

Prefiled testimony, Easton Conservation Committee December, 2016

My name is Kris Pastoriza, I live in Easton, NH. I graduated from Wellesley College with a B.A. in Studio Art. I have been a member of the Easton Conservation Commission for six or seven years and am presently its Chair. I'm also a member of the Zoning Board of Adjustment and a Cemetery Trustee. I have completed three listings for properties to the N.H. Register of Historic Places, as well as the application for the Ham Branch Watershed to the NH Rivers Corridor Management and Protection Program and a supplement to that document. I live off-the-grid with three solar panels.

I am concerned that permitting this project would create an SEC precedent for permitting burial of very large electrical infrastructure under any road in N.H.

I am concerned that permitting this project would set SEC precedent for siting three (as planned in Deerfield) or four (technologically possible) 100'+ transmission towers in the many 225' easements Eversource owns in N.H., which were given, or taken by eminent domain, for 115kV or smaller lines to meet the reasonable (in 1948) needs of the public.

I am concerned about the cultural and environmental effects of the project on Easton on several levels.

- 1.) The inevitable, permanent and unknown environmental and cultural degradation the project would cause, described further in the section addressing public interest.
- 2.) State and Federal pre-emption of local zoning and control and the failure of the regulatory agencies at the State and Federal levels to have adequate standards for environmental protection or resources for monitoring and enforcing the low level of standards they do have. I include the SEC as a regulatory agency. During the recent SEC Rulemaking half those having input to the process were industry lawyers and lobbyists, including Mr. Getz and Ms. Geiger, former SEC members now working for Northern Pass and Iberdrola/Kinder Morgan, respectively. Industry has far too large a hand in writing the rules the regulatory agencies are supposed to enforce. In addition, the SEC members generally operate within the same mindset as those in industry, placing business interests ahead of environmental protection, which history has shown is a losing game for all of us. The fact that three Northern Pass representatives are former members of the SEC indicates their acceptance of corporate industrial values. These values were clearly guiding their decisions while they sat on the SEC.
- 3.) Eversource had shown itself to be a poor neighbor even before planning Northern Pass, the “nightmare neighbor” project. They consistently fail to use Best Management Practices. Eversource/NPT's major contractor for this project, Quanta/Par, which “has years of experience managing and constructing high voltage transmission lines” (line 31, p. 7) <http://www.northernpass.us/assets/filings/Volume%20II/NHSEC%20Docket%20No%202015-06%20Pre-Filed%20Testimony.pdf>) has been cited for 19 OSHA violations since 2010 <http://violationtracker.goodjobsfirst.org/parent/quanta-services>) and Eversource itself was recently fined by the NH PUC for negligence leading to a fatality and by the Massachusetts Department of Environmental Protection for failing to report and oil spill from a transformer (PCBs.) These standards filter down to their sub-sub contractors, as evidenced by the poor work done by the geo-technical boring crews this past summer. (see photos and: [http://www.nhsec.nh.gov/projects/2015-06/public-comments/2015-06_2016-](http://www.nhsec.nh.gov/projects/2015-06/public-comments/2015-06_2016-10-27_comment_k_pastoriza.pdf)

Eversource states:

“A. The Project recognizes that maintaining compliance with regulatory requirements is one of the keys to success in any project. The Company's core values of environmental stewardship and integrity aligns with the team's proactive approach to compliance management. Prior to construction, NPT will review all permits and supporting documentation to develop a plan to communicate regulatory requirements, establish roles and responsibilities, lines of communication, means to monitor compliance and implement and document corrective actions.”

This is clearly not the case.



(Above) Slurry dumping over borehole, which was followed by hosing of slurry into undergrowth. (Above) Accu-Vis spilled and covered at boring site, WMNF. (Left) workers stand on slurry tub. Uncovered 5-gallon buckets sit above a wholly inadequate “silt fence” above the river. No frak-tanks. No Best Management Practices, improper borehole filling, slurry trucked out in a tub and open buckets in open pick-up truck. A Northern Pass rep. watched it all and did nothing. Because this hole was being watched by locals, they trucked out the slurry. After the surveillance of this hole, they brought in holding tanks. Before the (six hour) surveillance of this hole they dumped the slurry on the roadside.

Haley and Aldrich, who did some of the earlier borings appear to be a much higher quality firm, but Northern Pass is clearly unwilling to consistently pay for quality work. At the higher levels of the corporation there is lack of judgement. When Northern Pass lost their ability to use eminent domain they should have abandoned the project and cut their losses. Blinded by their sense of entitlement, they have instead spent years in poorly conceived attempts to buy a route, local support and most recently, the PUC/SEC. In this time two other Quebec to southern New England transmission projects have been permitted. Eversource is guided by something other than a thorough assessment of facts and understanding of the reality “on the ground” here.

4.) Eversource/Northern Pass has lied promiscuously throughout this project (see **Attachment A.**) Nothing they say is worthy of trust and this includes their barely navigable application, with its inaccuracies, useless generalizations and promises for how the project would be built. Northern Pass “outreach” notes confirm this. Town after town rebuffs their advances, to the point where they write most pathetically of a less-than-hostile reception in Merrimack:

“In general, the presentation was well received with a handful of people who outwardly supported the project. Several people lingered at the end to wish us “good will and good luck” going forward. There were about 20 people present.”

*Anyone who doubts Eversource's intentions to thoroughly exploit every landowner with an Eversource easement across their land should read the lease agreement between Eversource and Northern Pass, which expands Eversource's rights on the easements from the two page document we have seen, to 110 pages of permissions. Read it and weep, then hire a lawyer if you can afford one.

5.) If the project were built, Easton would be obliged to hire counsel to attempt to collect damages. This would be expensive. Already Easton, like many towns in New Hampshire, has paid its lawyer to represent the town in front of the SEC. Already Easton, like the other 30 towns along the route has had some of its most dedicated residents devote their energy, passion, time and money, not to the town, but against Northern Pass. Though there have been places of convergence, there has been a loss to local communities; hundreds of hours of work that were not spent on local projects, conservation, family and community, but rather, Northern Pass. Northern Pass speaks of providing jobs but what they have done is drain communities and create collaborators and resistance within formerly undivided communities.

6.) If the project were built, the cultural and moral fabric of Easton would be damaged. A power source predicated on the destruction of livelihood, culture and terrain from its source on the lands of Native Canadians to its destination in the power-hungry affluent suburbs, is not green. Energy that is consumed profligately and heedlessly is not green. If this power passes through Easton, marked by poles, cleared land, or hidden under the pavement, we will be one step closer to capitulation to the destructive terms of this power. Residents would be incessantly reminded of the line under the ground and who put it there. They would be reminded of state pre-emption of their local zoning, values, beauty and environmental health by the SEC, DOT and DES. As we have seen with Casella in Bethlehem, this forced siting of a project on unwilling residents has lasting ill effect on the people as well as the environment. On the same note, the requirement for intervenorship status of individual or town damage is not supported by the fundamental interconnectedness of people, towns, watersheds air, states and countries. SEC limitations are imposed for convenience and to keep the power in the hands of corporations and do not reflect reality.

Q. Would the project as proposed serve the public interest?

A. No. The project as proposed would not serve the public, the community of Easton, or those downstream because of the unavoidable environmental, aesthetic and social damage that would be caused by the 10+ miles of trenching and Horizontal Direction Drilling (36" borehole) that would be necessary to bury the lines.

These impacts would include:

#1. Siltation of local watershed and wetlands from trenching and siltation and pollution of the watershed with mud and drilling fluid during Horizontal Directional Drilling which, as the geotechnical boring has shown, will migrate out along water bearing strata carrying bentonite and polymer additives with it. These additives are toxic to fish and aquatic wildlife. There is also the risk of a frak-out to rivers, as shown below with Mary's River in Oregon.

"Mike Hayward, an environmental manager for the gas company, said the drilling crew was working about 400 feet away from the river when the accidental release was discovered. He said the bentonite slurry sometimes can force its way out to the surface in unexpected directions during the drilling process, moving through fissures or weaknesses in the subsurface material.

"The mud will find the path of least resistance," he said. "It's under pressure." Another spokesperson stated:

"We don't anticipate anything like (the bentonite release) when we're doing directional drilling,"... "We do choose to do directional drilling because it is less impactful to the environment."

http://www.gazettetimes.com/news/local/utility-acts-to-contain-spill-in-marys-river/article_a47d28c6-06ef-11e3-b726-0019bb2963f4.html



Apparently the Applicant doesn't expect a frak-out either, because their containment plan is only seven pages long including the title page and table of contents. It contains confidence-inspiring responses to a frak-out, for example "continue to perform focused visual monitoring" and "take appropriate steps to stop loss."

Already, with the 65' deep 3' diameter geotechnical boring, there were leaks of drilling fluid to local streams and discharges of used slurry all along the route in Easton. We anticipate a similar lack of standards and oversight by the DOT and DES. DOT standards for Horizontal Directional Drilling are merely recommendations, in book form, at the cost of \$150. There is no trust that there will be appropriate standards or oversight. The Best Management Practices Northern Pass states they will

adhere to are not defined in their documents and would be merely recommendations. There would be no penalty for failing to follow them. <http://imgur.com/a/ojxIH?> <http://imgur.com/a/aCsRy>



Above, drilling fluid that migrated to local rivers that are Woodsville's water supply, along Route 112 in Woodstock. DES and DOT found this acceptable. 3" boreholes. HDD would require 36" holes.

#2. The proposed route ignores local conditions. It proposes burial along the Easton valley where the Ham Branch watershed streams flow from North and South Kinsman and the Cooley-Cole Ridge to enter the Ham Branch River and flow through Franconia joining the Gale River. In the Wild Ammonoosuc watershed area from the Jericho Trailhead on 116 to the Woodstock border just past the Wildwood Campground on Route 112, the route is also in a valley whose streams feed into the Woodsville water supply. The proposed route crosses 20 potential fishery streams in Easton. 100% of the route is within a DES mapped wellhead protection area, a mile is within GA-2 classification. The aquifer is also fed by areas outside its "boundaries." The project could cause permanent contamination of these aquifers through the flow of Horizontal Direction Drilling slurry into water bearing strata, and from blasting. The applicant has not adequately addressed these issues where it has addressed them at all. Such damage can not be mitigated.

NH DOT contributed to a 2016 report that confirmed nitrate contamination to aquifers due to NH DOT projects. Sites in New Hampshire with drinking water supplies that have been contaminated by blasting include Concord-Merrimack SPCA, Merrimack Premium Outlets, Merrimack Home Depot, and two sites in Windham. One of DOT methods of dealing with contamination is to provide homeowners with bottled water or filtering systems. This is unacceptable. Blasting also has the potential to damage historic house and barn foundations. Eversource has submitted no data on where blasting would occur, if the line were permitted by the SEC.

"Groundwater with blasting-related NO₃ – moved rapidly, within six months of blasting, from construction sites to downgradient wells with oxic conditions. Elevated NO₃ was flushed over a time scale of months to years. Nitrate breakthrough times in denitrifying groundwater (Wells W1063 and W492) were on the order of a year, but may depend on loading rates... Nitrogen from hydroseeding fertilizer used for reclamation of road construction sites is another potential transient source of groundwater NO₃."

http://nh.water.usgs.gov/publication/journal_articles/Degnanetal2015.pdf

The proposed route has 382 acres lying over aquifers, roughly seven of these in Easton and 1,124 within FEMA flood zones, which are probably out of date, considering where Irene caused flooding. The no-build option has no acres lying over aquifer, no acres within FEMA flood zones and no damage to New Hampshire water supplies from blasting. If someone were to calculate the cost to New Hampshire of contaminated aquifers and groundwater, it would be considerable and the damage irrevocable.

To restate: it would not be in the interest of Easton residents or visitors to have their water supplies contaminated by nitrates or drilling fluids. This is just one example of effects of the project the applicants do not address, as the EPA stated:

“Blasting and HDD

Two constructions activities that may pose significant hazards to groundwater resources are blasting and horizontal directional drilling (HDD.) In multiple sections, the DEIS states that “potential blasting during construction could result in groundwater being more susceptible to infiltration by on site materials from spills or leaks, and could also temporarily affect turbidity in groundwater wells near the blast zone.” This statement does not adequately capture the risk to groundwater from blasting, which can be far greater and long-lasting. Blasting near bedrock wells poses a significant risk to the water quality and capacity of these wells. EPA recommends that alternatives to blasting be fully explored, and that blasting within close proximity to bedrock wells be prohibited.” NPT estimates 5.5% of the proposed route is rock.

#3. Burial would damage wetlands and alter waterflows through and along the roadbed. Northern Pass estimates submitted to the NH Department of Environmental Services list the permanent impact to wetlands for their proposed route as 2.7 acres, and temporary impact as 137 acres. The Draft Environmental Impact Statement produced by the Department of Energy estimates permanent impact to wetlands at 23 acres. We do not accept NPT's methodology which does not take into account wetland and streams outside of the rights-of-way and road beds. The Draft EIS supplement estimates 2 acres direct damage with complete burial using I-93, compared to 23 acres, for the proposed route. Avoidance should have been considered during the selection of the route, not after it. The Terracon Risk Management report states that shallow groundwater (less than 9' deep) is expected beneath 63% of the route of the line. Every day this groundwater would need to be pumped out; where?

The applicant is having difficulty finding fill that will dissipate the heat of the lines and is proposing fluidized thermal backfill for the trenches. What are the ingredients of the fluidizer? How will this fill alter the pH and groundwater flow beneath the roadbed? Will the concrete contain fly ash from coal power plants, which would be contaminated with coal byproducts and heavy metals, including mercury?

The applicant's AOT permit application states: “For discharges of HDD fluids to surface water, a temporary discharge permit from the USEPA under the NPDES program and RSA 485-A:13 would also be necessary, and discharges to groundwater would require a NHDES groundwater discharge permit under EnvWq 402 . Surface water withdrawals for HDD work would be subject to reporting requirements to NHDES, and low flow requirements would have to be met.” Discharge of HDD fluids to surface water or groundwater would have unacceptable environmental consequences. HDD fluids contain bentonite, toxic to fish and aquatic life, as well as polymers which are environmentally hazardous. Northern Pass contractors have already failed to follow the conditions for surface water withdrawals, (obtaining riparian landowner permission for water withdrawal, trespassing on private land for archaeological subsurface sampling) so an independent inspection team would be required

during the whole of the project, an expense the Town could not afford.

RTE Species or Exemplary Natural Community	State Status	Towns
Communities		
Moderate-gradient Sandy-cobbly Riverbank System	S3S4 State Exemplary	Dixville, Dix Grant
High-gradient Rocky Riverbank System	S3 – State Exemplary	Easton

In addition, nearly a mile of State Exemplary High-gradient Rocky River system lies close to the proposed route on Route 112 in Easton. Its closest location is within 20', too close for protection.

The width of the proposed trenching is unknown. The Alteration of Terrain permit says “Direct-buried cable is installed approximately four feet below grade in a trench that would be approximately 3 ft wide and 4.5 feet deep. “ (p. 85) However, at a 9/28/2015 meeting with the Concord NPT Committee “Mayor Pro Tem St. Hilaire asked what the proposed width of the trench would be to bury the line. Mr. Bosse replied that it would be between 8’-10’ depending on soil conditions and construction factors.” <http://www.concordnh.gov/Archive/ViewFile/Item/2378>

Similar conflicting stories leave the testimony of the applicants open to doubt;

At an 11/9/15 meeting in Easton, NPT representatives assured abutters that the line would be buried under the pavement. Yet the DOT meeting minutes make it clear that the line will be buried outside of the pavement, and that the burial location was, as early as 9/1/15, clearly an issue that would require negotiation and change from under the pavement to the edge of the easement. Northern Pass employees clearly knew this.

#4. DOT is anticipating impacts to abutters. In NPT-DOT meeting minutes they state “HDD is expected to be in continuous operation from the drilling to the conduit installation. These locations will need to be reviewed to evaluated potential impacts to abutters...Eversource should consider using adjacent property for drilling pits and layout of conduit to be pulled back.” DOT has no requirements for HDD, only recommendations. DOT has no definition of “disturbed terrain” a term used frequently by the applicant, and cannot say what portions of the proposed burial route are disturbed terrain.



(Left) Planned HDD drilling pit location in Easton, looking north. Paved surface is approximately 25' wide, easement width 40'. The bank on the left is extremely steep and the road grade itself is about 7%. HDD pit is planned for where the sign is on the right. East of this is a very steep slope down to a stream that runs along the road and joins the Ham Branch at the white marker.

Groundwater level at this hole was at 7'. At borehole #105, up the road in the swamp, it was at 3.6' and both were drilled during the drought. (Above right) Map shows planned HDD pit location at marker for 116. Streams marked with 50' buffer in pink. Aquifer transmissivity in shades of orange. NH Granit.

#5. DOT is anticipating constraints along the route in Easton and Eversource has not submitted any plans resolving them: Considerable portions of Route 116 have an easement width of 40'. HDD drilling requires a 100' x 200' area for each pit, **according to the EIS: "The trenchless segments would require installation areas at the beginning and end for equipment and materials storage. It is likely that previously disturbed areas would be utilized to the maximum extent possible, for the purposes of analysis it was assumed that an area 100 feet by 200 feet (30 m by 61 m) would be cleared of vegetation and soil would be disturbed at each end of every trenchless segment. A trenchless excavation pit approximately 20 feet wide, 20 feet deep, and 60 feet long...would be required paralleling the alignment at the start and end of each trenchless segment."** EISs for Champlain-Hudson and NECPL also show width requirements for burial beyond those available on the proposed route in Easton. Northern Pass has not submitted any plan for dealing with these limitations. Attempting to bury line in locations too narrow to allow it would end in disaster. All trenching will require the use of fluidized thermal backfill; horizontal bore requires thermal grout; and all forms of HDD require bentonite slurry/native soil mixes around the cables to dissipate heat. Where are the analysis and studies of the effects of these mixes on subsurface groundwater travel and aquifers etc.? There is high potential for massive frac outs and slurry blowouts in open subterranean soil stratus.

#6. Meeting minutes from the 9/15/16 Concord NPT Committee meeting state: "Councilor Coen asked about the idea of using state road right of way in Concord. Mr. Bosse explained that from I-93 and I-393's standpoint, there has to be no other alternative to construct the project before the governing authorities would consider allowing NP to use that same right of way. In addition, if they were allowed to be there, **their line would need to be so close to the edge of the right of way that it would, in essence, create a brand new path.**" (<http://concordnh.gov/ArchiveCenter/ViewFile/Item/2346>) (My emphasis.) Burial of the line will require a swath of open land next to the existing road. This is supported by the visual impact simulation for Clarksville underground which shows a 50' cleared swath of land. Other NPT documents confirm this width of permanent clearing. This swath would have to be marked at regular intervals with plastic or fiberglass posts. This would have a large effect on the scenic quality of the designated scenic roads which comprise the entire proposed route in Easton. It would have a large effect on the majority of people driving, walking or cycling on these roads, as well as on the setting and feel of historic structures and landscapes.

The above is in direct contradiction to the fisheries report by Northern Pass which states that no clearing will occur at streams on the buried route, therefore there would be no increase in water temperature that would affect coldwater fish.

Northern Pass AOT permit states: "In undeveloped locations, temporary roads will be constructed for safe, efficient and environmentally compliant access to the work." Much of Easton is undeveloped, and it is unclear on whose property these roads are intended to be constructed. Eversource has already expressed to NPT the difficulty they would have acquiring rights outside the easement. It appears they have failed to acquire the necessary property rights to build the project, and are counting on DOT to loosen standards for them. In any case, temporary roads would have a large and destructive aspect on the undeveloped areas of Easton, environmentally and aesthetically. Recent data shows that compaction of soils has long term effects on the forest. This compaction would also affect the portions of the easement that are not paved, where construction would take place. <http://munews.missouri.edu/news-releases/2016/0817-logging-can-decrease-water-infiltration-into-forest-soils-study-finds/>

March 2016 meeting minutes for DOT-NPT meetings state: “An issue Eversource is looking into to resolve is the storage of the excavated material and the various construction materials...” Roadside material is now considered mildly contaminated by DOT; this, along with wide reaching hostility to the project, could lead to difficulties, possibly insurmountable, with construction.

#7. There would be air and noise pollution throughout the construction of the project. NPT has not submitted a noise study document. NPT mentions need for 24/7 construction in certain situations. Again, local hostility to the project would only exacerbate the irritation these would cause.

There would be long delays while traveling what locals consider to be their roads. This will cause air and noise pollution and irritation. During Motorcycle week, when there will be Harley motorcycles in deliberate violation of noise laws waiting at construction sites, there could be incidents of road rage. Decibels are not an accurate measure of noise effect on humans. Interior car noise, which most people do not find annoying, can reach 90 decibels. The highway noise from I-93, outside the NPT tech session building in Concord was 65 decibels, a noise that many rural dwellers would find highly annoying and stressful. Infrasound measurements need to be part of any sound standards, as the SEC has seen with the Industrial Wind projects. Clearly whether a sound is chosen or heard under compulsion is absolutely central to the noise issue and should be addressed in any noise standards set for the project. The same applies to pollution. The cigarette smoke of a friend is typically far less annoying than that of a stranger. Noise and diesel fumes caused by unwanted construction, compared to those emitted by sources on accepts as necessary, like septic trucks, would be a perversion of rights.

#8. Locals and abutters may take the position that the right of siting electrical lines under the roads is granted to DOT only for reliability projects and contains unstated common-sense limitations on size and damages, or is not granted to them at all, and there could be a broad on-the-ground resistance.

#9. Eversource has cost many local towns substantial money in legal fees over the dispute of the valuation of their lines in town. We would have to expect similar legal fees over the valuation of the underground line. Eversource/NPT appears to have chosen this burial route to avoid lease fees DOT could impose for the I-93 route but cannot impose on State owned easements, as well as to target local towns who have less resources and enforcement capacity than DOT and the state. In addition, Northern Pass has already devalued the properties along their existing easement because people now know what could be permitted there in the future. The road properties could be similarly devalued, leading to a substantial decrease in tax base.

#10. The schedule set by the SEC, the technical inadequacy of the SEC and ShareFile sites, and the deliberately opaque and cumbersome packaging of the discovery documents has made it impossible to read the whole application or the discovery documents. Therefore, there are many potential harmful effects of the project that remain unknown, to Easton and to the SEC.

I have been told the SEC does not read pre-filed testimony. Any members that do read this let me know by e-mail or I will assume you did not.

This proposed project is not a use of natural resources, it is a theft and destruction of natural resources that belong to the people. From the start at the dams on Native Canadian territory, through Quebec that is neutered because HQ is nationalized, through New Hampshire with aesthetic and environmental damage inevitable at every turn. <http://imgur.com/a/ojxIH> <http://imgur.com/a/aCsRy>



Horizontal Directional Drilling: Is there room for either of these methods on 302, 18, 116, 112, Route 3, through Plymouth Main Street, or on a 40' wide easement? HDD slurry pit, below left:



<http://www.laneydrilling.com/gallery/index.php?level=picture&id=63>



Attachment A

9/29/2011: NPT & EPA meeting: ""Pre application meeting to discuss format and contents of applications and plan sets. EPA guidance on secondary impacts, unknown impacts, **existing ROW as LEDPA.**" (emphasis added, LEDPA means Least Environmentally Damaging Alternative.)

In contradiction to this, the Draft EIS states: "The portions of Alternative 7 that would be constructed underground along existing roadways would impose the fewest environmental impacts due to the lack of visual impacts and use of previously-disturbed roadway corridors." (DOT has no definition of "disturbed" and cannot say what portions of the proposed burial route are disturbed. Presumably, I-93 is disturbed.)

2011 Meeting Minutes NH DOT International Right of Way (IRWA) Regional Meeting 12/11 NPT attendee:

Why not go underground?

The issues associated with underground were identified as follows: environmental impacts, costs, constructability, and reliability of service.

Below: 2011 Pittsfield Rotary Meeting, 10/19 (NPT discovery 030301)

Q. Why not underground?

A. Brian indicated that while an underground line would be not visible to the public, there are many negative issues with underground. These items include the continuous trenching for the line which would cross wetlands (noted that an overhead line spans sensitive areas and an underground circuit goes thru the sensitive areas). The geography of New Hampshire would pose extremely difficult areas to pass and references were made to the sections thru the remote areas of the WMNF. It was also noted that a road for construction and maintenance would be required over the entire underground route. The final item identified is the prohibitively expensive cost of underground construction.

Below: 2012 "Utility Corridor Evaluations in Northern New Hampshire", (NPT discovery 004560)

- The project team expects any underground solution along the edge of the DOT ROW to have significant wetland impacts. The additional cost of this mitigation above and beyond what is already in the application was not included in this analysis.

Below: 2016 "An Evaluation of all Underground Alternatives" (NPT discovery 010381)

- Mitigation costs beyond already proposed – An all underground route has significantly more environmental impacts compared to an all overhead route when not in already disturbed roadways because of the continuous nature of the construction installation. The all underground routes have not been fully evaluated for the impacts to wetlands, wildlife, rare and endangered species. An estimate of the impacts for an all underground route in non-disturbed areas of the interstate highways is approximately \$10 million to \$20 million.
- High risk construction areas – As in noted in Appendix C, there are many high risk construction areas that have been identified by the engineering team but not priced into the construction estimates. An estimate for additional costs associated with the “high risk” areas is \$10 million to \$15 million.

Below: 2016, “An Evaluation of all Underground Alternatives” (NPT discovery 010384)

40-Mile Roadway Corridor

CLD reviewed the feasibility of two options running along US Route 3. Regardless of the option chosen (direct-bury or trenchless technology), the alignment poses several hurdles. These include the following:

1. Construction along the existing roadway would cause delays for motorists during the construction period.
2. Construction duration would be increased dramatically due to inefficiencies caused by the need for maintenance of traffic.
3. If NHDOT were to perform any future widening, it would be the responsibility of NPT to relocate the underground facility. The underground utilities could be costly to relocate if they are located beneath the widened roadway. Also, if the utility corridor previously provided is no longer available as a result of the widening, it could be quite costly to find a new route.
4. The length along US Route 3 is greater than UAM’s typical project scope.

2014, Northern Pass to DOE Data Request response ALT-2”

“The typical 66 foot ROW would likely be inadequate during construction in some areas, and thus require construction easements from adjoining landowners, which may not be forthcoming.”

The above was in reference to burial of the large MW line in railroad beds, but applies to the burial of the present line in roadways, given the small size difference and similar need for construction equipment and HDD pits.

2014, NPT meeting with SPNHF: “Quinlan stated that NU has committed significant time and

resources to evaluating various underground technologies that might be used for Northern Pass, and that NU has not found any project that utilizes underground technology for the length and capacity required for NP. This includes our own research of projects and speaking directly with cable manufacturers. He said if the Society has information about projects that NU is not aware of we would welcome that information and input. Quinlan stated that while Northern Pass and NU is interested in pushing the envelope and utilizing new technology and has demonstrated its willingness to use new technology on other projects, it is not going to be the first project to use a new, unproven technology. Discussion of warranties and the need for assumption of risks associated with new technologies and the potential that they may not work.” NPT 030363

2012: NPT commissioned report on underground alternatives that assesses ABB's HVDC light:

http://media.northernpasseis.us/attachments/Att_5604_Electric_Transmission_Alternatives_White_Paper.pdf

It states: “Other siting options are also seen to include highway rights-of-way or railroad rights-of-way. **These options have been used for lower voltage electric lines, such as distribution circuits operating at voltages typically less than 50 kV. “**

2013: “Ireland is expanding its wind power generation and the **500 MW ±200 kV EWIC HVDC Light** transmission system provides an opportunity to export excess power into the UK market....

Approximately 260km in length, the underground (75-km) and undersea (186-km) link has the capacity to transport enough energy to power 300,000 homes.

ABB was responsible for system engineering, including design, supply and installation of the converter stations and the sea and land cables. **The link went into operation in 2013.” (75 km = 46 miles)**

2010: NPT first meeting with Town of Dalton:

“Question: “Can't you underground at least some of the line?”

NPT: Undergrounding is very expensive. If undergrounding even a portion of this line is necessary there is a good chance this project will not go forward”

Pittsburg Meeting, 2010:

“Question - “Can the line be buried?” - The environmental aspects of the trenching for an underground line was noted as a negative environmental issue. “

“Columbia Meeting, 2010:”

“Comment from the audience: “We the people of northern NH do not want you and do not want you to violate our landscape by forcing your way across our forests, mountains and homes. We will fight you every step of the way. You have kept the project details a secret until the last possible minute. Our voices will be heard across the nation. PSNH does not own NH and does not serve the area that the line will be located in. You are looking to just make money. My message to you is to get out, stay out and never come back. Take your line and go in existing ROW in VT and down Route

91. We do not want this area turned into a ROW for power lines.””

2010: Easton meeting, four members of the public in attendance

“Comment from the public- “I will do everything in my power to fight and stop this line.””

NPT states as fact whatever supports their current plan. This leaves all their data suspect.

Mitigation by Vacation:

CN=Maria K. Letourneau/O=NUS
Thursday, March 31, 2016 6:14 PM
smulholland@allentownnh.gov
pat mcdermott HA <pmcdermott@hinckleyallen.com>
CN=Maria K. Letourneau/O=NUS
3/30 meeting with Coviellos

Hi Shaun,

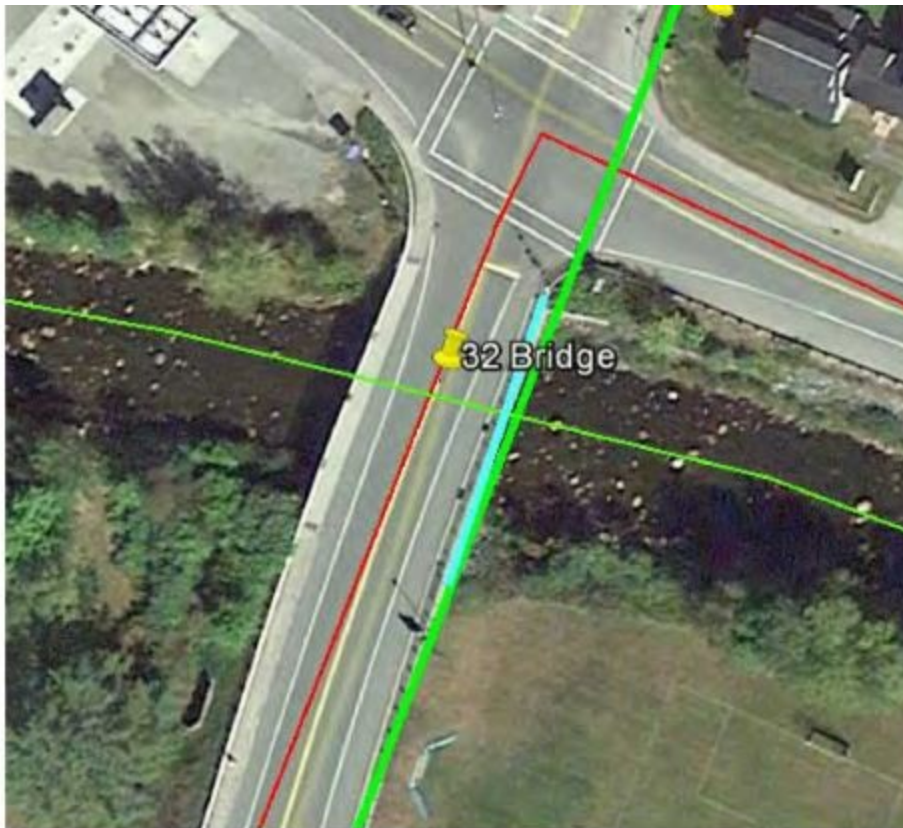
It sounds like things went very well last night when Jim Wagner and Jim Jiottis met with Paul and Sue Coviello. Sue gave some background on her daughter Amanda, with the hearing hypersensitivity situation, and the helicopter incident last year. Sue was told that the company (JCR) who used the helicopter is no longer with Eversource.

Various action plans were also discussed to be considered to address the noise situation, such as:

1. Having an arborist visit the ROW and come up with solutions both during construction and post construction
2. Possibly suspend any helicopter use in that area ("no fly zone")
3. Have Construction representatives review their plans with Sue and Paul well before any physical activity takes place
- 4. Possibly having the Coviellos take a vacation during the period of "high construction activity"**

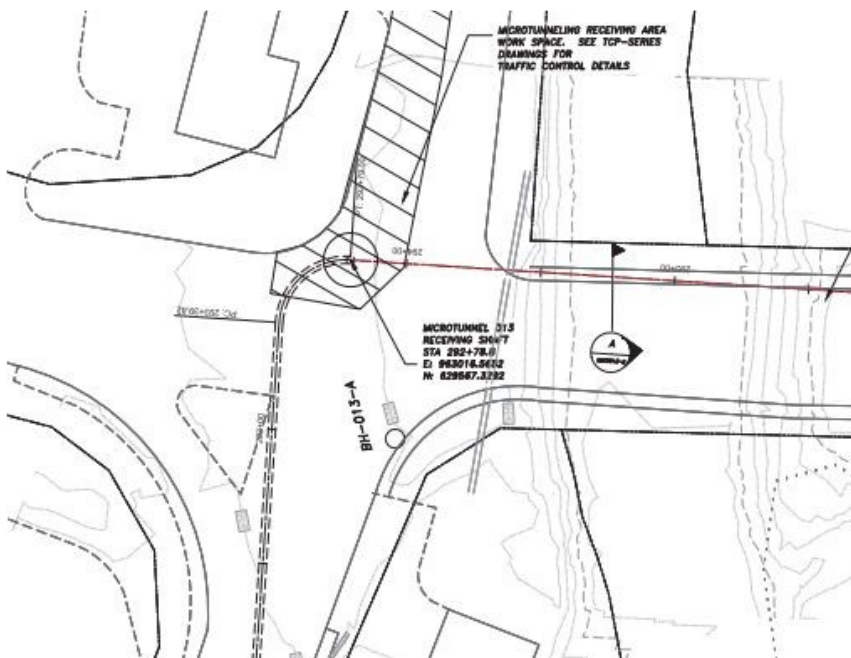
Please note that these were discussion points and not firm commitments.”

(My emphasis.)



A bridge attachment would be required if the route were to follow Easton Road. The surrounding road is too close and has a tight bend to be able to utilize a horizontal bore and there is not enough laydown area to utilize an HDD.

If a bridge attachment cannot be used, the route could have headed west on Frontage Road instead of Profile Road approximately 4,000 feet back. Frontage Road parallels Profile Road, but is approximately



Route above was rejected as problematic, but the proposed route (left) is identical except that it comes from the north rather than the south.



Left: from the same document, area needed for HDD pits and equipment.

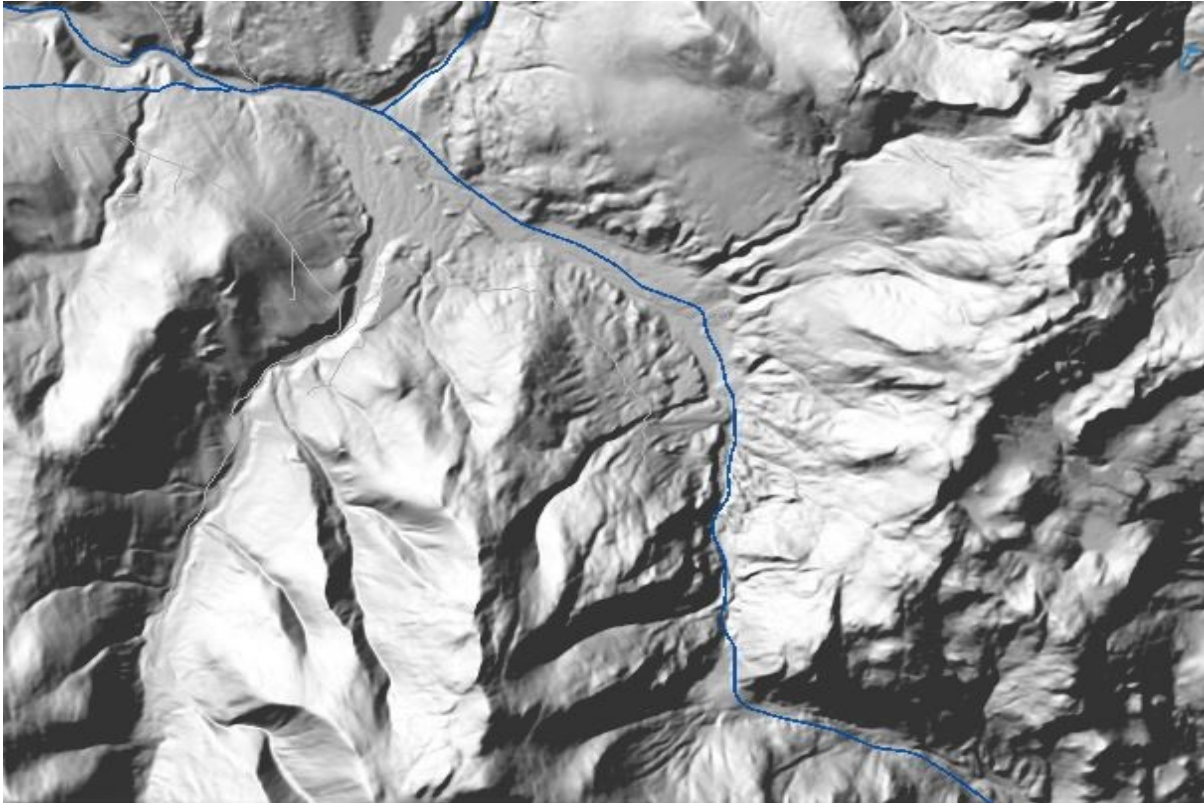
Below: There is not room for a 20' x 20' x 60' HDD slurry pit at this planned location. Paved road width is 25'. Damages and risks are unacceptable.



Proposed burial route through Kinsman Notch, Lidar.

“Mr. Bisbee, can you tell me if you know how far away from the Project can the water supply be impacted?”

Mr. Bisbee: “It's going to depend on the circumstances. If there's no direct effect on wetland beyond where the work is taking place, if there were some anomaly that occurred during the work that caused some runoff, then it could go off site. But I can't give you a limit to that.”

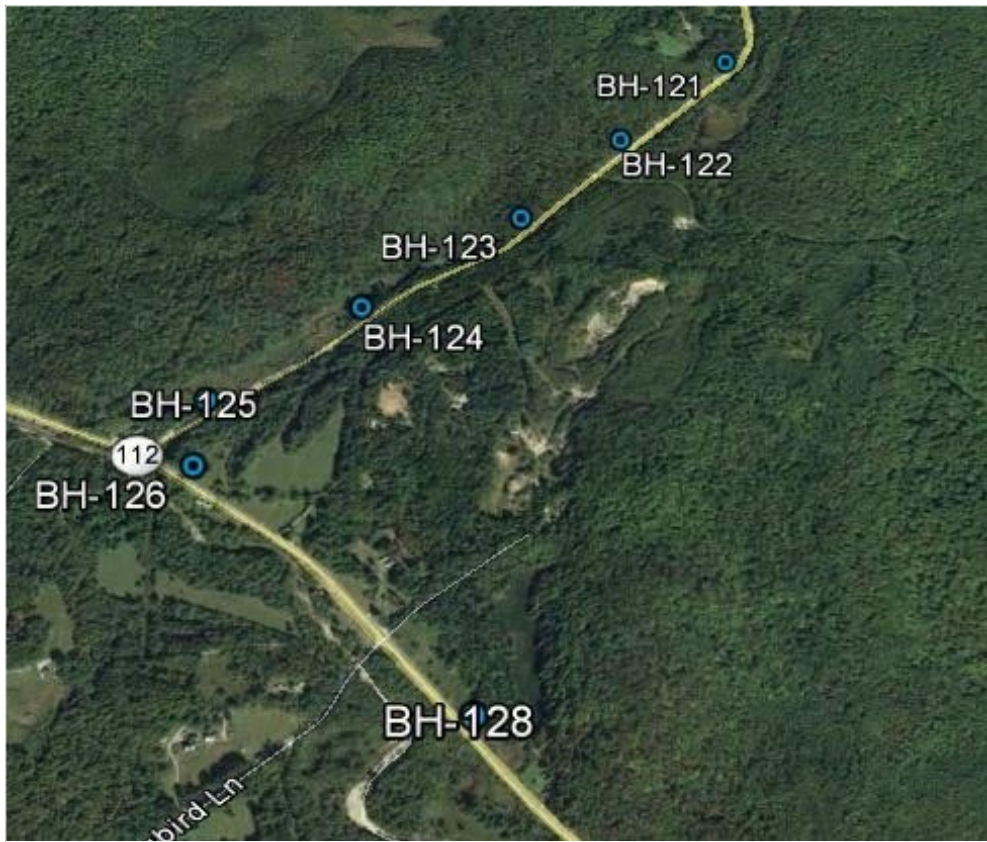


This watershed, the Wild Ammonoosuc, flows in to the Connecticut River. From Mud Pond at the top of Kinsman Notch (near where the Appalachian Trail crosses the proposed route) water flows more than 200 miles to the Atlantic Ocean.

<https://www.youtube.com/watch?v=LfQuTBmW4RU>

http://www.nhsec.nh.gov/projects/2015-06/transcripts/2015-06_2016-04-12_transcript_pending_motions_lincoln.pdf (pgs 402-3)

Contaminants and water movement.

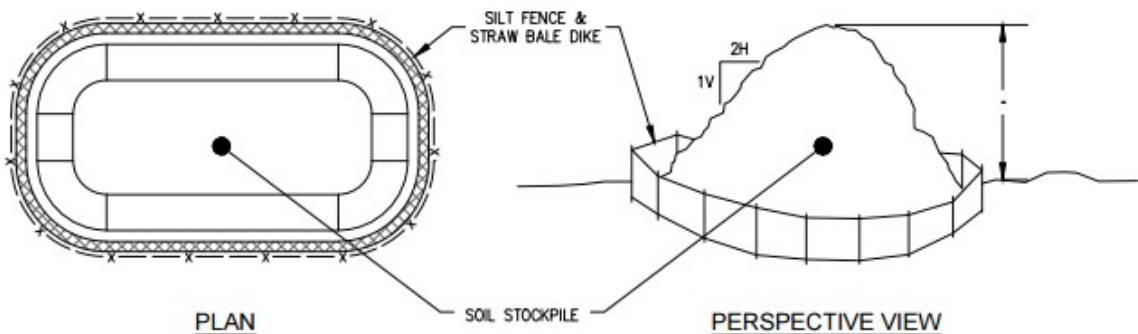


Borehole locations in Easton, junction of Route 116 and 112 (bottom.)

Hydrocarbons were noted at holes 122, 125, 126 and 128, indicating a pollution plume. Remediation would be required before any construction. DOT takes no responsibility for any environmental effects outside the road easement. Groundwater is high throughout the area as shown in boring logs (Haley and Aldrich and Terracon. Quanta stopped looking) and splice vault cable flotation measures:

10. FINAL SPLICE PIT DESIGN SHALL INCLUDE ANTI-FLOTATION CONSIDERATIONS IN AREAS OF HIGH GROUNDWATER.

DOT classifies roadside soils as mildly contaminated but applicant's plans show no plan for this:

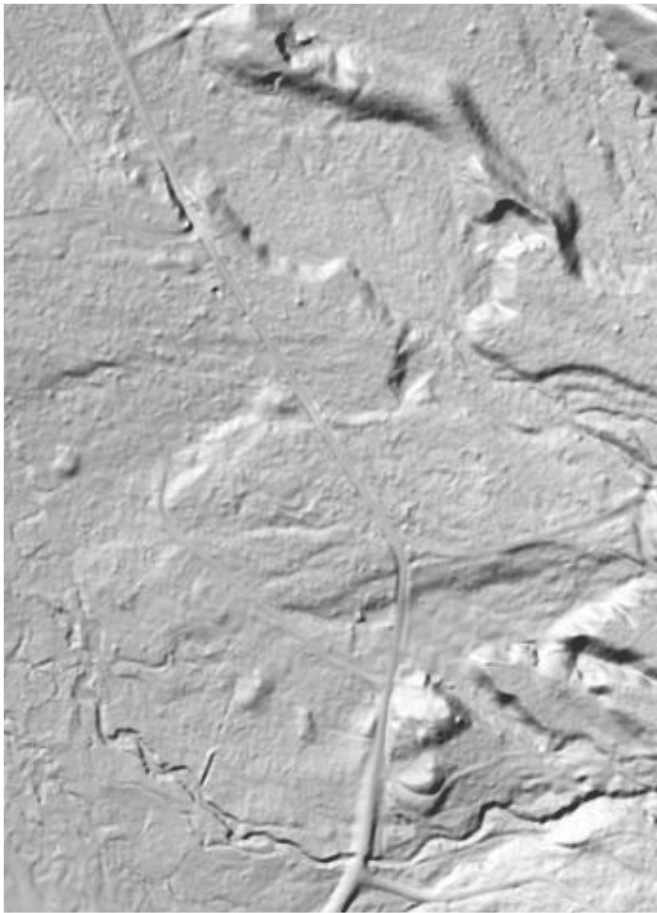


NOTES:

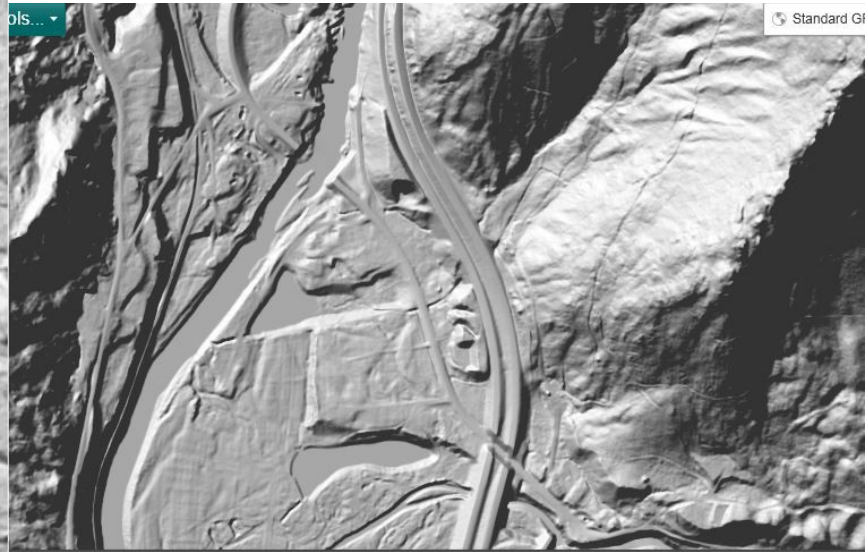
1. SOIL STOCKPILES SHALL BE SITUATED IN A DRY AREA.
2. SILT FENCE AND STRAW BALES MUST BE PLACED CONTINUOUSLY AROUND THE PERIMETER OF ALL STOCKPILES.
3. IMMEDIATELY APPLY MULCH TO ALL STOCKPILES WHICH WILL BE INACTIVE. IN LIEU OF MULCHING, STOCKPILES MAY BE COVERED WITH A SECURE TARP.

DETAIL 15
SOIL STOCKPILE DETAIL
(NOT TO SCALE)

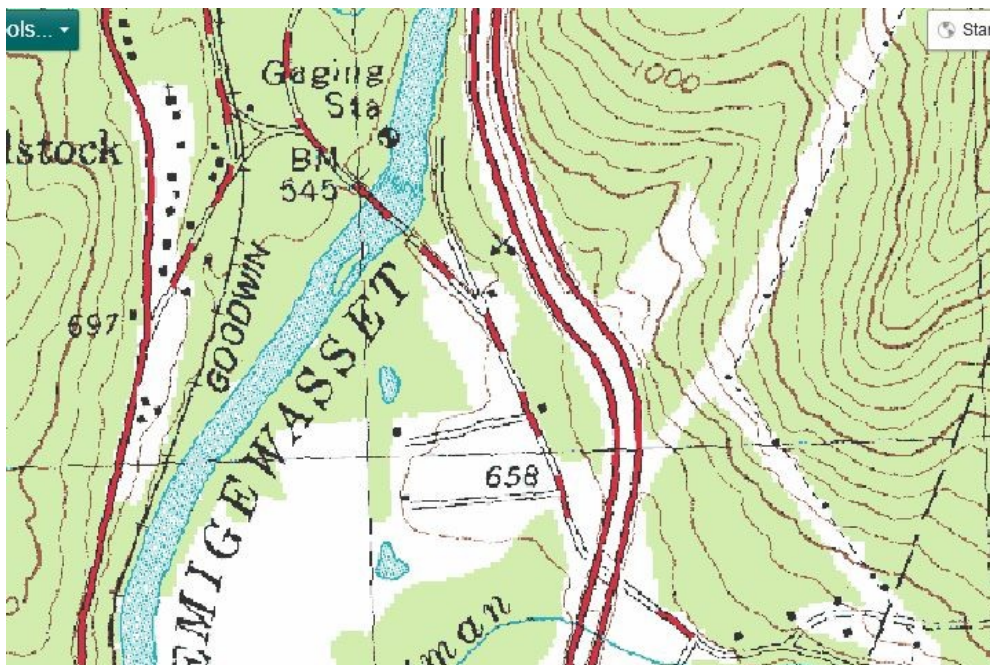
Degrees of previous disturbance:



Left: proposed burial route, Route 116, Easton. Note low degree of disturbance. DOT has no definition of disturbance for roads and has not assessed the proposed route for disturbance.



Above, left to right: Route 3, (proposed route), railroad, Route 175, I-93, and overhead route (path contouring hillside.) Below, topo of lidar image above.



What the applicant promises for protection of wetlands cannot be believed. Below, before and after Eversource work in wetlands, C-129 line, Deerfield:



Kris Pastoriza
December 22, 2016