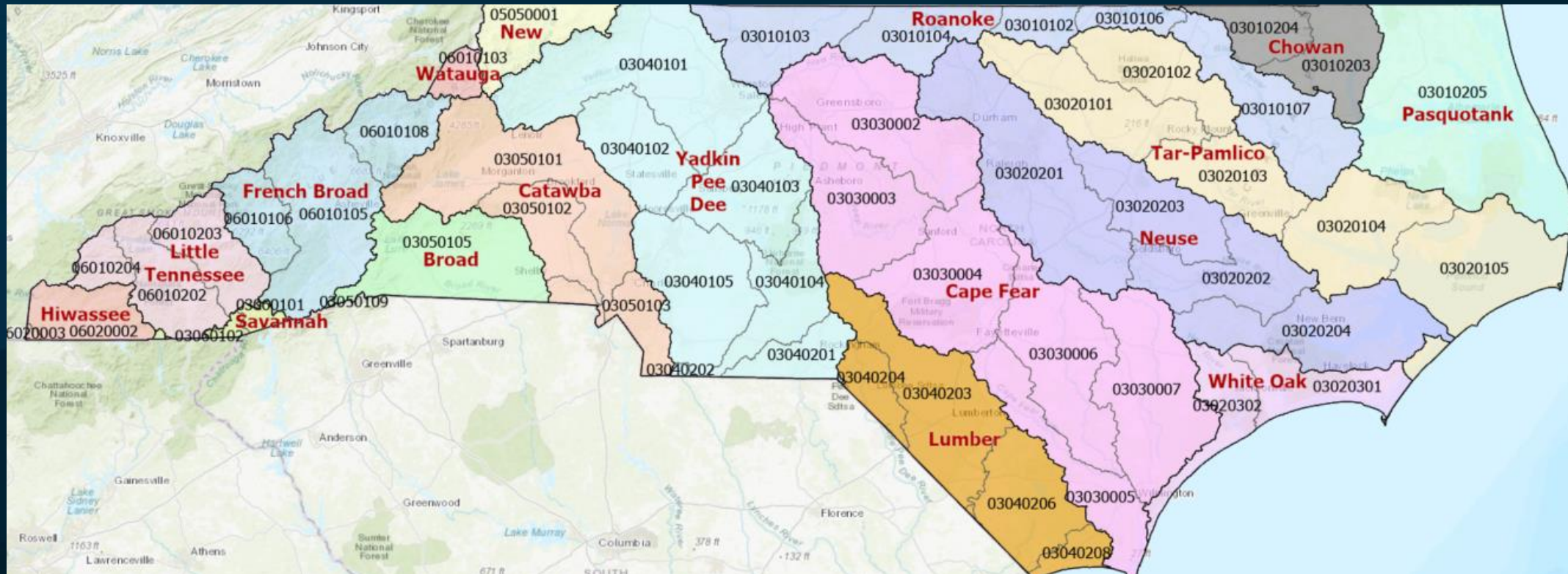


Impacts must be mitigated within the same Hydrologic Unit if On-Site is not applicable

HUC-8: Is the USGS 8-Digit Hydrologic Unit Code

Watersheds are delineated by USGS (US Geological Survey), based on hydrologic features.

- NC has 53 sub-watersheds in NC, 17 River Basins



Example Mitigation Site

Before Stream Restoration



R-2413A Site #2, Guilford County, On-Site mitigation in the Cape Fear 02

Example Mitigation Site

During Construction



R-2413A, Guilford County, On-Site mitigation in the Cape Fear 02

Example Mitigation Site

After Stream Restoration



R-2413A, Guilford County, On-Site mitigation in the Cape Fear 02

Example – Standard Restoration Costs

Cost per credit? 1 credit is the unit of measure.

- Stream (linear foot)
- Wetlands (acre)

Statewide Stream & Wetland ILF Program Rates for Standard Service Areas

Service Area	Mitigation Type	DMS Rate Per Credit (through 6/30/2025)
Statewide Standard	Stream	\$738.84
Statewide Standard	Freshwater Wetlands (Riparian & Non-Riparian)	\$76,838.45
Statewide Standard	Coastal Wetlands	\$757,898.35

<https://www.deq.nc.gov/about/divisions/mitigation-services/customers/current-rate-schedules>

Why We Need to Mitigate for Stream & Wetland Impacts

The Rules & Regulations

NCDOT manages roadway projects that have unavoidable impacts on streams, wetlands and buffers that require compensatory mitigation to obtain permits.

Regulatory:

June 2008 - Federal Mitigation Rule

- USEPA and USACE implemented rules governing all forms of compensatory mitigation.
- Compensatory-mitigation requirements are connected to the Federal **Clean Water Act**.
- Required watershed assessments.
- Standards for mitigation banks, in-lieu fee, and permittee responsible mitigation.

State and Federal Permits

- Satisfies the 404 / 401 Permit and Water Quality Certification requirements which regulate impacts to Jurisdictional Streams & Wetlands.

Developing the 10-year STIP & non-STIP project impact projections

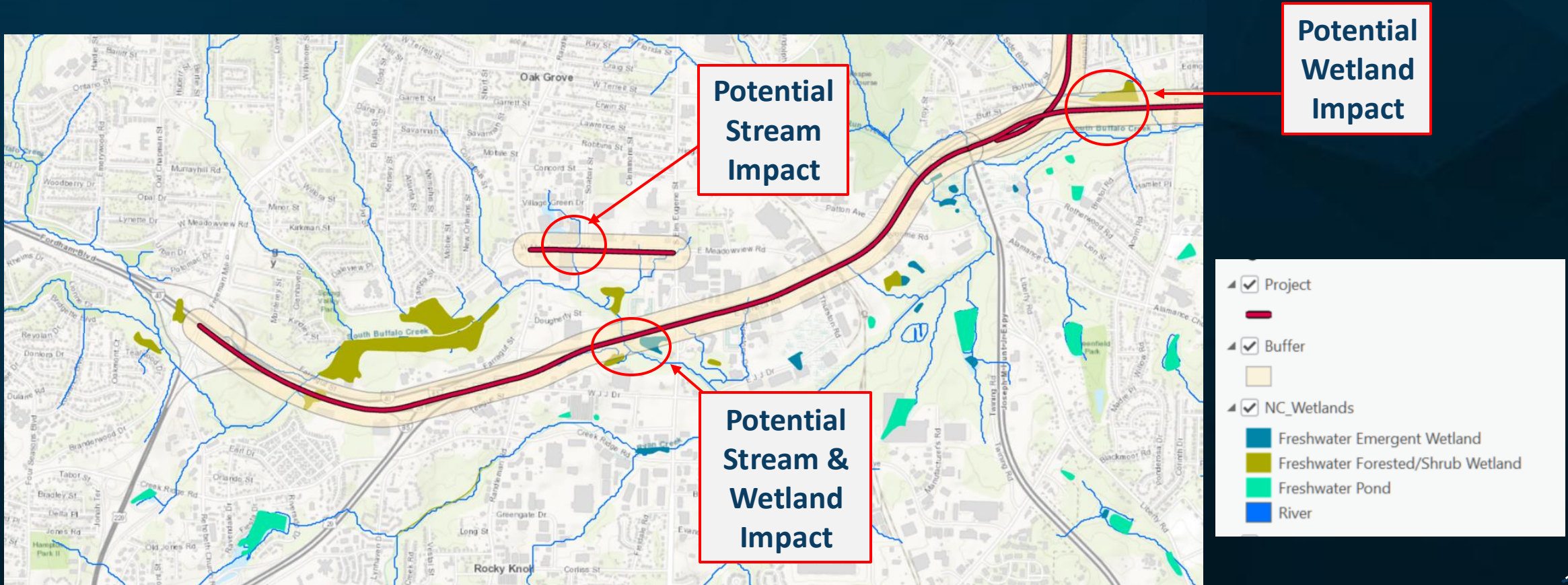
Developing the 10-year STIP & non-STIP project impact projection

Information that we collect

- STIP list and geodatabase draft – STIP office
- CPL (Comprehensive Project List) – Pulled from SAP
- DMS mitigation acceptance letters – Mit & Mod maintains a database
- Contracted private bank credits available - Mit & Mod maintains a database
- GIS stream map layer – NCDOT NC ATLAS Hydrology
- GIS wetland map layer – CAMA and NWI wetland layer
- **Updates to stream & wetland impacts as project moves through preconstruction**
 - This needs the participation of PMs, PEFs, and/or environmental officers

When new transportation project is identified

- We calculate impact estimates using GIS analysis for new projects each year
- Some new projects have impact estimates from Express Design



Updates to Project impact projections during Preconstruction

Traditional Method

After the initial GIS or Express Design impact estimate, we would coordinate with Central Project Managers, Division Project Managers (PMs), and their inclusive Professional Engineer Firm (PEF) to update projected wetland and stream impacts when available.

- **Previously, an email has been sent in October asking for PMs and PEFs to email all impact reports for all projects.**
- **Required Project Team to go through project history, documents, and design files.**
- **This was tedious and time consuming.**

Updates to Project Impact Projections during Preconstruction

New Project Impact Analysis Tool for PMs & PEFs

1. You will need a NCID
2. Gaining Access to GO! NC
3. Project Impact Analysis Tool

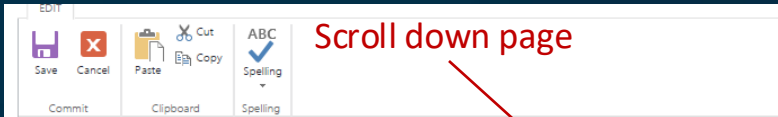
You will need a NCID

[NCDOT Procedure Guidance for External Users @](#)

<https://it.nc.gov/support/ncid/individuals-business-users>

Gaining Access by setting up your GO!NC Account

<https://connect.ncdot.gov/site/GONCUserAgreement/Lists/AcknowledgedAgreements/newform.aspx?IsDLG=1&source>



NCDOT GO!NC and Portal User Agreement

Thank you for your interest in obtaining a GO!NC/AGOL U...
Prior to obtaining an account, you must agree to the NCDOT C...

Please review the agreement below and if you agree, type the save. You will receive a confirmation email and notification of unit.

NCDOT GO!NC and Portal User Agreement

All NCDOT employees, NCDOT Contractors, and NCDOT Ven ArcGIS Portal agree to use the software in accordance with the Standards and Policies (the Policy). Failure to adhere to this revocation of an employee's privilege to use GO!NC ArcGIS O...

- Employee must ensure that all content adheres to the pt their shared content.
- Employee is wholly responsible for the quality, clarity, ar
- Employee shall ensure no "Confidential" or "Sensitive" c maintained, transmitted, or shared in or with GO!NC.
- Employee acknowledges that items not complying with t automatically by scripts or manually by GO!NC administ
- Employee will not adopt, take over, use, share or control have left NCDOT service.
- Employee will not host and share public data they do no obtained from the data owner or data steward.
- Employee will not set hosted data to allow data downloa data owner or data steward without permission from the
- Employee acknowledges there is no uptime guarantee fi
- Employee acknowledges no content or function in ArcGI tolerant and that content can be accidentally deleted or co
- Employee acknowledges there is no delete protection or ArcGIS Online and that content can be accidentally delete
- Employee acknowledges that any data originating in Arc and secured to protect against accidental deletion or cor
- Employee shall monitor the usage of products they have obsolete or no longer used.

- Any publicly shared content shall be requested at <https://connect.ncdot.gov/site/Website-Requests> and reviewed by the NCDOT Communications, Community Outreach & Public Engagement Unit.

Agreeing to this form, as described above, authorizes me to use the NCDOT ArcGIS Online and Portal systems. This authorization may be terminated by the NCDOT at any time. I have read, understand, and agree to comply with the Policy in order to maintain this authorization of use.

Selecting a role: What's the difference?

When requesting, please specify the role needed. This chart illustrates the different available capabilities in each role.

Capabilities	Viewer	Mobile Worker	Creator
View your team's private maps and applications	X	X	X
Edit existing data or add new data (including submitting to internal Field Maps and Survey123)		X	X
Create your own data, maps, and applications from scratch			X
Export data and reports from Survey123 or maps			X

At minimum

These roles can be upgraded or downgraded in the future if needed. Please choose the role that fits your current role and duties.

The Form at bottom of Page

Email:

Unit/Department:

Supervisor Name:

NCID *:
This is what you'll use to log into GO!NC/AGOL.

Agree *: Agree
I agree to the NCDOT GO!NC and Portal User Agreement.

Agreed On:

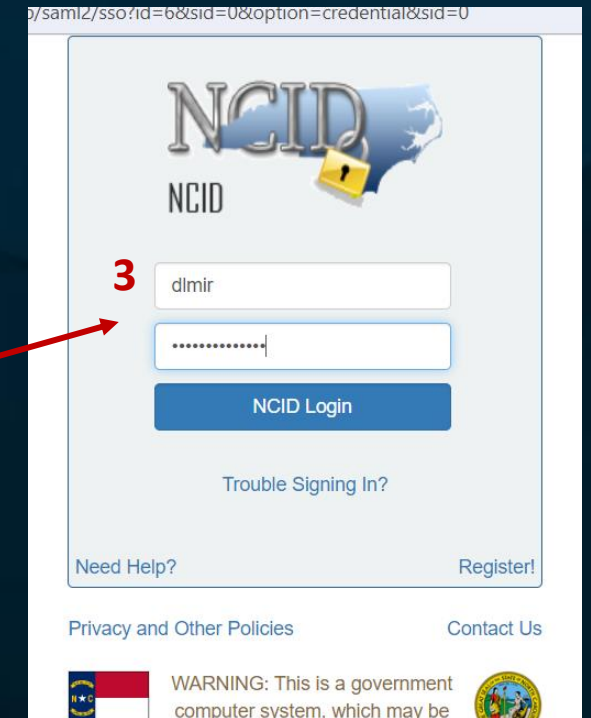
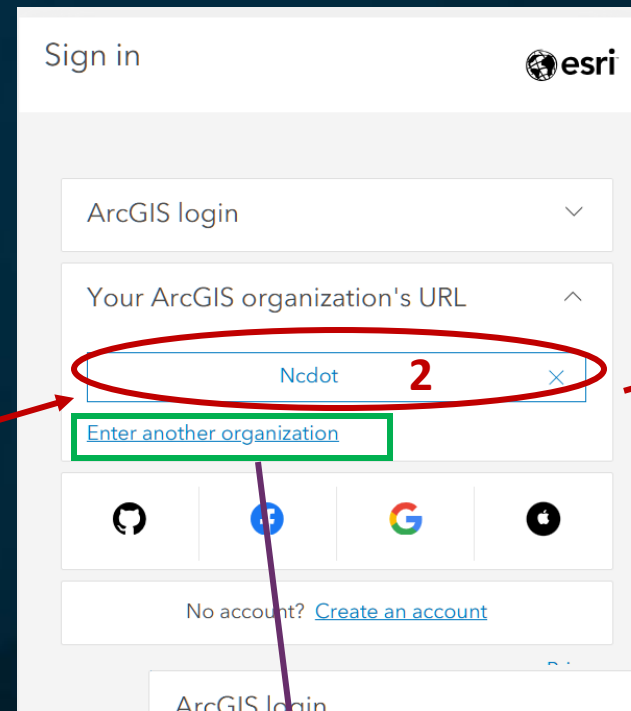
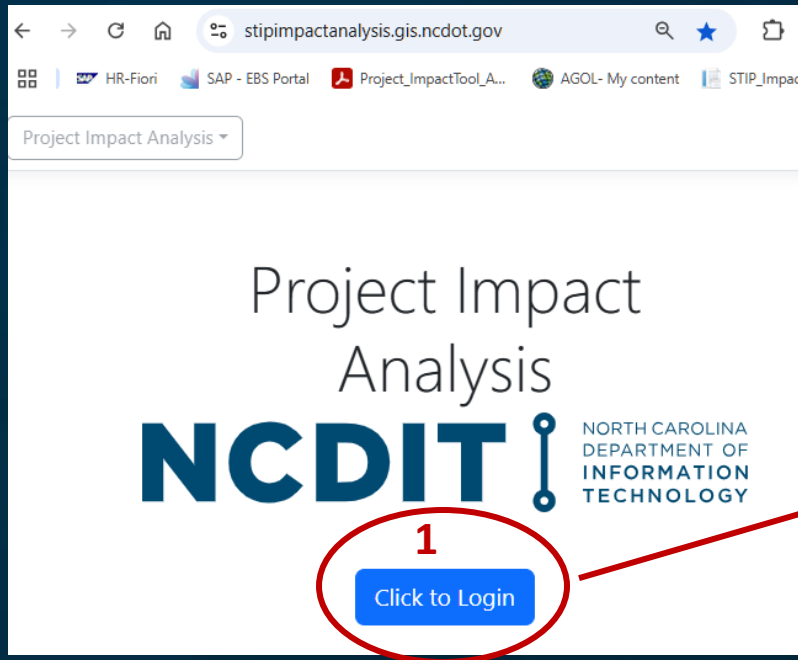
Title *:

Name:

Role *: Viewer Mobile Worker Creator Not sure
What kind of role do you need?

Project Impact Analysis Tool - Login

<https://stipimpactanalysis.gis.ncdot.gov/>



1. Click to Login
2. Organization NCDOT (NCID) Account
3. Use NCID and Password.

Project Impact Analysis Tool – Process

<https://stipimpactanalysis.gis.ncdot.gov/>

Initial Impact estimate will be assessed by EAU using GIS analysis.

Required Updates (3 milestones):

- 1- (2EP1) Advance NEPA/SEPA Doc.
- *Environmental Document*
- 2- (3EP1 / 2RD4) Revisit NEPA-SEPA Doc. /
ROW Plan Completed
- 3- (3EN2) Apply for Permits
- *ECAP will submit final impacts*

Project Impact Analysis

Time until logout: 0d 0h 28m 34s [Logout](#)

Project Id: R-4751

Route City: US 19

Impacts: Yes No

LET Date: 12/31/2039

County	Division	Eco-Region	River Basin	CU	Warm Stream	Cool Stream	Cold Stream	Riparian Wetlands	Non-Riparian Wetlands	Coastal Marsh Wetlands
Main	14	SM	LITTLE TENNESSEE	6010203			750			

Source: GIS

Source Dates: GIS

Comments: (2EP1) Advance NEPA/SEPA Doc
(3EP1 / 2RD4) Revisit NEPA/SEPA Doc. / ROW Plan Completed
(3EN2) Apply for Permits

Shelveid:

[Submit](#)

Project Impact Analysis Tool - Data Entry

<https://stipimpactanalysis.gis.ncdot.gov/>

1. Search Project's TIP Number
2. If necessary, update Stream (feet) and/or Wetland (acres) data
3. Identify Source of Data (defaults to the last approved entry)
4. Provide date of entry
5. Optional – Add comments
6. Submit

Stip Impacts Analysis Time until logout: 0d 0h 26m 52s Logout

Project Id:

Route City:

Impacts: Yes No

LET Date:

County	Division	Eco-Region	River Basin	CU	Warm Stream	Cool Stream	Cold Stream	Riparian Wetlands	Non-Riparian Wetlands	Coastal Marsh Wetlands

Source:

Source Date:

Submit

Project Id:

R-5810

Route City: R-5811

R-5813

Impacts: R-5814

R-5816

LET Date: R-5821A

R-5822

County	Division	CU	Warm Stream

R-5823

R-5824

R-5825

R-5826A

R-5826B

R-5826C

Source: R-5829A

R-5829B

Source Date: R-5830

R-5831

Submit

Project Id:

Route City:

Impacts: Yes No

LET Date:

County	Division	Eco-Region	River Basin	CU	Warm Stream	Cool Stream	Cold Stream	Riparian Wetlands	Non-Riparian Wetlands	Coastal Marsh Wetlands
Martin	1	NICP	ROANOKE	03010107	<input type="text" value="66"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Source:

Source Date:

Comments:

Shelved: Yes No

Submit

GIS

(2EP1) Advance NEPA/SEPA Doc

(3EP1 / 2RD4) Revisit NEPA/SEPA Doc. / ROW Plan Completed

(3EN2) Apply for Permits

RESOURCES

Link to Instructions @ NCDOT EAU, Mitigation and Modeling Group website

https://connect.ncdot.gov/resources/Environmental/EAU/Mitigation-Modeling/Documents/Project_ImpactTool_Access_Instructions.pdf

NCDOT Procedure Guidance for External Users @

<https://it.nc.gov/support/ncid/individuals-business-users>

Contact Us

Mitigation_EAU@ncdot.gov

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 [View All Channels](#)

Thank you!

