

NHDOT / ACEC-NH Bridge Subcommittee Meeting Minutes

March 9, 2018

Invitees: (Check Mark Denotes Attendance)	
✓ Bob Landry, NHDOT	✓ Tom Kendrick, MJ
✓ Angela Hubbard, NHDOT	✓ Bob Durfee, D&K
✓ Joe Adams, NHDOT	✓ Steve Hodgdon, Hoyle, Tanner
✓ John Poisson, NHDOT	✓ John Watters, GPI
✓ David Scott, NHDOT	✓ Adam Stockin, WSP (note taker)
✓ Tony Weatherbee, NHDOT	✓ Tom Levins, GM2

Location: NHDOT – Large Highway Design Conference Room Time: 10:00 AM – 11:30 AM

Notes By: A. Stockin

Action Items: **In red text**

First Quarter Meeting 2018 (3rd meeting of this subcommittee)

Department updates and staff changes (promotions, new-hires, retirements, etc.)

- C.R Willeke has filled Nancy Mayville’s former position. Nancy will stay on in a part time role until Steve Liakos’s former position as a bridge plan reviewer in the Bureau of Planning and Community Assistance is filled.
- Bridge Design staff is currently performing State Aid reviews until this position is filled
- CE 5 position has been posted, conducting interviews.

Summary of In-House Design Section staff meetings

- No In-House Design staff meetings have been held since the last ACEC meeting.

NHDOT Bridge Design Manual Status

- Final efforts are being completed on Chapter 7. Bearings, Barrier and Rehabilitation sections will be sent out to the ACEC bridge manual review committee next month for review, which will complete the chapter.

Concrete Reinforcing Discussion

- A discussion was opened pertaining to the level of reinforcing and where each level should be used for each tier of roadway. Tom noted that it was not clear in BDM if the deck is paved with a waterproofing membrane.
 - NHDOT is coordinating with VTrans on Hinsdale-Brattleboro project and there is an ongoing discussion between the states about where to use which types of reinforcing. There is a possibility the deck may be bare due to braking and shoving of pavement on the VT side.
 - Tom L. mentioned that VT is going with more Glass Fiber Reinforced Polymer (GFRP) Rebar. Bob D. noted that deflections may be an issue with glass bar due to a different modulus of elasticity.
 - John W. brought up Galvanized rebar and it was discussed that it is a coating and not preferred at this time
 - VT has a report on corrosion for various rebar coatings
 - Tom K. and Steve H. brought up the Brown Ave and Frontage Road bridges (reconstructed as part of the I-293 improvements in the early 2000's) in case study – galvanized v. stainless v. epoxy and bare deck vs pavement/membrane. NHDOT was not immediately aware of the results (or what the actual reinforcing steel consisted of for each bridge), however they will follow up for next meeting.
 - Reinforcing detailing may be a topic to be added to the “to do” list of the committee

NHDOT Information for Consultants

- NHDOT has implemented the 8th edition of the AASHTO LRFD Bridge Design Specification
 - New NSBA splice design program located on NSBA website <https://www.aisc.org/nsba/design-resources/nsba-splice/>
 - Shear stud design has changed
 - Camber loading specified – The final erected position of straight plate girders with or without a skew shall be vertical or plumb and achieved by detailing for “total dead load fit (TDLF)” condition. Horizontally curved plate girders with or without a skew shall be detailed for “steel dead load fit (SDLF)” condition. For straight plate girders with a very large skew, the designer shall consider SDLF condition. The plate girder fit condition shall be noted on the Structural Steel and Superstructure Notes.
- Google Earth NHDOT bridge map updates
 - Updated with inspection reports

- It will list what roadway tier the bridge will be on (sometimes different than roadway it carries if over a critical corridor or based on ownership)
- John P. – Roadway tiers are also listed in the inspection report
- Bob L. mentioned the Tier designation worksheet - *See attached*
- Closed Cell Expansion Joint at sleeper slabs
 - There have been performance issues with the currently specified closed cell expansion material in these joints. If the material does not stay under a state of compression, it falls into the joint or becomes dislodged and no longer keeps out moisture/debris.
 - Enfield - Mascoma Lake bridge – 2” of movement – both sleeper slab expansion joints failed (closed cell adhesive material failed and there is now a gap in the joint)
 - Closed cell expansion material shall now be designed only in compression which relates to a maximum movement of 1”
 - The joint should be designed to always be in compression. No tension. Soon a memorandum will be placed on-line showing designers how to design the closed cell expansion joint.
 - NHDOT directive: If the sleeper slab has more than 1” of movement, than designers must use a compression seal unless directed otherwise by the Design Chief.
 - **Action Item – All members, please send sleeper slab details to Angela from other states**
- New version 4 of Stream Stats
 - Angela - Issue with zooming in to delineate a drainage area and finding that blue river/stream lines don't match up with the basemap.
 - The program defaults to a “National Geographic” base layer. The user should change the base map to the “National Map” which seems to match the river/stream lines better.
 - See enclosed email regarding the new NH StreamStats program.
- New Portable concrete barriers details will be added to all contract plans
 - Braced barrier or Texas X bolt will use the same item number and special provision to be used by the Contractor at his/her option.
 - Can have 1’ of deck support behind barrier with no bolting to the deck for both barrier details (if less than 1’, barrier must be anchored to the deck and a different barrier/item # is required).
 - X bolt barrier comes in 10’ sections and the braced barrier is in 20’ sections. Both are MASH tested
 - Work zone + 50’ minimum length on either side has to use the braced barrier.

- X bolt barrier has an advantage where both faces can be used as traffic faces, whereas braced barrier needs to be flipped for each phase so that the bracing is on the work area side of barrier.
- A question was asked about guidance on a reduced deflection other than the 1' based on speed limits, etc. No one was aware of any specific guidance or correlation to reducing offsets where design speeds are low or impact angles are limited.
- New manual will read something like: "If less than 1' is present behind the barrier, it shall be anchored and/or receive design chief approval".
- 2018-01 Design Memorandum - Form Hangers
 - To clarify the memorandum, the Contractor may use any hanger they want. However, if a portion of the hanger is exposed, usually at the fascia, after the falsework is removed, the complete hanger shall be hot dipped galvanized.

Review of Accelerated Bridge Construction (ABC) training and data collection efforts

- Overall good feedback from the 2 classes that were held at NHDOT:
 - Bob L. – Future ABC training by FHWA
- UHPC v. VT rapid set concrete closure joint detail
 - NHDOT probably going with VT rapid set concrete closure joint to start with when considering ABC methods and details.
- Steve H. discussed the benefits of UHPC Link slabs that he used for MaineDOT Bath project.
 - 2'-10" link slabs (about 17" each side of centerline pier), 4" thick UHPC
 - Elastomeric concrete was utilized for brush curbs at link slab locations with a steel curb plate for abrasion resistance. (The elastomeric concrete is very dark and it sets very fast)
- ABC list
 - Tom K. – will send to the Maine ACEC bridge committee, which is meeting soon
 - NHDOT will forward the list to the front office as an example of what is being done in the Northeast for ABC bridge projects.
 - Most of MA projects are weekend closures with substructures reused
 - VTrans ABC list impressive due to many projects
 - Some general discussion on how Incentive/Disincentive was determined
 - NHDOT uses FHWA guidance as a check
 - User costs
 - VTrans uses prescriptive formula based on user costs

Technical and business-related topics

- Continue moving forward with ABC discussion
- Preservation – next 4 years a lot of the work being put out by NHDOT
 - Bundle bridges
 - Need to get information out to the consultant community
 - Standard details for preservation to be included in the new manual
 - Torch applied membrane performs at least as well as spray applied at half the cost
 - Active v. passive cathodic protection
 - Passive seems to be the movement
 - Look at a discussion matrix for when to do what
 - Dave S. – if the deck is a six, preservation is an option
 - If the deck is a 5 for a short period of time, then preservation may be an option, however if it has been a 5 for a while then let it ride and replace deck down the road
 - Look to share this with the consultant community
 - Show list of Rehab and Reconstruct (R & R) projects
 - Tie it into the bridge asset management plan
 - Preservation projects don't fit into a normal TS&L package, so it would be good to show consultants how these packages are put together. Provide a sample Engineering Report or include guidance in BDM?
- John W. - Do we really need to reinforce the exposed face of the Abutments? Many older structures without reinforcing on the front face are performing very well and do not require extensive rehabilitation. Something to consider?

Bridge Bureau workload and anticipated consultant support needs

- Develop project schedule template to help keep projects on track with more realistic and attainable schedules.
- Previously mentioned - more preservation projects to come to consultants

Potential NHDOT and Consultant bridge training opportunities

- MaineDOT looking to offer a drilled shaft course
- The Department is still looking to get Part 2 of the Skewed/Curved Bridge course
- Bob Landry may initiate a consultant training course to manage the public process. This training may be a ½ day course.

Next Meeting - Friday June 8, 2018

Attachments:

- Agenda – March 9, 2017
- Stream Stats email from Angela
- Tier documentation

I have attempted to summarize discussions held during this meeting as accurately as possible. If there are any items discussed herein that are misrepresented in any way, please contact me by March 30th. In the absence of any corrections or clarifications, it will be understood that these minutes accurately summarize the discussions at the meeting.

Respectfully Submitted,



Adam Stockin

Location:
NHDOT- Large Highway Design Conference Room

Time:
10:00 AM to 11:30 AM

Purpose of Meeting:
First Quarter Meeting 2018

Invitees:

- | | |
|---|--|
| <input type="checkbox"/> Bob Landry, NHDOT | <input type="checkbox"/> Tom Kendrick, MJ (Co-Chair) |
| <input type="checkbox"/> Angela Hubbard, NHDOT (Co-Chair) | <input type="checkbox"/> Bob Durfee, D&K |
| <input type="checkbox"/> Joe Adams, NHDOT | <input type="checkbox"/> Steve Hodgdon, HTA |
| <input type="checkbox"/> John Poisson, NHDOT | <input type="checkbox"/> John Watters, GPI |
| <input type="checkbox"/> David Scott, NHDOT | <input type="checkbox"/> Adam Stockin, WSP/PB (Note Taker) |
| <input type="checkbox"/> Tony Weatherbee, NHDOT | <input type="checkbox"/> Tom Levins, GM2 |

AGENDA ITEMS:

1. Introductory remarks
2. Department staff changes (promotions, new-hires, retirements, etc.)
3. Summary of In-House Design Section staff meetings
4. NHDOT Bridge Design Manual update
5. NHDOT Information for Consultants
 - Adopted new 8th edition of AASHTO LRFD Bridge Design Specifications
 - Bridge Tier designation is now noted in the bridge bubbles on Google Earth Map
 - Closed Cell Expansion Joint at sleeper slabs
 - StreamStats program
 - New portable concrete barrier (Texas X-bolt)
 - 2018-01 Design Memorandum
6. Review of Accelerated Bridge Construction (ABC) training and data collection efforts
7. Discuss potential technical and business-related topics
8. Bridge Bureau workload and anticipated consultant support needs
9. Potential NHDOT and Consultant bridge training opportunities
10. Subcommittee membership rotation

Tom Kendrick, Bob Durfee, Bob Landry, Angela Hubbard	Sept. 2017 to Sept. 2019
Steve Hodgdon, John Watters, Joe Adams, John Poisson	Sept. 2017 to Sept. 2020
Adam Stockin, Tom Levins, David Scott, Tony Weatherbee	Sept. 2017 to Sept. 2021

11. Next Meeting is Scheduled for Friday June 8th

Stockin, Adam

From: Hubbard, Angela <Angela.Hubbard@dot.nh.gov>
Sent: Friday, March 09, 2018 11:51 AM
To: Stockin, Adam
Subject: StreamStats notes

Follow Up Flag: Follow up
Flag Status: Flagged

Adam,

You can attach this email to the meeting notes.

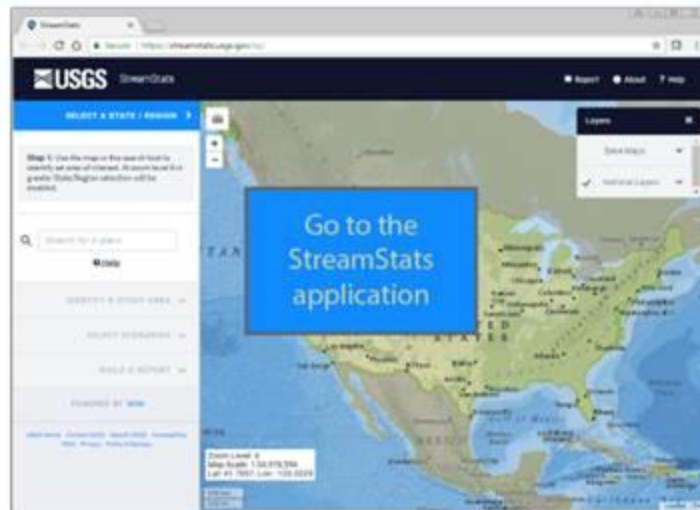
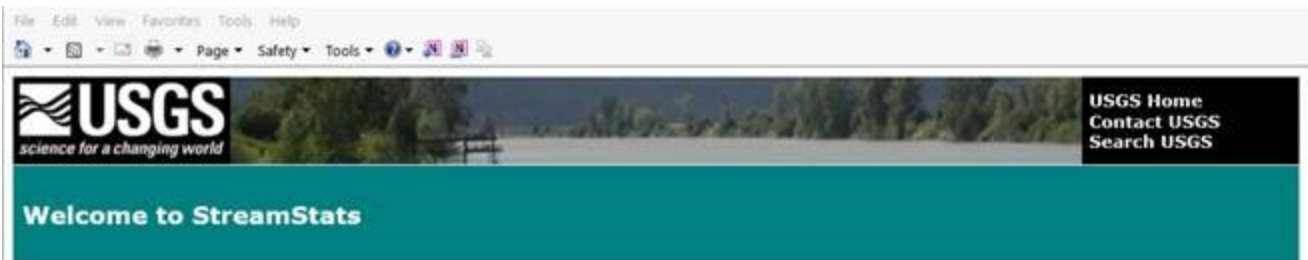
Angela

From: Hubbard, Angela
Sent: Tuesday, February 06, 2018 11:30 AM
To: Adams, Joseph; Brogan, Philip; Daigle, Kevin; Goulas, Nicholas; Guptill, Sue; Hozza, Jacqueline; Janssen, Aaron; Juliano, Robert; Kleiner, Ron; Landry, Robert; Licciardi, Michael; Noyes, Chelsea; Parenteau, Pierre; Poisson, John; Qurreh, Laith; Saffian, Bill; Sargent, John; Scott, David; Tremblay, Jason; Wagner, Mark; Weatherbee, Anthony; Zoller, Jerry
Subject: StreamStats

Designers,

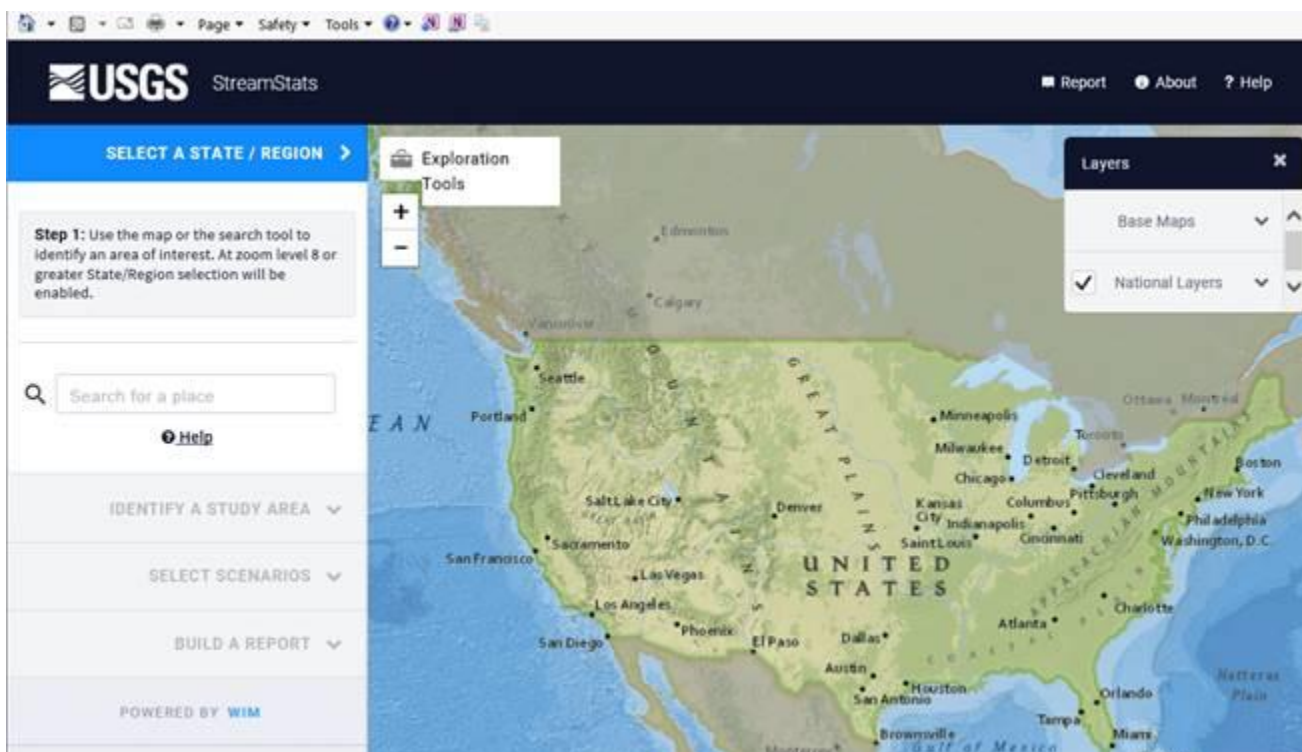
USGS has changed the StreamStats program to version 4. The old link to NH will not work anymore. All states need to enter from the US map link: <https://water.usgs.gov/osw/streamstats/>

- Hit the blue square to go to the program

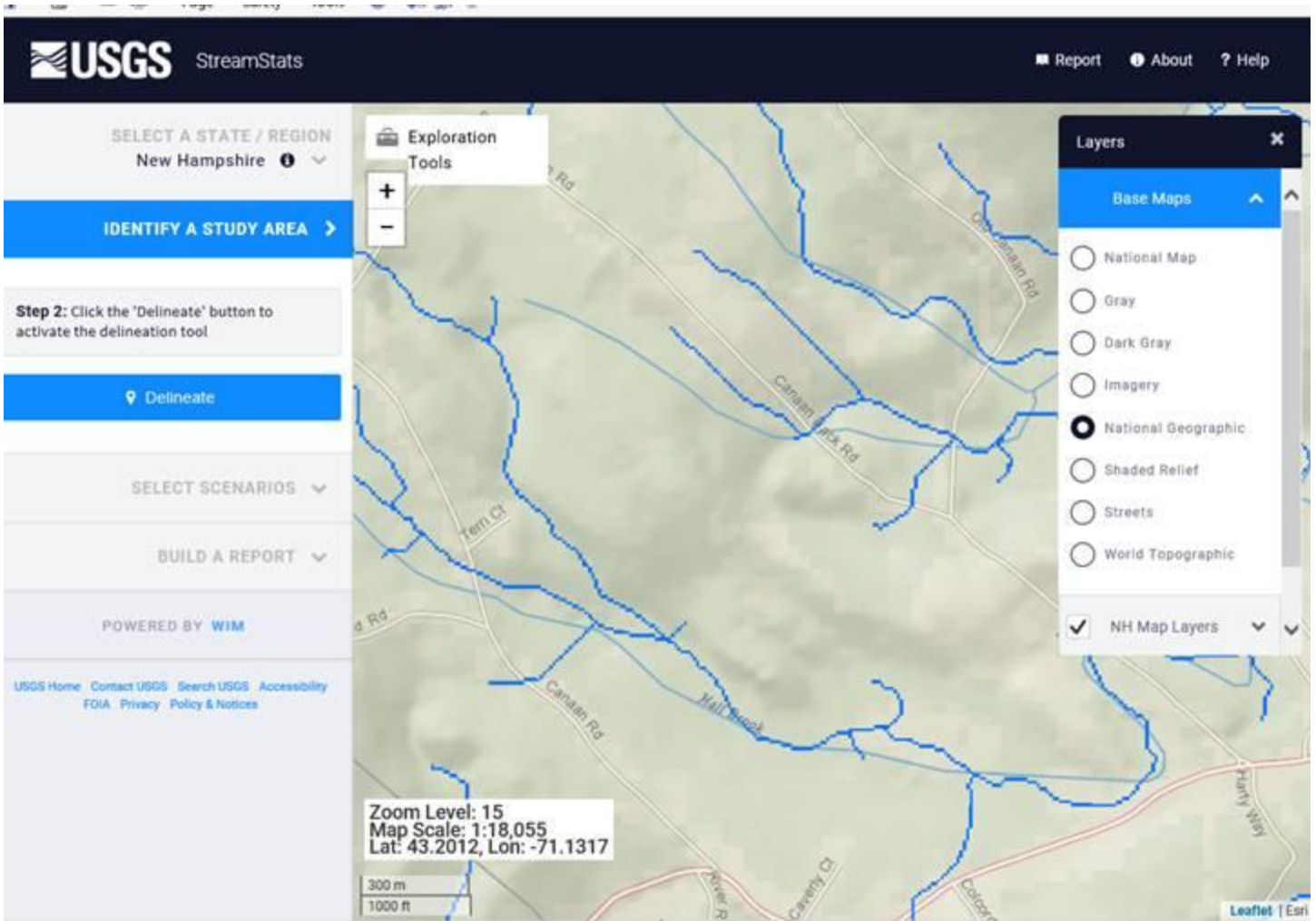


StreamStats version 4 is a Web application that provides access to an assortment of Geographic Information Systems (GIS) analytical tools that are useful for water-resources planning and management, and for engineering and design purposes. The map-based user interface can be used to delineate drainage areas for user-selected sites on streams and then get basin characteristics and estimates of flow statistics for the selected sites anywhere this

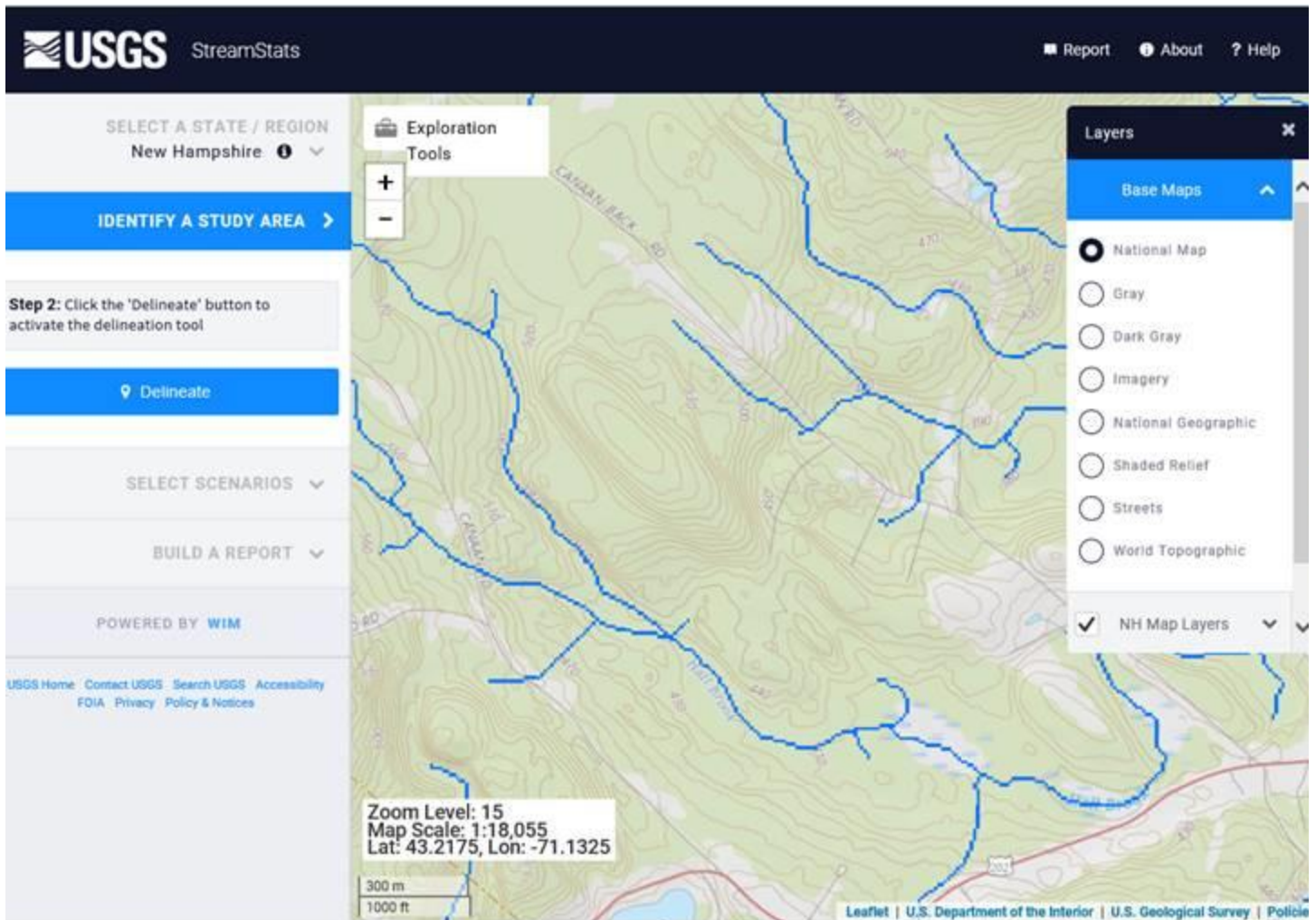
- Type in your location in the search box on the left.



- You can also enter a latitude and longitude.
- Click on “New Hampshire” blue bottom on left.
- Go to the bridge.
- Note: the program defaults to a “National Geographic” base layer. The river/stream delineation (dark blue which is called “NH Map Layers” does not match the base layer. You need to change the base layer to National Map or some other base map. You can turn the “NH Map Layers” off and on while trying to find a base map. Also, you cannot see the base map if you are zoomed in closer than level 15. USGS said they are working on that. USGS also said that you need to view imagery or other maps to decided what is the correct crossing for the “NH Map Layers” (dark blue) since that is the layer you need to hit on to delineate. There are more crossing on the NH Map layers than the base maps.
- Below is a National Geographic base map:



- Below is the same location with the National Map:



- You need to hit the blue “Delineate” button first and then hit on the blue layer crossing on the map. You also need to be zoomed into level 15 to delineate.
- Then hit on “Select Scenarios” and “Build a Report”.
- You need to use Internet Explorer to print out the full report. Edge only prints the 1st page.

Let me know if you have any question.

Angela Hubbard

Project Engineer

NH DOT - Bureau of Bridge Design

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NHDOT Highway Tiers – Definitions

System Strategies

The New Hampshire Department of Transportation (NHDOT) is focused on managing the state's road network as efficiently and effectively as possible. While every road is critical to the people and businesses that rely upon it, each road also serves a different number of users and provides different levels of mobility. Grouping based on similarities such as connectivity, regional significance, and winter maintenance requirements provides a common framework for analysis of condition and performance, investment levels, and operation and maintenance levels. To strategize the investment of scarce resources, the Department has categorized New Hampshire's road system into the following Tiers.

Tier 1 – Interstates, Turnpikes, and Divided Highways

Interstates, Turnpikes, and NH Route 101 between Bedford and Hampton support the highest traffic volumes and speeds in the entire state. These multi-lane, divided highways convey the majority of commuter, tourist, and freight traffic throughout the state.

Tier 2 – Statewide Corridors

Statewide Corridors, like US 202 or NH 16, carry passengers and freight between regions of the state as well as to and from neighboring states. These roads can have moderate to high traffic volumes, particularly during morning and afternoon commutes. While functionally similar, condition and features of these corridors vary the most out of any Tier. Some of these roads are formally constructed higher-speed facilities while others are more rural roads that became high use roads as surrounding neighborhoods and communities developed.

Tier 3 – Regional Transportation Corridors

Regional Transportation Corridors provide travel within regions, access statewide corridors, and support moderate traffic volumes at moderate speeds. Good examples include NH 112 and NH 155.

Tier 4 – Local Connectors

Secondary highways and unnumbered routes as well as the bridges along them are local connectors and they provide travel between and within communities. Traffic on local connectors, such as NH 141 or Bean Rd in Moultonborough, is usually low volume and low speed.

Tier 5 – Local Roads

Locally owned roads and bridges or State owned roads within compact limits provide varying travel functions and are maintained by communities. Traffic volumes and speeds can vary on local roads. Good examples include North State St in Concord or Elm St in Manchester. Though, the Department does not maintain local road and bridges, it does provide assistance to communities.

Tier 6 – Off Network

The Department needs to track work accomplished on off network assets such as park 'n' rides, patrol shed, or rest stop parking lots.

Signature Page

New Hampshire Department of Transportation –
Tier Definitions

Approved by:



Date 6/22/15

William Cass, P.E.
Acting Commissioner
New Hampshire Dept. of Transportation