Attachments

- Emergency Response Capability
- Schodack, NY - Chapter 185 - Excavations Permit
- Transportation Impact Assessment Scope of Work
- Local Roads
- Town of Nassau, NY Driveway Standards
- AECOM Correspondence
    - Water Supply Impact Maps
    - Environmental Maps
- Indiana Technical Guidance / Investigation of Manmade Preferential Pathways for Contaminant Transport
- Town of Lanesborough, MA Water Supply Protection Overlay Bylaw
- Town of Nassau, NY Aquifer Protection Overlay Regulations
- Dalton, MA Stormwater Management & Erosion Control Bylaw
- Dalton, MA Stormwater Management & Erosion Control Regulations
- Dalton, MA Scenic Mountain Act Approved Map
- Dalton, MA Scenic Mountain Act Regulations
- Report on the Potential Impacts to the Natural Resources from a Proposed Natural Gas Pipeline in the Town of Nassau, NY

EMERGENCY RESPONSE CAPACITIES – BERKSHIRE & RENSSELAER COUNTIES
(partial list)

Berkshire County, Massachusetts

Hancock Volunteer Fire Department
- All-volunteer
- 3 engines, 1 tanker, 2 forestry, 1 ATV
- Police- rely on State Police; no local officers
- EMS – served by Village Ambulance in Williamstown; full-time staff; 3 ambulances

Lanesborough Volunteer Fire Department
- All-volunteer
- 2 engines, 1 tanker, 2 forestry, 2 ATV
- Police – full-time department
- EMS (LVFD) – 1 ambulance; volunteer staff

Cheshire Volunteer Fire Department
- All-volunteer
- 2 engines, 1 tanker, 1 forestry, 1 ATV
- Police – part-time department; backed up by State Police
- EMS – served by Adams Ambulance; full-time staff; 3 ambulances

Dalton Fire & Water District
- 1 full-time Chief; 2 fire-fighters on grant (1 year remaining); 34 volunteers
- 3 pumpers
- 2 old military vehicles converted for forest fire use.
- Depending on the location of the calls and our personnel availability, response times from 3 to 8 minutes
- Police – full time department
- EMS is all-volunteer; 1 ambulance

Hinsdale Volunteer Fire Department
- All-volunteer
- 2 engines, 1 forestry, 1 ATV
- Police – full time department
- EMS (HVFD) – 1 ambulance, volunteer staff

Peru Volunteer Fire Department
- All-volunteer
- 1 engine, 2 tankers, 1 forestry, 1 ATV
- Police – part-time department; backed up by State Police
- EMS – rely on Hinsdale FD ambulance

Windsor Volunteer Fire Department
- All-call volunteer fire department, 15 active members
- Basic equipment inventory – 1 NFPA compliant pumper, 2 NON compliant pumpers, 1 Tanker, 1 Brush Truck, 1 ATV
- Average response times - 10-15 minutes
- Police – part-time department; backed up by State Police

- EMS (WFD) – 4 volunteer EMTs, 11 members; 1 ambulance; average response times – 10-15 minutes

Rensselaer County, New York

Town of Nassau

- Hoags Corners Ambulance
  - All volunteer; 16 active responders; half are certified EMTs
  - one ambulance certified to comply with DoH standards for BLS response and transport
  - Evenings and weekends (when we have assigned duty crews) off the floor within 9 minutes (typically less). Daytime weekday calls, that could stretch to 15 minutes if able to gather a crew at all. Drive time to the intersection of Clarks Chapel and Nassau Averill Park Road (approximately where the compressor station will be) is about 7 minutes, for a total response time of between 16 and 22 minutes
- Nassau Ambulance
  - Paid day crew and volunteer night crew with one ambulance certified.
- Tsatsawassa Fire Department
  - 20 Volunteer members 15 of which are active firefighters and 4 of them are EMS/First Responders (EMS are also members of Hoags Corners Ambulance Squad)
  - 2- 1250 G.P.M pumpers with 1200 gallon water tanks
  - 1- 2000 Gallon Tanker
  - 1- 4x4 mini pumper/brush truck/EMS vehicle with 300 gallon tank
  - Response times average 1-7 minutes
  - Hazmatt Technical training
  - 6 member F.A.S.T team '' fire fighter assisted search team''
- Hoags Corners Fire Department:
  - All-volunteer department with approximately 25 active members
  - 1-3000 gallon tanker and two 1200 gallon pumpers
  - four-wheel drive Squad has approximately 300gal and responds to EMS and Brush fire calls
  - Approximate response time is between 5 and 8 minutes
- Nassau Fire Department:
  - All-volunteer - 29 active members
  - 3 Class A ETAS
  - 1 Brush/Utility truck
  - Average off the floor time is 3 to 5 minutes.

Town of Schodack Fire Department

- 100 member all-volunteer department
- 5 EMTs
- 4 pumper fire trucks, various capabilities; 1 100 foot ladder tower truck
- Foam Type: Alcohol TC/Qty: 250 gallons; 30 gallons Class AA Foam, 30 gallons class AB Foam; onboard tanks on 3 pumper fire trucks; using Hale Foam Pro System
- Haz-Mat capabilities: 1 explosion meter; 2 CO detectors; 3/MSA 5 gas detectors inc. Chlorine Gas

STATION	BATTALION	EMS ZONE	SYSTEM	PRIMARY TALK GROUP
06 CASTLETON	**4**	**202**	**4 SOUTH**	**4-3**

CHIEFS	APPARATUS	PUMP	TANK/LADDER
1	6-6	1250	1000
2	6-7	1000	1000
3	6-9	1250	1000
	UTILITY 6A		
	UTILITY 6B		

SPECIALIZED EQUIPMENT

FOAM A - 10
PORTABLE GENERATOR - 2
PORTABLE PUMP - 2
SUBMERSIBLE PUMP -1
REHAB SUPPLIES

SPECIALIZED TEAMS

ICE RESCUE

SPECIALIZED APPARATUS

Box Alarms
Station Generator

OTHER

COMMUNICATIONS

46.22
COLU COUNTY

STATION	BATTALION	EMS ZONE	SYSTEM	PRIMARY TALK GROUP
12 - East Schodack	**4**	**202**	**4 SOUTH**	**5-1**

CHIEFS	APPARATUS	PUMP	TANK/LADDER	
1	12-1	1500	1000	
2	12-7	1250	1000	
3	ENGINE-RESCUE 12	1500	1000	
	FIRST RESPONSE 12			FWD
	UTILITY 12	50	150	FWD/BRUSH

SPECIALIZED EQUIPMENT

A FOAM 20
15 KW GENERATOR - 1
LIGHT TOWER FIXED - 2
PORTABLE GENERATOR - 5
PORTABLE PUMP - 3
SUBMERSIBLE PUMP - 2

Station Generator

SPECIALIZED TEAMS

ICE RESCUE

SPECIALIZED APPARATUS

ATV- GRASS/BRUSH/TRANSPORT
SWIFT WATER BOAT
GRASS/BRUSH FWD
ENGINE-RESCUE

OTHER

COMMUNICATIONS

FIRE POLICE
46.22
46.04

STATION	BATTALION	EMS ZONE	SYSTEM	PRIMARY TALK GROUP
15 HOAGS CORNERS	**3**	**203**	**4 SOUTH**	**4-3**

CHIEFS	APPARATUS	PUMP	TANK/LADDER	
1	15-7	1250	1000	
2	15-5	1250	1000	
	15-9	1250	3000	QUIK DUMP
	SQUAD 15	300	300	FWD/BRUSH

SPECIALIZED EQUIPMENT		SPECIALIZED TEAMS	SPECIALIZED APPARATUS
AIR BAGS		ICE RESCUE	SEFU-OFPC
GENERATOR 15 KW	1		SQUAD
PORTABLE GENERATOR	3		TANKER WITH QUICK DUMP
PORTABLE PUMP	4		
SUBMERSIBLE PUMP	2		

Box Alarms
Station Generator

OTHER

COMMUNICATIONS

EMS 340,400,715		NASSAU HIGHWAY
ST 15 HB - 153.950		COLUMBIA COUNTY
46.10	15	
46.22		
46.04		

STATION	BATTALION	EMS ZONE	SYSTEM	PRIMARY TALK GROUP
22 NASSAU	**4**	**203**	**4 SOUTH**	**4-3**

CHIEFS	APPARATUS	PUMP	TANK/LADDER	
1	22-1			FWD
2	22-6	1000	1250	
3	22-7	1250	1000	
	UTILITY 22	300	125	FWD
	TSU-22			

SPECIALIZED EQUIPMENT

FOAM A - 80
15 KW GENERATOR
PORTABLE GENERATOR - 3
PORTABLE PUMP 4

SPECIALIZED TEAMS

ICE
WATER

SPECIALIZED APPARATUS

COUNTY MCI TRAILER

Box Alarms
Station Generator

OTHER

COMMUNICATIONS

46.22
COLU CO

STATION	BATTALION	EMS ZONE	SYSTEM	PRIMARY TALK GROUP
32 SCHODACK VALLEY	**4**	**202**	**4-SOUTH**	

CHIEFS	APPARATUS	PUMP	TANK/LADDER	OTHER
1	32-2			FWD
2	32-6			
	32-7			
	Rescue 32			
	First Response 32			

SPECIALIZED EQUIPMENT	SPECIALIZED TEAMS	SPECIALIZED APPARATUS
FOAM A - 50		Rescue
15 KW GENERATOR - 2		BRUSH FWD
LIGHT TOWER FIXED - 2		
PORTABLE GENERATOR - 1		
PORTABLE PUMP - 3		
SUBMERSIBLE PUMP - 2		

Station Generator

OTHER

COMMUNICATIONS

STATION	BATTALION	EMS ZONE	SYSTEM	PRIMARY TALK GROUP
34 SOUTH SCHODACK	**4**	**202**	**4 SOUTH**	**4-3**

CHIEFS	APPARATUS	PUMP	TANK/LADDER	
1	34-2	750	500	FWD/BRUSH
2	34-3	1500	1000	
3	34-6	1500	1250	
	34-7	1000	1500	
	34-9	1500	3800	
	RESCUE 34			
	FIRST RESPONSE 34			

SPECIALIZED EQUIPMENT

FOAM B - 50
15 KW GENERATOR - 3
LIGHT TOWER FIXED - 1
PORTABLE PUMP - 2

SPECIALIZED TEAMS

SPECIALIZED APPARATUS

BRUSH FWD
ENGINE-RESCUE
TANKER

Box Alarms
Station Generator

OTHER

COMMUNICATIONS

COLU CO

STATION	BATTALION	EMS ZONE	SYSTEM	PRIMARY TALK GROUP
36 STEPHENTOWN	**5**	**203**	**3 SOUTH**	**3-2**

CHIEFS	APPARATUS	PUMP	TANK/LADDER	
1	36-1	1000	1000	CAFS
2	36-2	1000	1000	CAFS
3	36-7	1000	1250	
	RESCUE 36			
	BRUSH 36	350	135	
	AMBULANCE 3636			

SPECIALIZED EQUIPMENT	SPECIALIZED TEAMS	SPECIALIZED APPARATUS
LIGHT TOWER FIXED - 1		CAFS
PORTABLE GENERATOR - 1		BRUSH FWD
PORTABLE PUMP - 2		RESCUE

Box Alarms
Station Generator

OTHER

COMMUNICATIONS

FIRE POLICE	EMS 340,400,715
46.10	HANCOCK
46.22	WILLIAMSTOWN
COLU CO	BENN EMS
BERK CO	BERK COUNTY EMS

Town of Schodack, NY
Friday, July 17, 2015

Chapter 185. EXCAVATIONS

[HISTORY: Adopted by the Town Board of the Town of Schodack 5-14-1992 by L.L. No. 1-1992. Amendments noted where applicable.]

§ 185-1. Permit required.

It shall be unlawful for any person, firm or corporation to make any opening or excavation in or to tunnel under any street, highway or public place in the town without having obtained a permit as required herein or without complying with the provisions of this chapter or in violation of or at a variance with the terms of any such permit.

§ 185-2. Permit application; fees; indemnification of town.

A. Application for such permits shall be made to the Town Clerk or to such other officer as the Town Board may, by resolution, designate and shall describe the location of the intended excavation or work, the size thereof, the purpose thereof and the person, firm or corporation for whom the work is being done and shall contain an agreement that the applicant will comply with all ordinances and laws relating thereto.

B. The fee for such permit shall be $150. Such fee may be increased by resolution of the Town Board.
[Amended 5-10-2001]

C. Each and every applicant shall agree to defend, indemnify and save harmless the town from any and all claims arising from or as the result of the intended work.

§ 185-3. Insurance required.

No permit shall be issued until the applicant shall first have placed on file with the Town Clerk satisfactory evidence of public liability insurance in the amount of not less than $1,000,000 for any one person and not less than $3,000,000 for any one accident and property damage insurance in the amount of not less than $500,000 for any one accident. Said insurance shall by its terms afford protection to the town against any such liability arising in connection with the intended work. The Town Board may, by resolution, hereafter increase the amount of insurance required pursuant to this section.

§ 185-4. Deposit required.

A. No permit shall be issued until the applicant shall have deposited with the Town Clerk or such other officer of the town as the Town Board, by resolution, may designate a bond as provided

herein or a deposit in the sum of $15,000, of which $150 shall be for inspection and administrative costs of the town, which is not refundable. The Town Board may, by resolution, hereafter increase the deposit required by this section, as well as the amount of the inspection fee and administrative costs.
[Amended 5-10-2001]

B. The deposit shall be in cash or by certified check or bank draft made payable to the town.

C. Said deposit is intended to insure the proper restoration of the street's surface, and from this deposit shall be deducted the expenses of the town, if any, or relaying the surface of the ground or pavement and of refill. If this is done by the town or at its expense, the balance shall be returned to the applicant, without interest, after the excavation or opening is completely refilled and the surface or pavement is restored.

D. The deposit may be held by the town for as long as 90 days after the applicant has notified the town of the completion of the work. Where the work, pursuant to this article, has been performed by the town, then the town may hold the deposit for 90 days after the last day of work.

§ 185-5. Bond in lieu of deposit.

A. Any person, firm or corporation may, in lieu of the deposit required hereunder, file and keep on file with the town a bond in the minimum amount of $15,000 given as security for the faithful performance of the terms of any permit issued or to be issued.
[Amended 5-10-2001]

B. Should the cost of work in the street opening to be performed exceed the security provided herein, then the Town Clerk or other designated officer may require an increase in said bond amount.

C. In any event, the nonrefundable charge of $150 shall be paid upon issuance of each permit.
[Amended 5-10-2001]

§ 185-6. Waivers.

Upon a showing of a hardship by the applicant, the Town Board may, upon the recommendation of the Town Highway Superintendent, grant a waiver of the terms of this chapter.

NORTHEAST ENERGY DIRECT PROJECT
TRANSPORTATION IMPACT ASSESSMENT SCOPE OF WORK

Background

The construction of the Northeast Energy Direct Project is going to negatively impact Berkshire and Rensselaer roads because the process involves transporting heavy equipment and moving massive amounts of materials, both of which intensify damage to road surfaces and bases, bridges, and culverts. The construction activities will be intense and spread across a wide area. Based on the existing condition of the transportation infrastructure and the sheer amount of wear and tear projected from the construction, transportation infrastructure improvements will be needed prior to, during, and at the conclusion of pipeline construction activities. Tennessee Gas Pipeline Company (TGP) shall ensure Berkshire and Rensselaer roads utilized by the pipeline construction activities are in adequate condition and safe to travel during construction and in a good state of repair at the conclusion of pipeline construction activities activities.

In advance of the pipeline construction activities, TGP shall conduct an assessment of the existing condition of all roads, bridges and culverts that may be used as transport routes during construction. Additionally, transport routes should be reviewed and approved, including operations/activity schedules, as a means to offset the damage from additional heavy truck traffic. As part of this effort, in each municipality, TGP will develop recommendations to alleviate operational impacts, mitigate congestion and delay, and insure safety. Each transport route assessment shall outline the required road improvements and upgrades that must occur prior to the start of pipeline construction activities. TGP shall propose how it will coordinate with MassDOT, NYSDOT, Rensselaer County, NY, and impacted municipalities to monitor and report the condition of transport route roads and associated transportation infrastructure. All financial costs for all required improvements to the transportation infrastructure, both before, during and after pipeline construction activities (including warranty repair work), and the cost associated with implementation, monitoring and management of the transport routes shall be borne by TGP.

The scope of work below details the elements to be addressed in the Transportation Impact Assessment.

Transportation Impact Assessment Scope of Work

The pipeline construction will require the large scale movement of construction equipment and materials. Therefore, BRPC, Rensselaer County and impacted municipalities propose a detailed protocol to protect public infrastructure from damage and to properly manage the operational and safety issues which transportation impacts create.

Once the pipeline route and locations of all compressor stations, meter stations, valve stations, pipeyards and contractor yards are determined, TGP shall determine the existing conditions of the roadways and transportation infrastructure necessary for transport of

materials and equipment for pipeline construction and disposal of forest products and rock. TGP will then estimate how many loaded truck trips, and the type, weight (gross vehicle weight and axel weight) and turn-radii of the vehicles necessary to transport the materials and equipment that will travel each route in order to estimate the damage/degradation Berkshire roads will receive. TGP's analysis shall also include an engineering cost estimate for all work to maintain adequate and safe use of the roadway(s) (and associated bridge/culvert structures) during pipeline construction activities and for all work to bring each route to a good state of repair at the conclusion of the pipeline construction activities. Due to the numerous discrete sites and areas which will be impacted, a separate analysis will be needed for each area.

The existing conditions and proposed infrastructure improvements shall be documented in a Transportation Impact Assessment and Corrective Measures Study/Proposal and distributed to the affected municipality(ies), Rensselaer County, NY, NYDOT and MassDOT for staff-level review for each proposed route and site used in pipeline construction activities. TGP shall provide adequate funds for each of the municipalities and Rensselaer County to retain independent Professional Engineering services to review the information provided by TGP. Such funds and independent review shall be provided utilizing the process established in M.G.L. Chapter 44, Section 53G.

Following this review, each route's Transportation Impact Assessment and the Corrective Measures Study/Proposal will be submitted to the Chief Executive Official for each pertinent municipality and Rensselaer County. Transportation Impact Assessment and the Corrective Measures Study/Proposal shall be certified by a Professional Engineer licensed in Massachusetts or New York, depending on the jurisdiction. The municipality and County may hold a public hearing. The Select Board, Town Board of Supervisors, and County Executive shall have final approval of any agreement, permit or license needed to protect the public interest. They may, during the review process, require that additional information be provided and that the Assessment and Study/Proposal be modified.

The following information, at a minimum, shall be presented for review and decision to the appropriate municipality, county, NYSDOT and/or MassDOT (as described above) in the Transportation Impact Assessment:

1. Pavement Condition:

   TGP should provide information that determines what repairs are needed for the road on each transport route, and when they should be fixed in order to preserve the municipality or county's assets, and how to maintain traffic for the travelling public. The repair estimate methodology should be clearly and concisely presented along with a construction timeline for how TGP will complete necessary repairs to the roads before, during, and after the pipeline construction activities. Solely at the municipality or county's discretion, TGP shall provide adequate funds for the municipality or county

to retain an independent Professional Engineer to review the information provided by TGP and to monitor impacts during pipeline construction activities, utilizing the process established in M.G.L. Chapter 44, Section 53G. This assessment of existing pavement should include acquiring pavement cores from the existing roadways and performing a structural analysis by a Professional Engineer to ensure that the existing pavement can adequately support the anticipated additional loading caused by pipeline construction activities.

2. Bridges:

   MassDOT and NYSDOT regularly inspect all bridges with spans of twenty (20') feet or greater (municipally owned and State owned) every two years and issue condition reports to the municipalities for their locally owned structures. Weight restrictions on all bridges are set by MassDOT and NYSDOT and are legally enforceable. Proposed transport routes may need to be altered to avoid bridge structures with weight restrictions or TGP may be required to make necessary repairs, in a manner acceptable to the bridge owner (the municipality, MassDOT, or NYSDOT) to those bridges with restrictions which it intends to use.

   In addition, Massachusetts General Laws, Chapter 85, Section 35 requires that, before construction or alteration, all municipally implemented bridge projects undergo a structural design adequacy review and approval by MassDOT. These "Chapter 85 Reviews" are required to ensure that the bridge has been properly designed in accordance with the AASHTO Bridge Design Code and that the structure will be safe for the anticipated design loading.

   TGP and each bridge owner will agree on a process to monitor bridges on transport routes for damage during the pipeline construction activities and TGP shall make repairs to bridges during pipeline construction activities if the bridge owner determines, at its sole discretion, that repairs are needed due to TGP's pipeline construction activities. After the Pipeline construction activities, TGP shall provide an assessment of each bridge structure's condition and the affected owner, in consultation with the District Bridge Inspection Engineer, shall review each post pipeline construction inspection and determine what repairs are needed and how TGP will complete those repairs. Needed repairs are solely TGP's responsibility, with all design and work subject to review and approval by the bridge owner.

   Solely at the municipality or County's discretion, TGP shall provide adequate funds for the municipality or County to retain an independent Professional Engineer to review the information provided by TGP and to monitor impacts before, during and after pipeline construction activities, utilizing the process established in M.G.L. Chapter 44, Section 53G.

3. Culverts:

   Minor bridges and culverts that span less than 20 feet are not regularly inspected by MassDOT or NYSDOT. If it is determined that a proposed transport route must use one of these structures, and the municipality wants to determine its structural condition, a Professional Engineer should be retained by TGP to perform a condition assessment and submit a copy of the report to the municipality and MassDOT. Proposed transport routes may need to be altered to avoid culvert and bridge structures which are determined to be structurally inadequate or TGP may be required to make necessary repairs, in a manner acceptable to the culvert or bridge owner (the municipality, County, NYSDOT or MassDOT and solely at the discretion of the bridge owner), to those culverts or bridges which it intends to use.

   TGP and each municipality or County will agree on a process to monitor minor bridges and culverts on transport routes for damage during pipeline construction activities and TGP shall make repairs to minor bridges and culverts during pipeline construction activities if the bridge owner determines, at its sole discretion, that repairs are needed due to TGP's pipeline construction activities. After pipeline construction activities affecting a structure are complete, TGP shall provide an assessment of the minor bridge or culvert structure's condition to the pertinent municipality or County for review. The municipality or County can require repairs or replacement for any culvert damaged and such repair/replacement is solely the responsibility of TGP, subject to approval by the municipality or County.

   Solely at the municipality or County's discretion, TGP shall provide adequate funds for the municipality or County to retain an independent Professional Engineer to review the information provided by TGP and to monitor impacts before, during and after pipeline construction activities, utilizing the process established in M.G.L. Chapter 44, Section 53G.

4. Monitoring:

   TGP shall propose how it will monitor and provide status updates to each municipality and the County for each transport route used during pipeline construction activities to ensure that repairs, improvements, and TGP's construction traffic are consistent with the proposed route and schedule. Such proposal may be modified at the municipality or County's discretion during the course of pipeline construction activities if issues arise which were not foreseen or impacts are found to be greater than anticipated or which are unacceptable to the community or County. Solely at the municipality or County's discretion, TGP shall provide adequate funds for the municipality or County to retain an independent Professional Engineer to review the information provided by TGP and to monitor impacts during pipeline construction activities, utilizing the process established in M.G.L. Chapter 44, Section 53G.

5. Traffic Operations during Pipeline Construction Activities:

   TGP shall provide a Traffic Management Plan for each stage of pipeline construction activities, which is subject to municipal and County review and approval. The plan shall be adequate to maintain existing public use of public roadways. TGP shall be responsible for reimbursing any municipal or County costs incurred to monitor or implement any portion of the Traffic Management Plan.

6. Permitting:

   A permit is required from MassDOT and NYSDOT for Overweight and/or Over Dimensional Loads to travel on State-owned highways. Relevant information on overweight and overdimensional loads for Massachusetts may be found at the following link:

   http://www.mhd.state.ma.us/default.asp?pgid=TruckIndex&sid=level2

   If TGP or its agent(s) need to conduct operations within the State Highway Layout, then a "Permit to Access State Highway" is required from MassDOT. There is a similar process for NYSDOT. Relevant information regarding performing work within state owned highways in Massachusetts may be found at the following link:

   http://www.mhd.state.ma.us/default.asp?pgid=content/access_permit&sid=about

   Municipalities and the County may have permitting requirements for use of locally-owned roadways, for driveway access, and for traffic operations. It is solely the responsibility of TGP to identify and obtain any permits necessary from local authorities.

   It is solely the responsibility of TGP to obtain any permits necessary to repair damage to the transportation system before, during, and after pipeline construction activities. TGP shall ascertain and present what permits may be necessary to the owner of the pertinent infrastructure. TGP shall be responsible for reimbursing municipal or county costs to review, obtain, comment upon or issue required permits. Solely at the municipality or County's discretion, EPA shall provide adequate funds for the municipality or County to retain an independent Professional Engineer to review the information provided by TGP and to inspect required repair/replacement activities, utilizing the process established in M.G.L. Chapter 44, Section 53G.

7. Other Existing Conditions:

TGP shall provide adequate information for a comprehensive review of each transport route in each municipality used during pipeline construction activities. The information should include, but is not limited to, the following:

a. Traffic: Traffic counts and forecasted number of additional vehicles (trips, weight, and number of axles) used for each construction location.
b. Turning Radii: Diagrams of each intersection and overlay turning templates for the vehicles used in the construction. It is important that the turning radii are adequate for increased truck traffic to ensure the safety and function of the routes for all road users. The municipality and County will review the information, decide what improvements are needed, and approve how TGP will complete the upgrades.
c. Road Surface: Paved roads are preferred for transport routes, but any gravel roads that are necessary for the transport routes should be identified. TGP shall ascertain what the remaining service life is for each road used for the transport route and propose how to extend that remaining service life so it is at least the same after pipeline construction activities.
d. Safety: TGP shall assess the three most recent years of crashes on each transport route and present improvements that will increase safety. The municipality or County shall review and approve the design and implementation of the improvements.
e. Road & Shoulder Width: TGP shall present improvements that improve each proposed transport route based upon applicable design criteria and surrounding context for lane width, shoulder width, turning radii, and all other geometrics, as agreed upon with the owner of the roadway.
f. Congestion and delay: TGP shall perform a level of service analysis for roadways and intersections that will be impacted by the movement of equipment and materials. Recommendations shall be incorporated into transport route proposals for the purpose of alleviating congestion and delay.
g. Route Signage: TGP shall provide a plan to demarcate the transport routes so the contractors and general public know when and how it is used for construction during the pipeline construction. The municipality and County shall review and approve the design and implementation of the route signage.

<u>Content of Final Transportation Impact Assessment and the Corrective Measures Study/Proposal:</u>

Each proposed transport route will be presented to the community/municipality(ies)/ County in the form of a final report that includes the Transportation Impact Assessment and a Corrective Measures Study/Proposal. This report identifies the proposed transport routes, the required improvements to transportation improvements (both initial and final), the basis for the selection of a route(s)/segment(s), and cost estimates for roadway rehabilitation at the conclusion of the project so that the road is in a state of repair

acceptable to the owner of the infrastructure. Once approved by the municipality's Select Board or Town Board, Rensselaer County, NYSDOT, and/or MassDOT, this Corrective Measures Study/Proposal document shall serve as a legally binding commitment to insure that the roads which comprise the transport routes are in a continual state of good repair. At a minimum, the Corrective Measures Study/Proposal document shall consist of the following elements:

1. Statement of the purpose and need for the transport route;
2. Summarize stakeholders' input;
3. Present existing conditions and explain the importance of each data factor presented for the municipality and County to review the route;
4. Explain what additional traffic the transport route will generate, state when the transport route will be used, and describe the vehicles performing the transporting;
5. The basis on which the route and segments were selected;
6. Monetize the estimated repairs in consultation with municipalities, the County, NYSDOT and MassDOT;
7. Provide a schedule for improvements and construction traffic (the spring thaw period when roads are at their most vulnerable should be specifically excluded);
8. A mechanism for TGP to remain financially responsible for the repairs such as the placement of funds in an amount and form acceptable to the municipality or County's Chief Executive Official for the improvement and repair of the transport routes prior to using each transport route during the pipeline construction activities. At the conclusion of the pipeline construction activities impacting a specific area or set of roadways, each Town's Select Board or Town Board, Rensselaer County, NYDOT, and/or MassDOT shall discharge the financial responsibility for road repairs when it is determined that all roads and structures used in transport routes are in a state of good repair; and
9. A warranty statement that TGP will provide a 5 (five) year warranty on the repairs/improvements made to all transport roads to insure a continued state of good repair. The warranty period shall begin at the date of discharge of the financial responsibility for road repairs by the Select Board or Town Board, Rensselaer County, NYSDOT and/or MassDOT. The appropriate financial mechanism and the amount of funds to cover the warranty repairs will be determined by the municipality or County's Chief Executive Official.

Local Roads

The following local roads can be expected to be directly impacted based on the pipeline route maps provided in the March Resource Reports. It should be noted that subsequent to that filing, initial proposals regarding pipeyards and contractors yards were provided; based on recent experience elsewhere, we presume those will be changed considerably and thus did not go through an analysis to determine which other roads might be impacted due to their locations.

<u>Town of Lanesborough, Massachusetts</u>

- Potter Mountain Road – primarily a gravel road, on very steep terrain; paved portion is in good condition as it was repaved summer 2015; bridge crossings: none; culverts: various culverts with most being in good shape, except for the ones at the upper end of Potter Mountain Road, which would require replacement and/or additional gravel.
- Ore Bed Road – a gravel road with several culverts that are in good shape for the most part.
- Old Cheshire Road – paved road; pavement condition is 6*; bridge crossings: none; culverts: 7 culverts, all being in fair to good shape.

Access from the nearest arterial highway to the three roads crossed by the pipeline or to other sections of the proposed pipeline in Lanesborough would potentially be on the following roads:

- Balance Rock Road – paved road; pavement condition is 8*; bridge crossings: none; culverts: 7 culverts of various sizes.
- Bull Hill Road – paved road; pavement condition is 8*; bridge crossings: Pontoosuc Lake – MassDOT Bridge Inspection Management System Bridge # L03008, condition rating 78.6†; culverts: 8 culverts of various sizes and conditions.
- Silver Street – primarily gravel/dirt road, with a 600' paved section in good condition; bridge crossings: none; culverts: 8 culverts of various sizes and conditions on gravel portion of road.
- Bailey Road – completely re-paved road over past two summers; bridge crossings: none; culverts: 2 smaller culverts and 1 large arched culvert.
- Brodie Mountain Road – paved road with catch basins and drainage in place over entire length of road; pavement condition is 7*; bridge crossings: Kinderhook Creek – MassDOT Bridge Inspection Management System Bridge # H05007, condition rating 97.8†; culverts: unknown number and condition.
- Prospect Street – paved road; pavement condition is 4*; bridge crossings: none; culverts: unknown number and condition.
- Summer Street – paved road with catch basins and drainage mostly west of Partridge Road, pavement condition is 5*; bridge crossings: none; culverts: There are several culverts below Partridge Road, with the one before the spring being very close to the surface and needing replacement.
- Nobody's Road – unpaved and blocked off for use by Selectmen due to illegal dumping of debris and trash and culvert work that needs to be done.

Depending on exact transport routes, other roads in Lanesborough and the City of Pittsfield which might be impacted:

- Churchill Street
- Hancock Road
- Pecks Road
- Miner Road
- Old State Road

* Pavement conditions in Lanesborough are based on PASER survey conducted by Berkshire Regional Planning Commission in 2013.

† Bridge condition rating derived from MassDOT's Bridge Inspection Management System 2014 data.

Town of Cheshire, Massachusetts

- Nobody's Road – paved road (portion), gravel/dirt (portion); pavement condition is 9*; bridge crossings: none; culverts: unknown number and condition.
- Ingalls Road – paved road; pavement condition is 5*; bridge crossings: none; culverts: unknown number and condition.
- Brough Road – paved road; pavement condition is 8*; bridge crossings: none; culverts: unknown number and condition.

Access from the nearest arterial highway to the three roads crossed by the pipeline or to other sections of the proposed pipeline in Cheshire would potentially be on the following road:

- Ingalls Crossing Road – paved road; pavement condition is 5*; bridge crossings: none; culverts: unknown number and condition.

* Pavement conditions in Cheshire are based on PASER survey conducted by Berkshire Regional Planning Commission in 2014.

Town of Dalton, Massachusetts

- Chalet Road – gravel road; bridge crossings: none; culverts: unknown number and condition.
- Johnson Road – gravel road; bridge crossings: none; culverts: unknown number and condition
- Wahconah Falls Road – paved road; pavement condition is good; bridge crossings: none; culverts: unknown number and condition.
- Adams Road – gravel/dirt road; condition poor; bridge crossings: none; culverts: unknown number and condition.

Access from the closest arterial highway to Adams Road where it is crossed by the pipeline or to other sections of the proposed pipeline in Dalton would potentially be on the following roads:

- Cleveland Road – paved road; pavement condition is good; bridge crossings: none; culverts: unknown number and condition.
- Old Windsor Road – paved road; pavement condition is fair; bridge crossings: East Branch of the Housatonic River - MassDOT Bridge Inspection Management System

Bridge # D01006, condition rating – 82†; culverts: unknown number and condition (at least 3, one perennial stream crossing).

Dalton pavement conditions are based on field assessment by Dalton Public Works Director.

† Bridge condition rating derived from MassDOT's Bridge Inspection Management System 2014 data.

Town of Hinsdale, Massachusetts

- Adams Road – gravel road; bridge crossings: none; culverts: unknown number and condition.
- Old Windsor Road – gravel road; bridge crossings: Windsor Brook MassDOT Bridge Inspection Management System Bridge #H16006, condition rating 80.8†; culverts: unknown number and condition.
- Frank Schnopps Road – chip seal road; condition is 6*; bridge crossings: none; culverts: unknown number and condition.
- New Windsor Road – chip seal road; condition is 5*; bridge crossings: none; culverts: unknown number and condition.

* Pavement condition in Hinsdale are based on PASER survey conducted by Berkshire Regional Planning Commission in 2014.
† Bridge condition rating derived from MassDOT's Bridge Inspection Management System 2014 data.

Depending on exact delivery routes, other roads in Hinsdale and the Town of Peru which might be impacted:

- Main Dalton Road
- George Schnopps Road
- Stone House Road
- Wahconah Falls Road
- May Road
- Smith Road (Peru)

Town of Windsor, Massachusetts

- Peru Road – half paved (towards Rte. 9), half gravel (towards compressor station site); pavement condition is good on paved portion; bridge crossings: none; culverts: unknown number and condition.

- East Windsor Road – paved; pavement condition is fair; bridge crossings: Westfield Brook MassDOT Bridge Inspection Management System Bridge #W41005, condition rating 72.9†; culverts: unknown number and condition.
- Old Route 9 – paved; pavement condition is fair; bridge crossings: none; culverts: unknown number and condition.
- High Street Hill Road – paved (Rte. 9 to Shaw Road), gravel (north of Shaw Road; pavement condition is good; bridge crossings: Westfield Brook MassDOT Bridge Inspection Management System Bridge #W41020, condition rating 98†; culverts: unknown number and condition.
- Shaw Road – paved (Rte. 9 to High Street Hill Road), gravel west of High Street Hill Road); pavement condition is good; bridge crossings: none; culverts: unknown number and condition.
- River Road – paved; pavement condition is fair; bridge crossings: none; culverts: unknown number and condition.

Windsor pavement conditions are based on field assessment by Windsor Public Works Director.
† Bridge condition rating derived from MassDOT's Bridge Inspection Management System 2014 data.

Depending on exact delivery routes, other roads in Windsor which might be impacted:

- Main Dalton Road
- Potash Road
- Nobody's Road
- Crane Road
- May Road
- Main Dalton Road
- Patterson Road

<u>Town of Stephentown, New York</u>

- Round Mountain Road – gravel/dirt road; good road surface condition; 20 foot width
- East Road (County Road 33)
- Madden Road – paved road; pavement condition: good; 21 foot width
- Cemetery Hill Road
- Grange Hall Road – paved road; pavement condition: good; 21 foot width
- Cranston Hill Road (County Road 31)
- West Road (County Road 31)
- Newton Road
- Black River Road- gravel/dirt road; good road surface condition; 18 foot width
- Moore Hill Road – paved road; pavement condition: excellent; 22 foot width
- Calvin Cole Road – paved road; pavement condition: fair; 18 foot width

- Williams Road
- Shepard Road
- Firetower Road

Town of Nassau, New York

- Taborton Road –1.37 miles in length approximately 30 homes and driveways. Double chip seal road over dirt. Condition is fair. Heavy truck and equipment would severely impact road.
- Radley Road – 1.33 miles in length. Approximately 15 homes and driveways. 3 large culverts. Narrow winding dirt road. Spring mud conditions exist. Heavy truck and equipment traffic would severely impact road condition especially in winter and spring.
- Totem Lodge Road (County Road 20) – Town portion is 2.33 miles in length with approximately 30 homes and driveways. Dirt road with poor road conditions in spring and winter. A couple of steep hills and one large culvert. Heavy truck and equipment would severely impact road.
- North Nassau Road – 1.96 miles in length with approximately 15 homes and driveways. Due for chip seal surface treatment 2015. Heavy truck and equipment traffic would damage new chip seal. Farm operation with livestock.
- North Nassau Lane – 0.56 miles in length with approximately 7 homes and driveways. Very narrow dirt road not capable of passing large vehicles. Sections with mud conditions in spring and winter. Unsafe for heavy truck and equipment traffic and traffic would severely impact road condition especially in winter and spring.
- Hoags Corners Road (County Road 18) – County road in poor condition with work scheduled 2015. 10 ton weight limit.
- Old Mill Pond Road – 0.4 miles in length with 5 ton weight limit bridge and dirt road with approximately 6 homes and driveways heavy truck and equipment cannot travel over bridge and large culverts with concern of damage or failure. Heavy truck and equipment would severely impact road. Farm operation with livestock.
- China Hill Road – 1.05 miles in length with approximately 10 homes and driveways. Narrow dirt road with sharp turn and steep hill with winter and spring mud conditions. Heavy truck and equipment would severely impact road. Farm operation with livestock.
- Nassau Averill Park Road (County Road 15) – County road with poor surface conditions and 10 weight limit.
- Millers Corners Road (County Road 50) – County road with scheduled work and surface treatment 2015. Heavy truck and equipment traffic would impact new surface treatments. 10 weight limit.
- Clarks Chapel Road – 1.18 miles in length with approximately 18 homes and driveways. Two large culverts. Shard corner and two steep hills. Narrow asphalt road with 10 ton weight limit. Large culverts and road would be severely impacted by heavy truck and equipment traffic.

- Slivko Road – 0.64 miles in length with approximately 6 homes and driveways. Dirt road with spring and winter mud conditions. Steep hill and narrow. Heavy truck and equipment would severely impact road.

Town of Schodack, New York
Key: Road, Ownership, Surface Type – Condition Rating (1-5) 5 Best, Bridges - Rating, Culverts – 36”>, Culverts < 36“ Number and Condition Too Many to Quantify (TMQ)

- Staats Island Road – Town; Gravel - 4, None, 1 location w/2-60”, 1 location w/1-48”, TMQ.
- Jensis Road – Town, Pavement – 3, None, None, TMQ.
- Brookview Station Road – Town, Pavement – 3, NYS Bin #2202010 – 3.73, None, TMQ.
- South Old Post Road – Town, Pavement – 3, NYS Bin #2202070 – 5.94, None, TMQ.
- Shufelt Road – Town, Pavement – 3, None, 1 location w/1-72”, TMQ.
- Lape Road – Town, Pavement – 5 (resurfacing this year), None, 1 location w/3-36”, TMQ.
- Rohloff Road – Town, Pavement – 2, None, None, TMQ.
- Poyneer Road – Town, Pavement – 3, None, 1 location w/1- 42”, 1 location w/1-36”, TMQ.
- Rice Road – Town, Pavement – 2, None, None, TMQ.
- Hoags Corners Road – Town, Pavement – 2, None, 1 location w/1-48”, TMQ.
- Boyce Road – Town, Pavement – 3, None, 1 location w/1-48”, 1 location w/1-36”, TMQ.
- North Schodack Road – Town, Pavement – 5 (repaving this year), 1-6’ box culvert, None, TMQ.
- Beaver Road – Town, Pavement – 2, None, None, TMQ.
- Mid-State Lane – Town, Pavement – 4, None, None, TMQ.
- Vista Way – Private Road.
- Stoney Point Road – County Road.

State and Federally Numbered Highways

The following state and federally numbered highways, all under the ownership and jurisdiction of MassDOT, are crossed by the pipeline route in Berkshire County, Massachusetts:

- State Route 43 (Town of Hancock)
- US Route 7 (Town of Lanesborough)
- State Route 8 (Town of Cheshire)
- State Route 9 (Town of Dalton)
- State Route 9 (Town of Windsor)

The following State and Federally numbered highways, under the jurisdiction of NYSDOT, are crossed by the pipeline route in Rensselaer County, New York:

- State Route 22 (Town of Stephentown)
- State Route 43 (Towns of Stephentown and Nassau)
- State Route 66 (Town of Nassau)
- State Route 150-East Schodack Road (Town of Schodack)
- US Route 20 (Town of Schodack)
- US Route 9 (Town of Schodack)
- I-90 (Town of Schodack)
- State Route 150-Brookview Road (Town of Schodack)
- State Route 9J –River Road (Town of Schodack)

TOWN OF NASSAU
ZONING LAW

Local Law No. 2 of 2011

Adopted by the Nassau Town Board
September 8, 2011

ZONING LAW OF TOWN OF NASSAU
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one hundred (100) feet of the mean high water mark of any watercourse.

SECTION 5.7 Driveway Standards
Prior to construction or reconstruction of any driveway or the installation of a driveway culvert, the property owner(s) must obtain an approved Driveway Construction Permit from the Town of Nassau Building Department that has also been approved by the Town of Nassau Superintendent of Highways. The landowner(s) must sign all permit applications, and a legible sketch must accompany all applications. All new driveways must comply with the standards set forth in this section as well as any additional requirements that may be imposed by the Superintendent of Highways, Building Department or any Town board and shall not be constructed until approved by the Town of Nassau as set forth herein.

The Code Enforcement Officer, in consultation with the Superintendent of Highways, will also determine if driveway construction appropriately conforms to the application specifications.

5.7-1 Driveway Grades
Driveway grades shall conform to the surrounding terrain but shall not, in any case, exceed 8% or more than 3% within 50 feet of any intersection. In the event that the layout of the proposed driveway is determined by the Code Enforcement Officer, Superintendent of Highways or any Town board, to require approval by the local fire department to ensure sufficient access to emergency vehicles, such approval shall be secured in writing, by the applicant and shall be provided as part of a completed application for a driveway permit.

5.7-2 Intersections
Blind intersections and jogs must be avoided. Driveways must intersect existing roads as close as possible to a 90 degree angle. All intersections must not have a finished surface higher than the connecting road. Driveway run off shall drain into ditch lines or other appropriate drainage, never onto an intersecting roadway.

5.7-3 Culvert Specifications and Installation
Culverts under driveways shall be of such size in diameter and length as is appropriate to carry anticipate storm water through the drainage way. Generally such driveway culvert should be a minimum of 15 inches in diameter and covered with at least as much fill as their diameters.

For the purpose of ensuring that Town drainage ways are functioning and maintained properly, the Town of Nassau Highway Department shall install all driveway culverts in Town right-of-ways for driveways that intersect with Town roads. Under no circumstances shall property owners, their contractors or agents install any driveway culverts or perform any work in the Town right-of-way unless specifically authorized by the Town.

5.7-4 Responsibility for Cost of Material and Installation
Whenever a driveway culvert needs to be replaced as part of the maintenance or reconstruction of a Town Road, right-of-way or drainage way, the Town shall be responsible for the cost of the culvert, other materials and installation up to 20 feet in width. Any driveway that requires a culvert of more than 20 feet in width, the property owner shall be responsible for reimbursing the Town for the cost of materials in excess of that incurred for 20 feet.

Whenever a driveway culvert needs to be replaced due to said culvert being corroded or damaged, the Town shall be responsible for the cost of removing, replacing and installing a new culvert up to 20 feet in width. The property owner shall be responsible for reimbursing the Town for the cost of materials in excess of that incurred for 20 feet or for the entire installation where the culvert

was damaged from overloading or misuse.

Whenever a driveway culvert needs to be installed due to the installation of a new driveway or extension of an existing driveway, the Town shall be responsible for the cost of installing the new culvert and the property owner shall be responsible for reimbursing the Town for the cost of the culvert and materials in excess of 20 feet in width.

5.7-5 Determinations

In all cases, determinations as to diameter sizing of culverts, specifications and materials for culverts, the need for a new culvert, and assessment of damage/costs shall be made by the Town of Nassau Superintendent of Highways.

5.7-6 Appeals

The appeal of any determination or decision with respect to driveway construction permits or driveway culvert installation and related charges may be made to the Town Board of the Town of Nassau within 62 days from the date that the property owner was notified of said decision or determination. The appeal of any determination or decision with respect to driveway standards or specifications set forth in sections 5.7-1 and 5.7-2 above may be made to the Zoning Board of Appeals of the Town of Nassau pursuant to Article 10 of this Law within 62 days from the date that the property owner was notified of said decision or determination.

SECTION 5.8 FENCES AND WALLS, REQUIRED SCREENING

5.8-1 The setback requirements of this Zoning Law shall not apply to retaining walls or to fences less than or equal to six (6) feet high in any side or rear yard, except where corner clearances are required for traffic safety, and shall not exceed four (4) feet in height in any front yard unless required for screening of non-residential uses.

5.8-2 The setback requirements of this Zoning Law shall not apply to any front yard fences or walls less than four (4) feet high, except that customary agricultural wire, board, or split rail fencing which does not obstruct visibility may be higher.

5.8-3 Any fence or wall in excess of the heights specified in this section shall require site plan approval by the Planning Board prior to being constructed or placed on the property.

5.8-4 A non-residential use shall provide sufficient fencing, screening or landscaping, maintained in good order, to obscure objectionable aspects of such use from view from adjoining residential properties and from the public right-of-way in a manner acceptable to the Town Planning Board.

SECTION 5.9 CLEARCUTTING

To promote native vegetation, reduce erosion, sedimentation, storm water runoff, the depletion of soil fertility and topsoil, and to encourage the maintenance of forest canopy in the town, clearcutting as defined in Article 12 is strictly prohibited either as a forestry use or in connection with any other use unless it is authorized as part of a site plan approval by the Town Planning Board. The sole exception to this prohibition is the clearing of fields to be used for agricultural purposes pursuant to accepted agricultural practices as defined by the State Department of Agriculture and Markets provided that the area to be clearcut is no more than one-half (1/2) acre. Clearcutting for agriculture purposes of an area greater than one-half (1/2) acre shall require a zoning permit and site plan approval shall be required for an area more than ten (10) acres.

BERKSHIRE REGIONAL PLANNING COMMISSION
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Executive Director

March 30, 2015

Eileen Banach
Scientist
AECOM Environment
AECOM
10 Orms Street
Providence, RI 02904

RE: Northeast Energy Direct Project, FERC Docket No. PF14-22
Tennessee Gas Pipeline Company, L.L.C.
Berkshire Counties, Massachusetts

Dear Ms. Banach,

In response to your request for the Berkshire Regional Planning Commissions to review the proposed Northeast Energy Direct project of Tennessee Gas Pipeline in Berkshire County, Massachusetts, we are providing the following information with the following limitation:

> BRPC did not conduct any field work for this request, therefore all of our responses are based on the best publicly available data we have access to (mostly from MassGIS). AECOM or another consultant for Kinder Morgan will need to verify all of the information provided as well as look for additional items that BRPC may be unaware of. BRPC makes no claim that the below is completely accurate and data may be missing from the following lists.

Environmental Protection Agency, State, or Municipal designated aquifers (1/4 mile):

http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/aquifers-.html

There are two aquifers that are within ¼ mile of the proposed pipeline in Berkshire County. One crosses the pipeline between mile posts 5.9 and 6.1 in the Town of Lanesborough. The other does not cross the proposed pipeline, but is directly north of mileposts 7.7 and 7.8 in Cheshire and Lanesborough.

State or municipal designated aquifer protection areas (1/4 mile):

http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/pws.html and http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/dep-wellhead-protection-areas-zone-ii-iwpa.html

There is a public well and interim wellhead protection area between milepost .6 and .7 in Hancock at 20 Taylor Road (Source ID 1121014-01G). AECOM/Kinder Morgan should consult with the Massachusetts Department of Environmental Protection and the well owner on this area.

There is a state and municipal designated aquifer protection area (DEP Zone 2) between milepost 5.9 and 6.1 (Source ID 1148000-01G). AECOM/Kinder Morgan should consult with the Lanesborough Fire and Water District and the Massachusetts Department of Environmental Protection on this area. The well for this area is between milepost 5.9 and 6.0. There is also a water storage tank for this water supply at mile post 6.7. The proposed pipeline also crosses water distribution lines at mileposts __ and ___.

There is a public well and interim wellhead protection area between milepost 8 and 8.1 in Cheshire. The well is at 25 Ingalls Crossing and serves Whitney's Farm Market (Source ID 1058011-01G). AECOM/Kinder Morgan should consult with the Massachusetts Department of Environmental Protection and the well owner on this area.

There is an Interim Wellhead Protection Area at milepost 12.2 in Dalton serving a closed garden and nursery business (Source ID 1070003-01G). AECOM/Kinder Morgan should consult with the Massachusetts Department of Environmental Protection and the well owner on this area.

There is an Interim Wellhead Protection Area at milepost 12.3 in Dalton (Source ID 1070000-01G). AECOM/Kinder Morgan should consult with the Dalton Fire Water District and the Massachusetts Department of Environmental Protection on this area.

Surface waters that provide public drinking water supplies (1/4 mile):

http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/swp.html

Egypt Brook Reservoir at milepost 11.3 is an emergency water supply for the town of Dalton (Source ID 1070000-02S). AECOM/Kinder Morgan should consult with the Dalton Fire and Water District and the Massachusetts Department of Environmental Protection on this area.

Cleveland Reservoir is directly south of the proposed pipeline and partially within the ¼ mile buffer. The reservoir is the located south of mileposts 13.6 and 14.1 9Source ID 1236000-06S). This

reservoir is the main water supply for the City of Pittsfield and the Town of Dalton. At milepost 15.1, the proposed pipeline crosses Cady Brook, which is one of two streams (the other being Windsor Brook) that supply the majority of the water to Cleveland Reservoir via an aqueduct that is crossed between milepost 13.6 and 13.7. The City of Pittsfield Department of Public Utilities and the Dalton Fire and Water District as well as the Massachusetts Department of Environmental Protection should be consulted on these areas.

State or municipal designated surface water protection areas (1/4 mile):

http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/swp.html

Between mile post 14.4 and 16.8, the proposed pipeline crosses a surface water protection zone C (Source ID 1236000-06S), which protects the watershed for Cady Brook. From mile post 15.1 to 15.2, the proposed pipeline crosses a Surface Water Supply Zone A, which protects Cady Brook.

South of mile post 13.5 to 14.1 there is a surface water protection zone A (Source ID 1236000-06S) protecting Cleveland Reservoir. South of mile post 14.1 to 14.4 is a surface water protection zone B, which protects a portion of the Cleveland Reservoir watershed.

The City of Pittsfield Department of Public Utilities and the Dalton Fire and Water District as well as the Massachusetts Department of Environmental Protection should be consulted on these areas.

Any known existing or proposed public or private drinking water wells, reservoirs, or springs (300 ft):

The location of houses and their potential for having a private well was reviewed. The local boards of health as well as the owners should be consulted on the location with consultation from the Massachusetts Department of Environmental Protection.

There is a private well around mile post 1.8 in Hancock at 107 Potter Mountain Road.

There is a private well at mile post 4.3 in Lanesborough at 119 Old Orebed Road.

There is a private well at mile post 7.9 in Cheshire at 37 Nobody's Road.

There is a private well north of mile post 8.35 in Cheshire at 222 Brough Road.

There is a private well at milepost 8.4 in Cheshire at 255 Brough Road.

There is a private well at milepost 12 in Dalton at 90 Chalet Road.

There is a private well at milepost 12.3 in Dalton at 1188 North Street.

There is a private well at milepost 13.1 in Hinsdale at 173 Adams Road.

There is a private well at milepost 13.15 in Hinsdale at 141 Adams Road.

There is a private well at milepost 13.2 in Hinsdale at 121 Adams Road.

There is a private well at milepost 13.55 in Hinsdale at 240 Old Windsor Road.

There is a private well at milepost 20.2 in Windsor at 790 Shaw Road.

There is a private well at milepost 20.85 in Windsor at 471 River Road.

Open space/natural areas (1/4 mile):

The following open space and natural areas were determined by reviewing MassGIS – Protected and Recreational Open Space data layer as well as parcel information from the local assessors. http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/osp.html

Pittsfield State Forest crosses the proposed pipeline from milepost 2.1 to 2.6 in Hancock, 2.6 to 3.6 in Lanesborough and 3.9 to 4.1 in Lanesborough.

Constitution Hill, a property owned by the Berkshire Natural Resource Council is crossed by the proposed pipeline from mile marker 4.9 to 6.

Laston Park, owned by the Town of Lanesborough, is north of milepost 5.8 to 6.1.

The Town of Lanesborough owns a natural area south of the pipeline from 6.1 to 6.3.

Fletcher Farm, owned by Berkshire Natural Resource Council, is north of the proposed route from milepost 6.8 to 7.7 in Lanesborough.

Mountain View Farms in Lanesborough, which has an APR from the Massachusetts Department of Agricultural Resources runs from milepost 6.7 to 7.

Windy Ridge Farm in Lanesborough, which has an APR from the Massachusetts Department of Agricultural Resources runs from milepost 7 to 7.6.

Chalet Wildlife Management Area crosses the proposed pipeline from milepost 8.9 to 9.5 in Cheshire and 10.0-10.7 and 11.1-11.2 in Dalton.

The Appalachian Trail Corridor is crossed by the proposed pipeline from milepost 9.5 to 10. in Dalton.

The Town of Dalton owns undeveloped land from 10.7 to 11.1.

Holiday Farm is protected through APRs with the Berkshire Natural Resource Council and Massachusetts Department of Agricultural Resources from 11.2-12.2

The Bardin Property in Dalton, which has an APR from the Massachusetts Department of Agricultural Resources runs from milepost 12.1 to 12.4.

The Musante property in Dalton, which has an APR from the Massachusetts Department of Agricultural Resources, runs from milepost 12.5 to 13.0.

Wahconah Falls State Park, in Dalton and Hinsdale, runs from milepost 12.4 to 12.8

The Dalton Watershed runs from milepost 12.7 to 13 and from 14 to 15.9 in Hinsdale and from 15.9 to 16.6 in Peru. The Massachusetts Department of Fish and Game holds a conservation restriction on this property.

The Pittsfield Watershed runs from milepost 13.6 to 14.4 in Hinsdale.

The Peru Wildlife Management Area, owned by the Massachusetts Department of Fish and Game, runs from milepost 16.6 in Peru to 17.5 in Windsor and from 17.7 to 18.4 in Windsor.

Nocthview Reservation, owned by the Trustees of Reservations, is located from milepost 19.1 to 19.8 in Windsor.

The Smithers property in Windsor runs from milepost 19.7 to 20 and has a conservation restriction on it from the Trustees of Reservations.

The Westfield River Access owned by the Department of Fish and Game runs from milepost 20.9 to 21.5 in Windsor.

Locally significant roads, scenic areas, or rivers (1/4 mile):

Locally Significant Roads: There are no known scenic roads that are within ¼ mile of the proposed pipeline, however AECOM and Kinder Morgan should consult with the local communities.

Scenic Areas: There are no known scenic areas that are within ¼ mile of the proposed pipeline, however AECOM and Kinder Morgan should consult with the local communities.

There are a number of cold water fisheries that are significant. http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/dfwcfr.html They include Kinderhook Creek at milepost 0.6 in Hancock, Hollow Brook at MP 3.7, Secum Brook at MP 4.7 and Town Brook at MP 5.9 in Lanesborough, the Hoosic River (Cheshire Reservoir) at MP 7.7 and Gore Brook between MP 8.1 and 8.8 in Cheshire, Wahconah Falls Brook and Weston Brook at MP 12.4 in Dalton, Cleveland Brook at MP 13.3 to 13.5 and Cady Brook at MP 15.1 in Hinsdale, the Westfield Brook from MP 18.6 to 19..8, Shaw Brook at MP 19.8 and the Westfield River at MP 20.9 in Windsor.

The Westfield River has also been designated as a Wild & Scenic River. The National Park Service and the Massachusetts Executive Office of Energy6 and Environmental Affairs Division of Ecological Restoration should be consulted on this area.

Schools, parks, ballfields, trails (1/4 mile):

There are no schools within ¼ mile of the proposed pipeline.

Laston Park in Lanesborough is located north of the proposed pipeline between milepost 5.8 and 6.1. Lanton Park has ballfields within it. The Town of Lanesborough should be consulted on this.

Trail data was taken from several sources, including The Trustees of Reservation, Berkshire Natural Resource Council and MassGIS(DCR trails) http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/dcrtrails.html

The Taconic Crest Trail is in Hancock around milepost 2.3. Pittsfield State Forest and the Department of Conservation and Recreation should be consulted on this.

The Taconic Skyline Trail is in Lanesborough between milepost 2.7 and 2.8. Pittsfield State Forest and the Department of Conservation and Recreation should be consulted on this.

Potter Mountain Trail is in Lanesborough between milepost 2.8 and 4.0. Pittsfield State Forest and the Department of Conservation and Recreation should be consulted on this.

The Constitution Hill Trail is in Lanesborough between milepost 5.1 and 5.5. The Berkshire Natural Resource Council should be consulted on this.

The Appalachian Trail is in Dalton between milepost 9.5 and 9.7. The National Park Service, the Appalachian Trail Conference, the Massachusetts Department of Conservation and Recreation should be consulted on this.

Planned residential subdivision developments (1/2 mile): There are no known planned residential subdivision developments that are within 1/2 mile of the proposed pipeline, however AECOM and Kinder Morgan should consult with the local communities.

Planned commercial or industrial developments (1/2 mile): There are no known planned commercial or industrial developments that are within 1/2 mile of the proposed pipeline, however AECOM and Kinder Morgan should consult with the local communities.

Additional Information

Endangered Species (1/4 mile):

There is endangered species habitat between milepost 12.3 and 12.6 in Dalton, 13.3 and 13.5 in Hinsdale, 16.1 and 16.6 in Peru and 18.5 to 19.8 and 20.9 to 21.0 in Windsor. The Massachusetts Natural Heritage and Endangered Species Program should be consulted on these areas. http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/prihab.html and http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/nhesp-estimated-habitats-of-rare-wildlife-.html

Historic Properties (1/4 mile):

There are no national historic register properties within ¼ mile of the proposed pipeline, however there are several state properties, including 248 North Main Street and 178 North Main Street in Lanesborough at MP 6.1, 95 Old Cheshire Road at MP 7.1 in Lanesborough, and 1097-1099 North Street in Dalton at MP 12.2. The Massachusetts Historic Commission and the local town's historic commissions should be consulted on these properties. http://mhc-macris.net/

BioMap (1/4 mile):

The Massachusetts Natural Heritage and Endangered Species Program and the Nature Conservancy has developed the BioMap2 program to protect the state's biodiversity. http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/biomap2.html

The program has identified several areas of Core Habitat within the proposed pipeline1/4 mile buffer. These areas are located from MP 0.5 to 0.8 along Kinderhook Creek and 0.8 to 2.6 around Pittsfield State Forest in Hancock, 2.6 to 3.0 around Pittsfield State Forest and 4.2 to 4.4 in Lanesborough, MP 8.4 to 9.5 in Cheshire around the Chalet Wildlife Management Area, MP 9.5 to 11.6 around the Chalet Wildlife Management Area and the Appalachian Trail Corridor, from MP 12.3 to 12.7 around Wahconah Brook in Dalton, MP 15.3 to 15.9 in Hinsdale around the Peru Wildlife Management Area, MP 15.9 to 16.8 around the Peru Wildlife Management Area in Peru, MP 16.9 to 17.3 around the Peru Wildlife Management Area in Windsor, MP 18.9 to 19.8 around the Westfield Brook in Windsor and 20.9 to 21.1 around the Westfield River in Windsor. The Natural Heritage and Endangered Species Program should be consulted on these sites.

Streams (crossings):

Streams crossing the proposed pipeline are located at the following mileposts based on MassDEP Wetlands GIS layer http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/depwetlands112000.html:

Hancock: 0.3(2 crossings), 0.6, 1.9, 2.0(3 crossings), 2.2, 2.3, 2.4

Lanesborough: 3, 3.4, 3.75, 4.45, 4.6, 4.7, 5.1, 5.9, 6.05, 7.6

Cheshire: 7.6-7.85(Cheshire Reservoir), 8.35, 9.3

Dalton: 9.6, 9.8, 9.9, 10.1, 10.9, 11.1, 11.3, 11.4, 11.5, 11.9 (2 crossings), 12.3, 12.4 (2 crossings), 12.5 (2 crossings)

Hinsdale: 13.4 (2 crossings), 13.6, 13.7, 14.45, 14.8, 14.9, 15.1 (2 crossings), 15.2-15.3, 15.4, 15.6

Peru: 16, 16.2, 16.4

Windsor: 17, 17.1, 17.3, 17.9, 18.1, 18.4, 18.6, 18.7, 19.3, 19.8, 20.9, 21, 21.3

Wetlands (1/4 mile):

Wetlands are located within ¼ mile of the proposed at the following mileposts based on MassDEP Wetlands GIS layer http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/depwetlands112000.html:

Hancock: 0.2, 0.4, 0.5, 0.6, 0.7,1, 1.4, 1.6, 1.8, 1.9

Lanesborough: 2.8, 3.75, 4.3, 4.4, 4.5, 4.6, 4.7, 5.1, 5.3, 5.8, 5.9, 6.0, 6.3, 6.4, 6.9, 7.2

Cheshire: 7.6-7.9 (Cheshire Reservoir), 8.0, 8.1, 8.4, 9.3, 9.4, 9.5

Dalton: 9.6, 9.7, 9.8, 9.9, 10, 10.2, 10.3, 10.4, 10.6, 10.9, 11.1, 11.2, 11.6, 12.0, 12.1, 12.2, 12.3, 12.4, 12.5, 12.6, 13

Hinsdale: 12.9, 13, 13.3, 13.4, 13.5, 13.6, 13.7, 13.8, 13.9, 14, 14.1, 14.2, 14.3, 14.4, 14.5, 14.6, 14.7, 14.8, 14.9, 15, 15.1, 15.2, 15.3, 15.4, 15.6, 15.7

Peru: 16, 16.1, 16.2, 16.3, 16.4, 16.5, 16.7

Windsor: 16.7, 16.8, 17, 17.1, 17.2, 17.3, 17.4, 17.5, 17.8, 18, 18.1, 18.2, 18.6, 18.7, 18.9, 19, 19.1, 19.3, 19.4, 20.9, 21, 21.3, 21.6

ACEC (1/4 mile):

The Hinsdale Flats Area of Critical Environmental Concern abuts the proposed pipeline from milepost 14.7 to 15.9. The Executive Office of Energy and Environmental Affairs should be consulted on this area.

http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/acecs.html

As part of this review, the BRPC reached out to the Towns of Hancock, Lanesborough, Cheshire, Dalton, Hinsdale, Peru and Windsor to determine if they have any concerns over this project. BRPC would encourage AECOM and Tennessee Gas to reach out to the towns to aid in their understanding of what is proposed and to alleviate any concerns they may have. BRPC also strongly encourages AECOM or another Kinder Morgan consultant to reach out to all parties listed above who are or may be impacted by the proposed pipeline.

Sincerely,

Nathaniel W. Karns, AICP
Executive Director

BERKSHIRE REGIONAL PLANNING COMMISSION
1 FENN STREET, SUITE 201, PITTSFIELD, MASSACHUSETTS 01201
TELEPHONE (413) 442-1521 · FAX (413) 442-1523
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NATHANIEL W. KARNS, A.I.C.P.
Executive Director

April 2, 2015

Eileen Banach
Scientist
AECOM Environment
AECOM
10 Orms Street
Providence, RI 02904

RE: Northeast Energy Direct Project, FERC Docket No. PF14-22
Tennessee Gas Pipeline Company, L.L.C.
Berkshire Counties, Massachusetts

Dear Ms. Banach,

The Berkshire Regional Planning Commission has been informed by the Dalton Water and Fire District that an error is in the data and maps sent to you by BRPC on March 30, 2015. Additional water supply protection areas covering Dalton's backup reservoirs are listed below and shown on the attached maps. We are providing the following information with the following limitation:

> BRPC did not conduct any field work for this request, therefore all of our responses are based on the best publicly available data we have access to (mostly from MassGIS). AECOM or another consultant for Kinder Morgan will need to verify all of the information provided as well as look for additional items that BRPC may be unaware of. BRPC makes no claim that the below is completely accurate and data may be missing from the following lists.

State or municipal designated surface water protection areas (1/4 mile):

http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/swp.html

Between mile post 9.75 and 11.3 in Dalton are the surface water supply zones for the Anthony Brook Reservoir (1070000-01S) and the Egypt Brook Reservoir (1070000-02S). The Massachusetts DEP and the Dalton Fire & Water District should be consulted on this area.

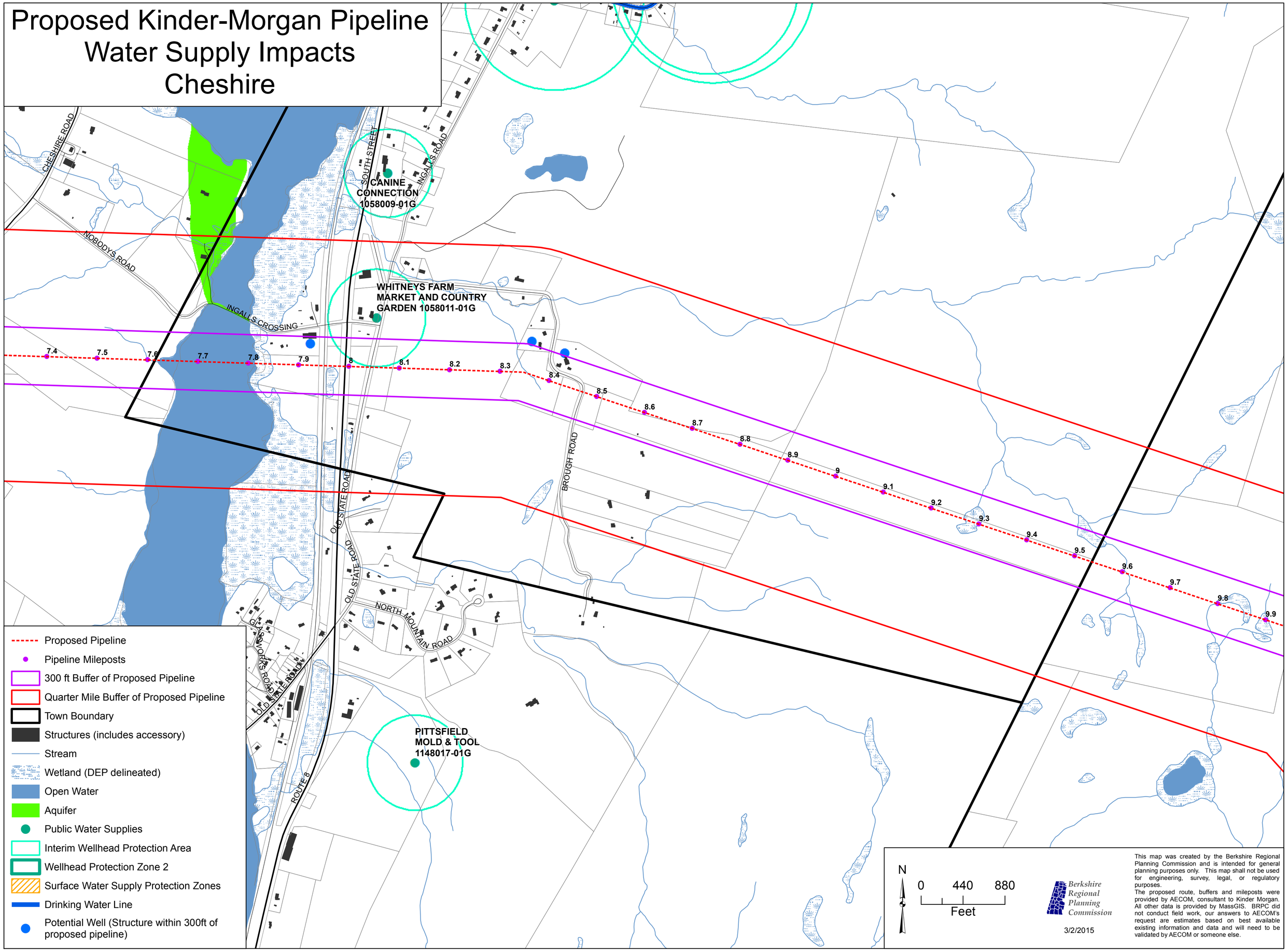
Between mile post 12.8 and 13.1 in Hinsdale are the surface water supply zones for the Windsor Reservoir (1070000-03S). The Massachusetts DEP and the Dalton Fire & Water District should be consulted on this area.

BRPC would encourage AECOM and Tennessee Gas to reach out to the towns to aid in their understanding of what is proposed and to alleviate any concerns they may have. BRPC also strongly encourages AECOM or another Kinder Morgan consultant to reach out to all parties listed above who are or may be impacted by the proposed pipeline.

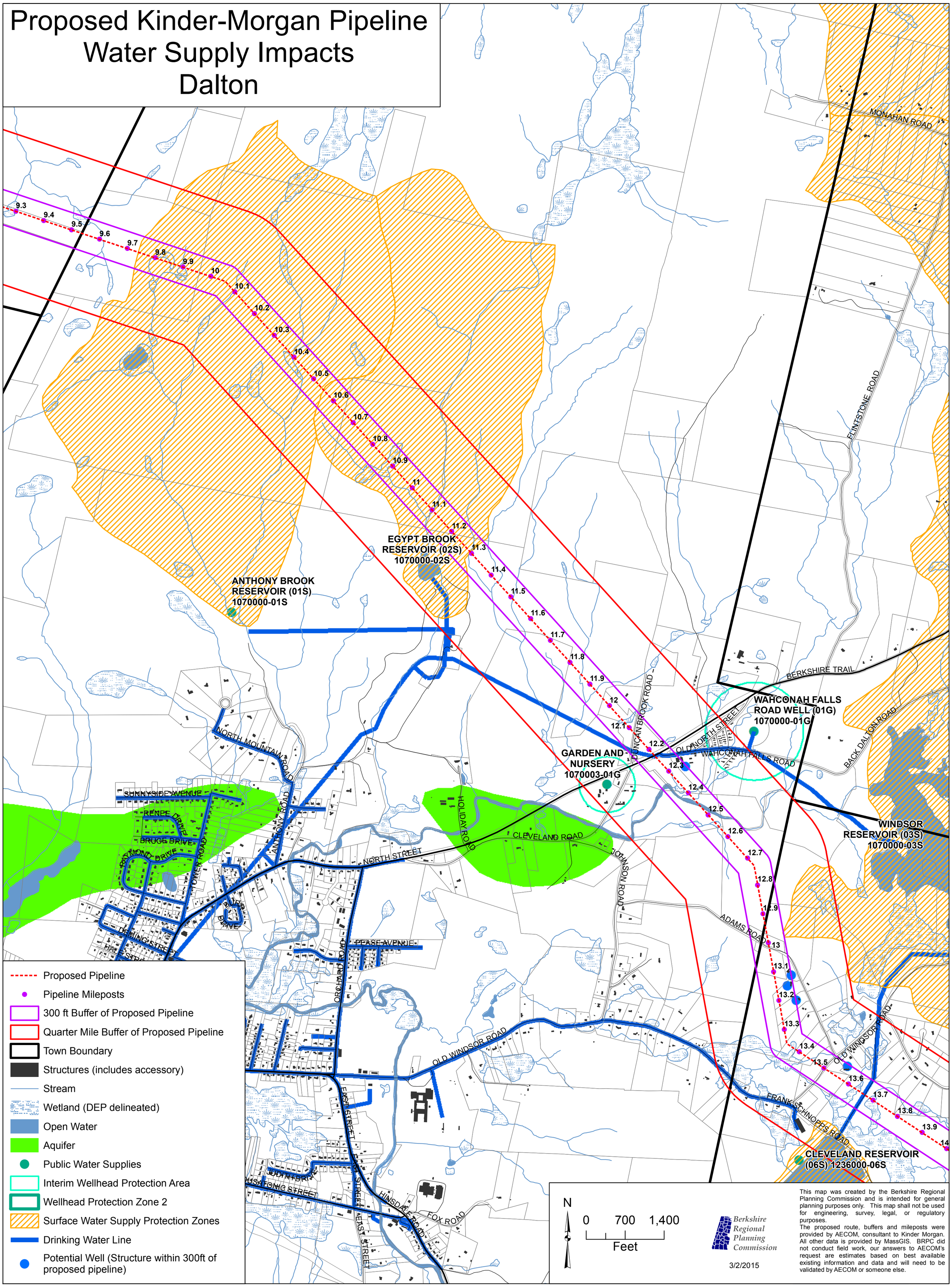
Sincerely,

Mark Maloy
GIS, Data & IT Manager

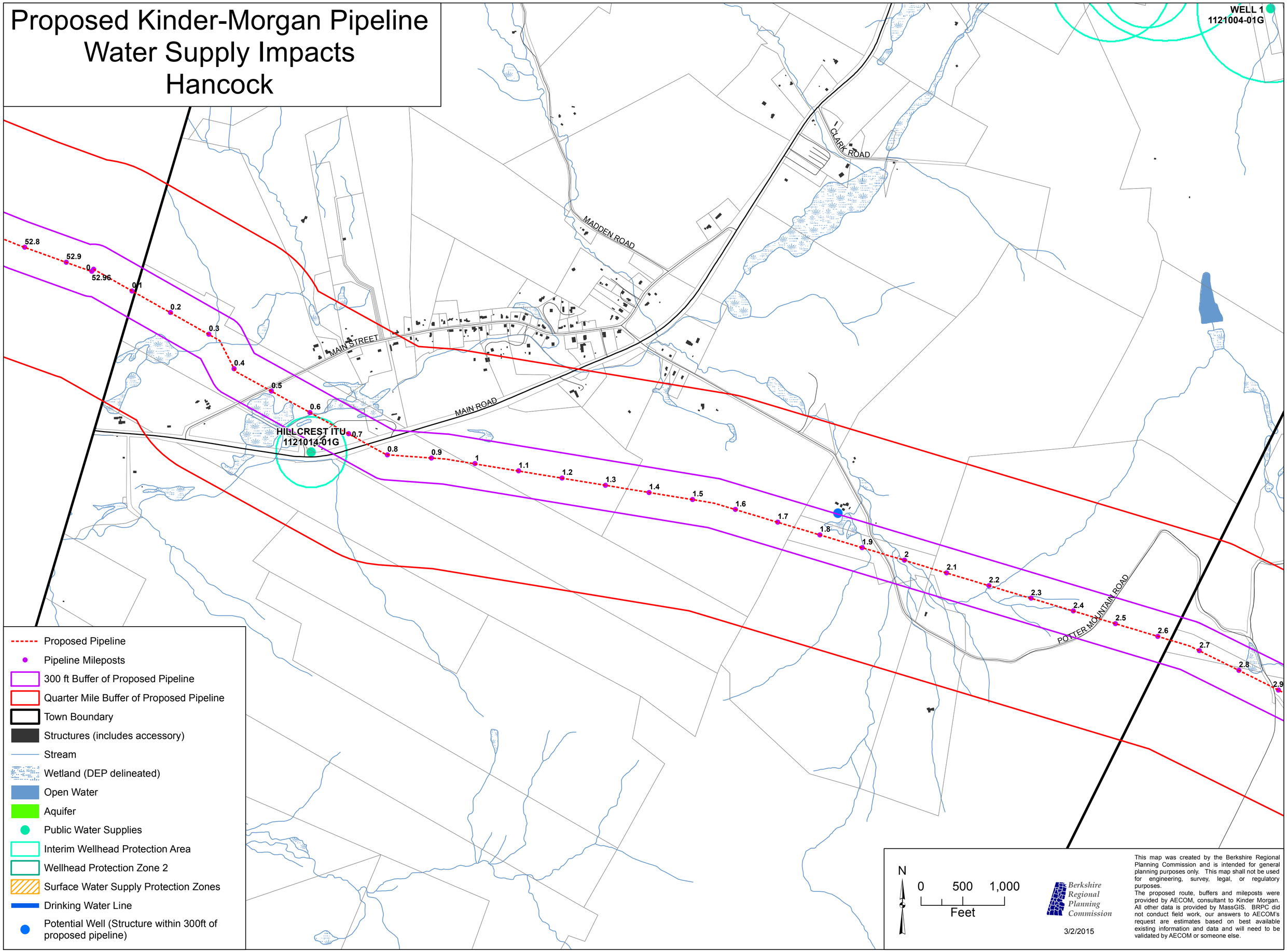
Proposed Kinder-Morgan Pipeline
Water Supply Impacts
Cheshire



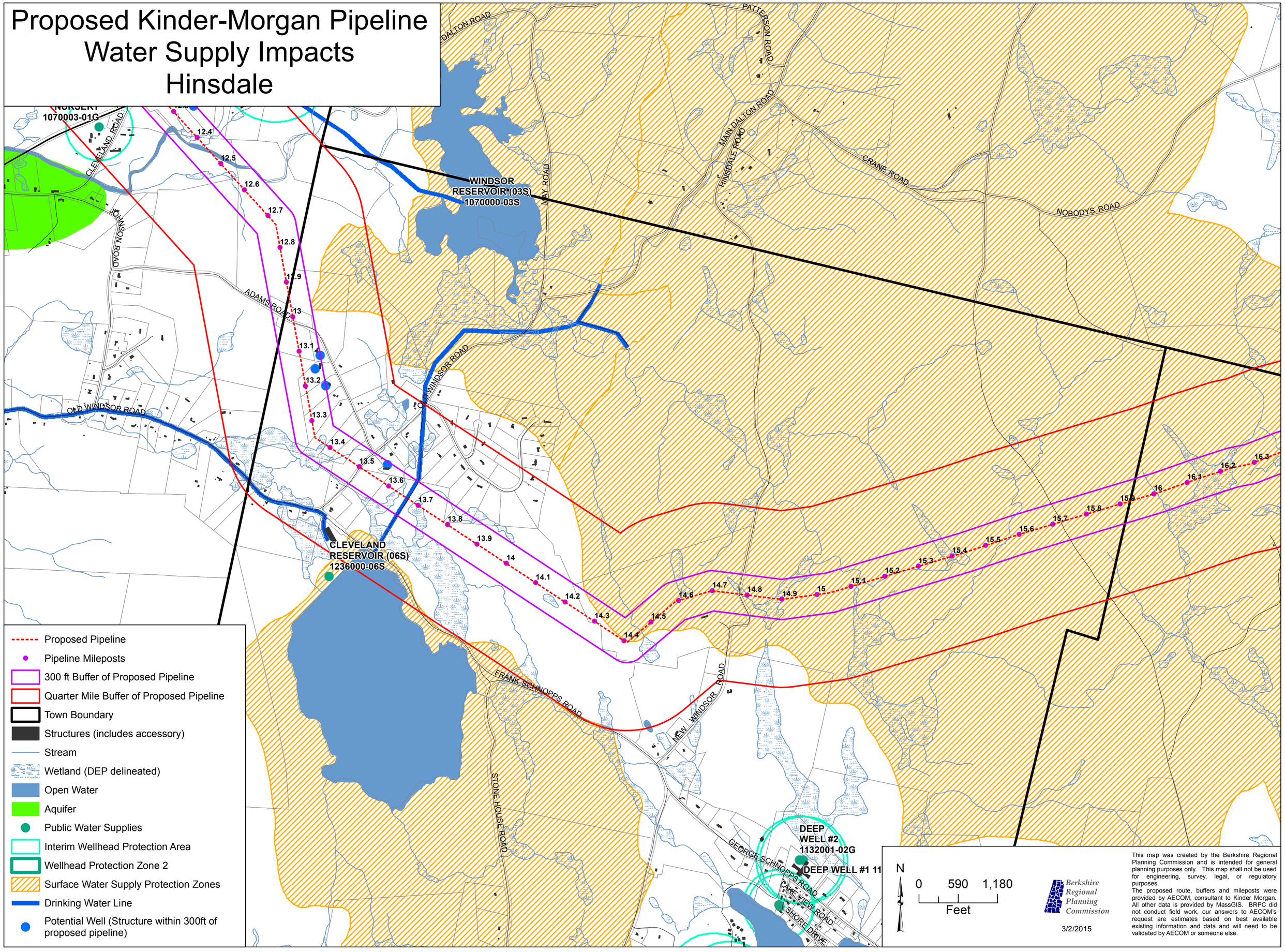
Proposed Kinder-Morgan Pipeline
Water Supply Impacts
Dalton



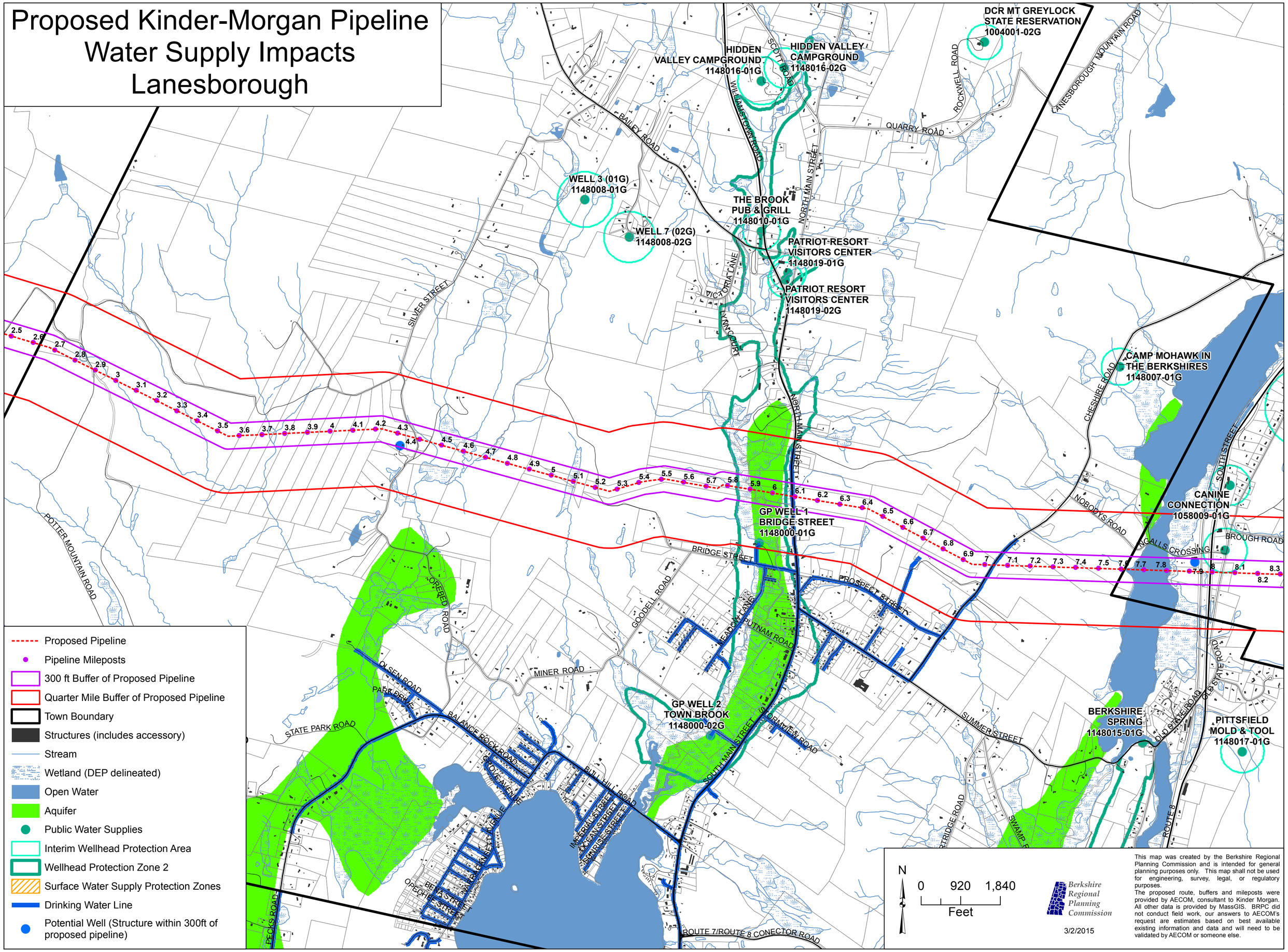
Proposed Kinder-Morgan Pipeline
Water Supply Impacts
Hancock



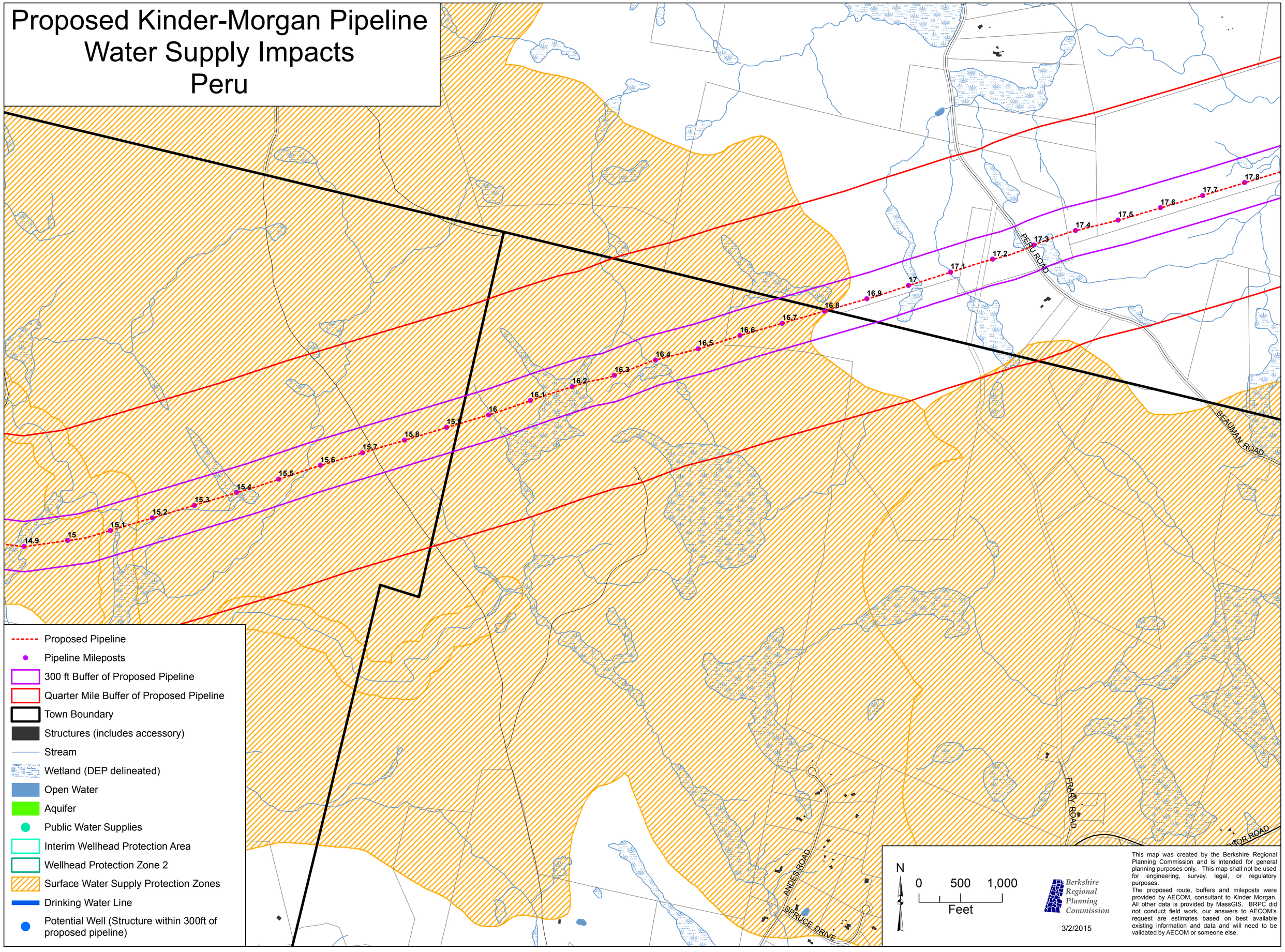
Proposed Kinder-Morgan Pipeline
Water Supply Impacts
Hinsdale



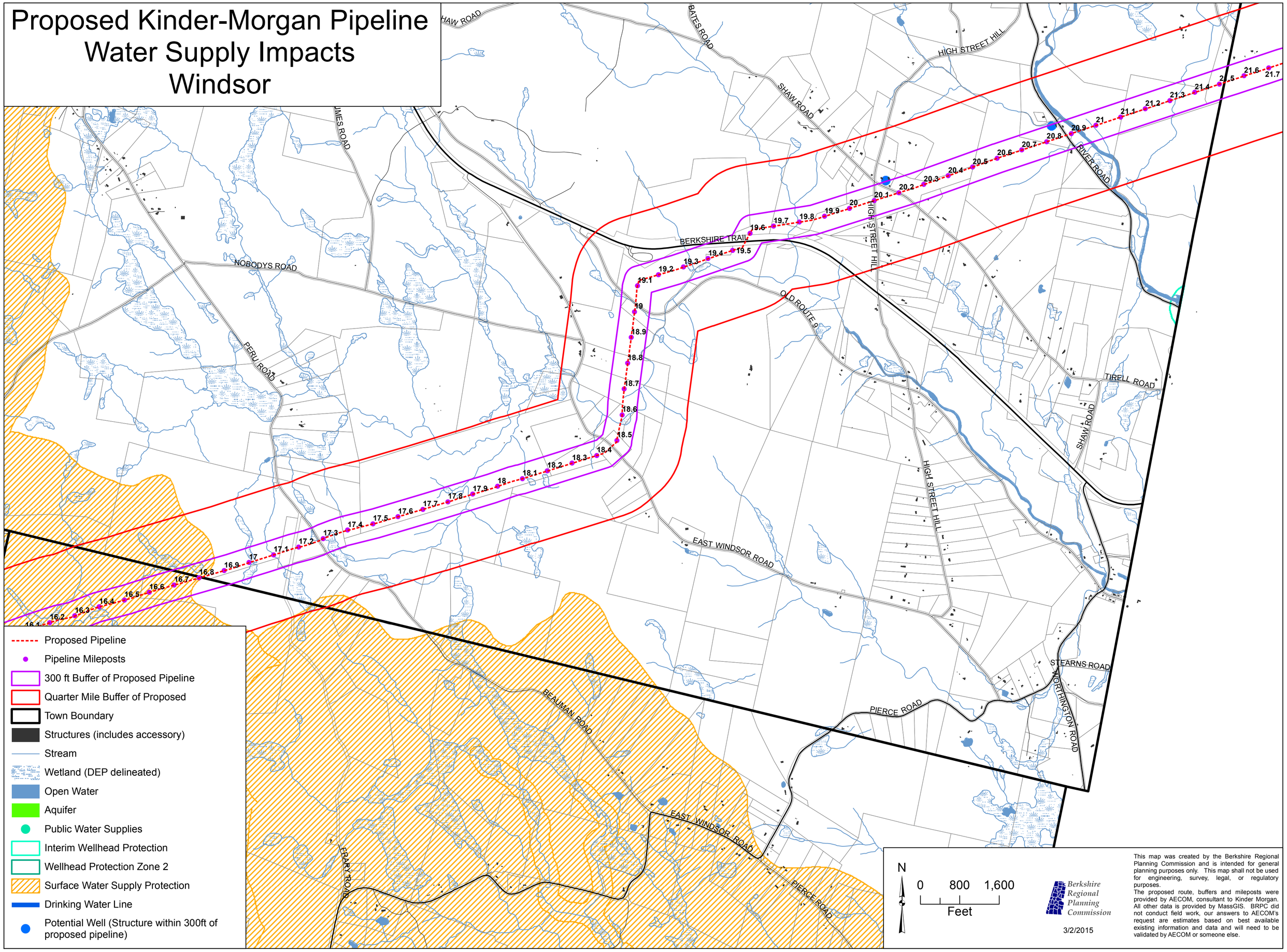
Proposed Kinder-Morgan Pipeline
Water Supply Impacts
Lanesborough



Proposed Kinder-Morgan Pipeline
Water Supply Impacts
Peru

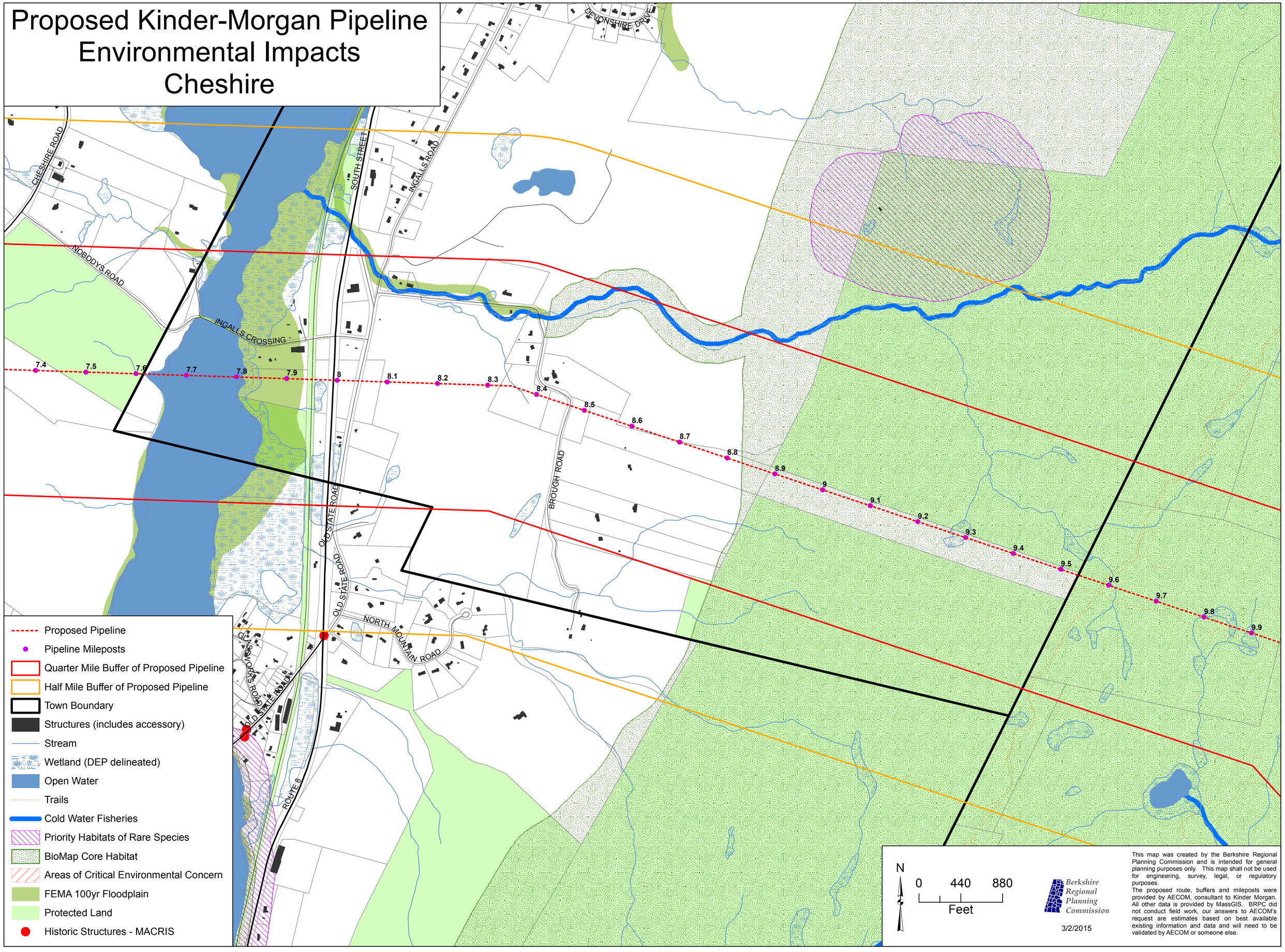


Proposed Kinder-Morgan Pipeline
Water Supply Impacts
Windsor



This map was created by the Berkshire Regional Planning Commission and is intended for general planning purposes only. This map shall not be used for engineering, survey, legal, or regulatory purposes.
The proposed route, buffers and mileposts were provided by AECOM, consultant to Kinder Morgan. All other data is provided by MassGIS. BRPC did not conduct field work, our answers to AECOM's request are estimates based on best available existing information and data and will need to be validated by AECOM or someone else.

Proposed Kinder-Morgan Pipeline
Environmental Impacts
Cheshire



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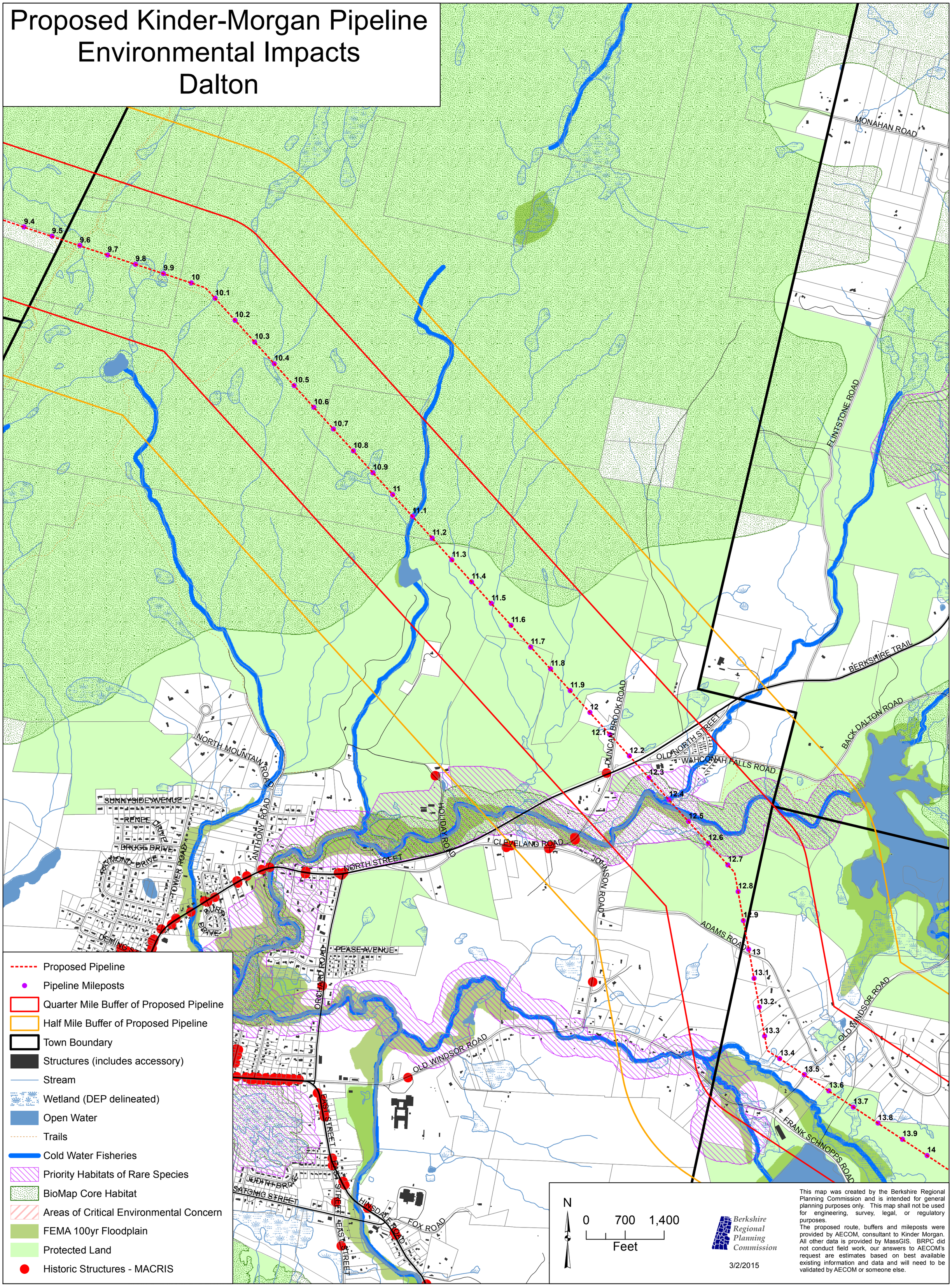
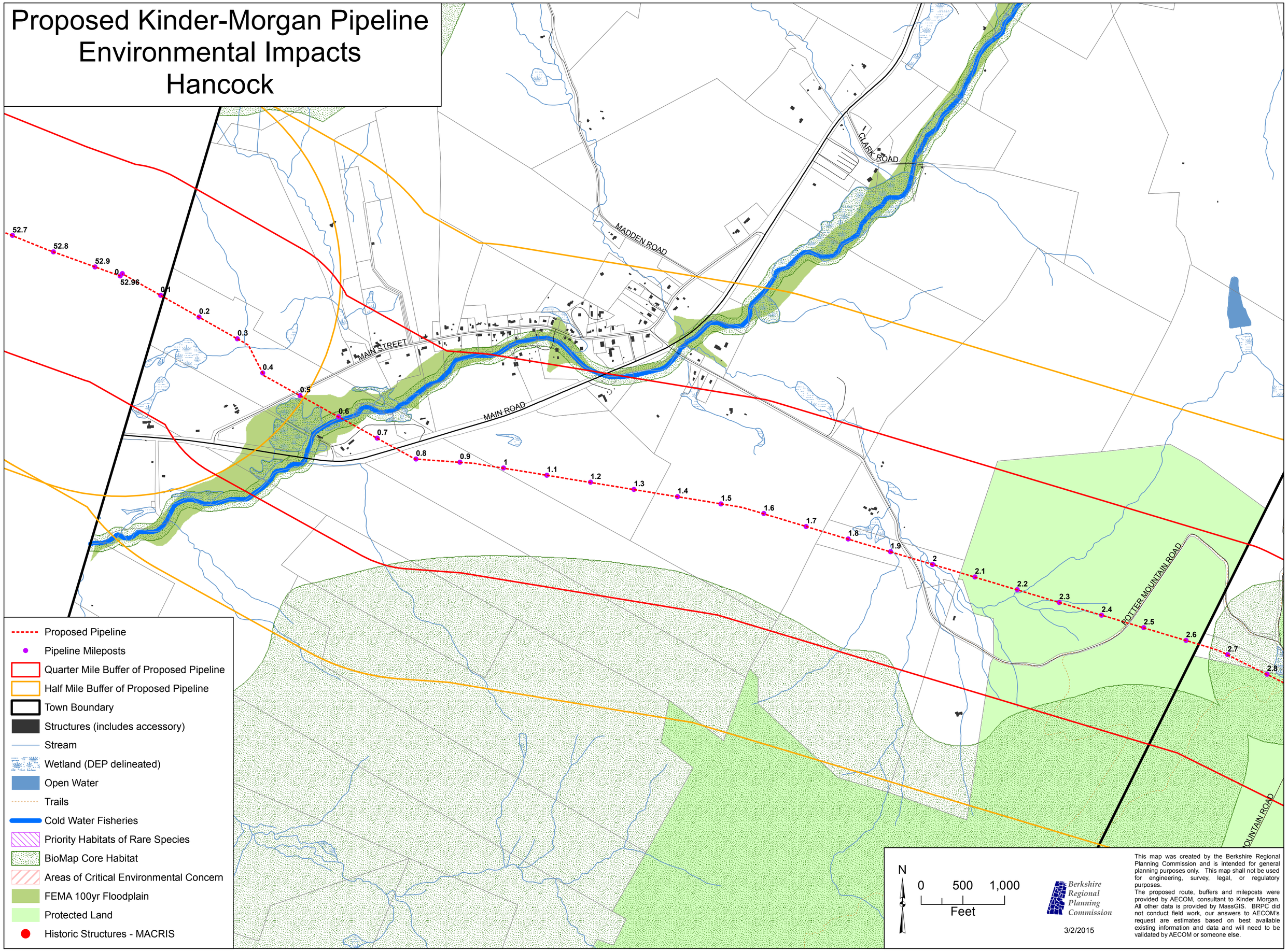
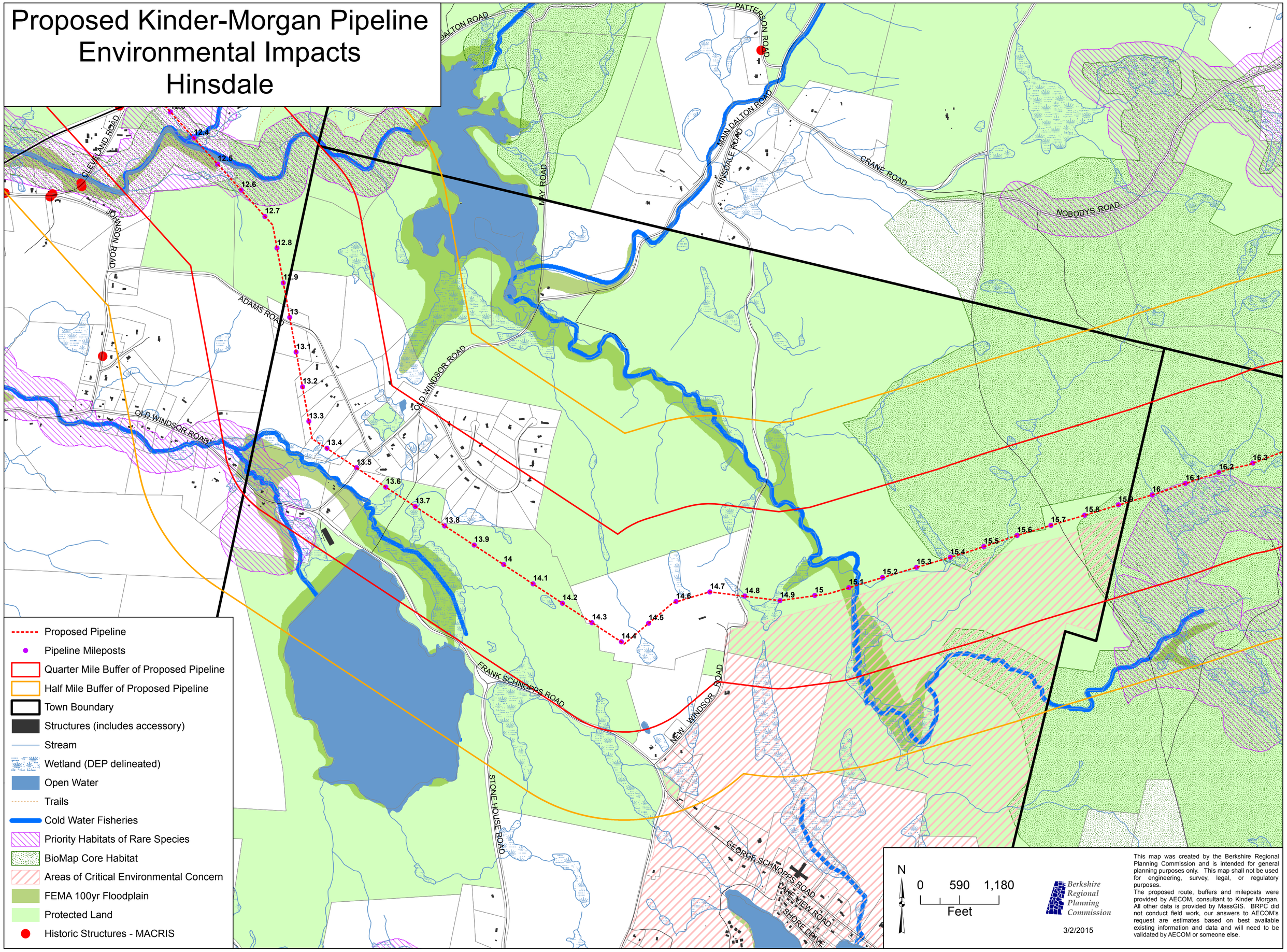
Proposed Kinder-Morgan Pipeline
Environmental Impacts
Dalton



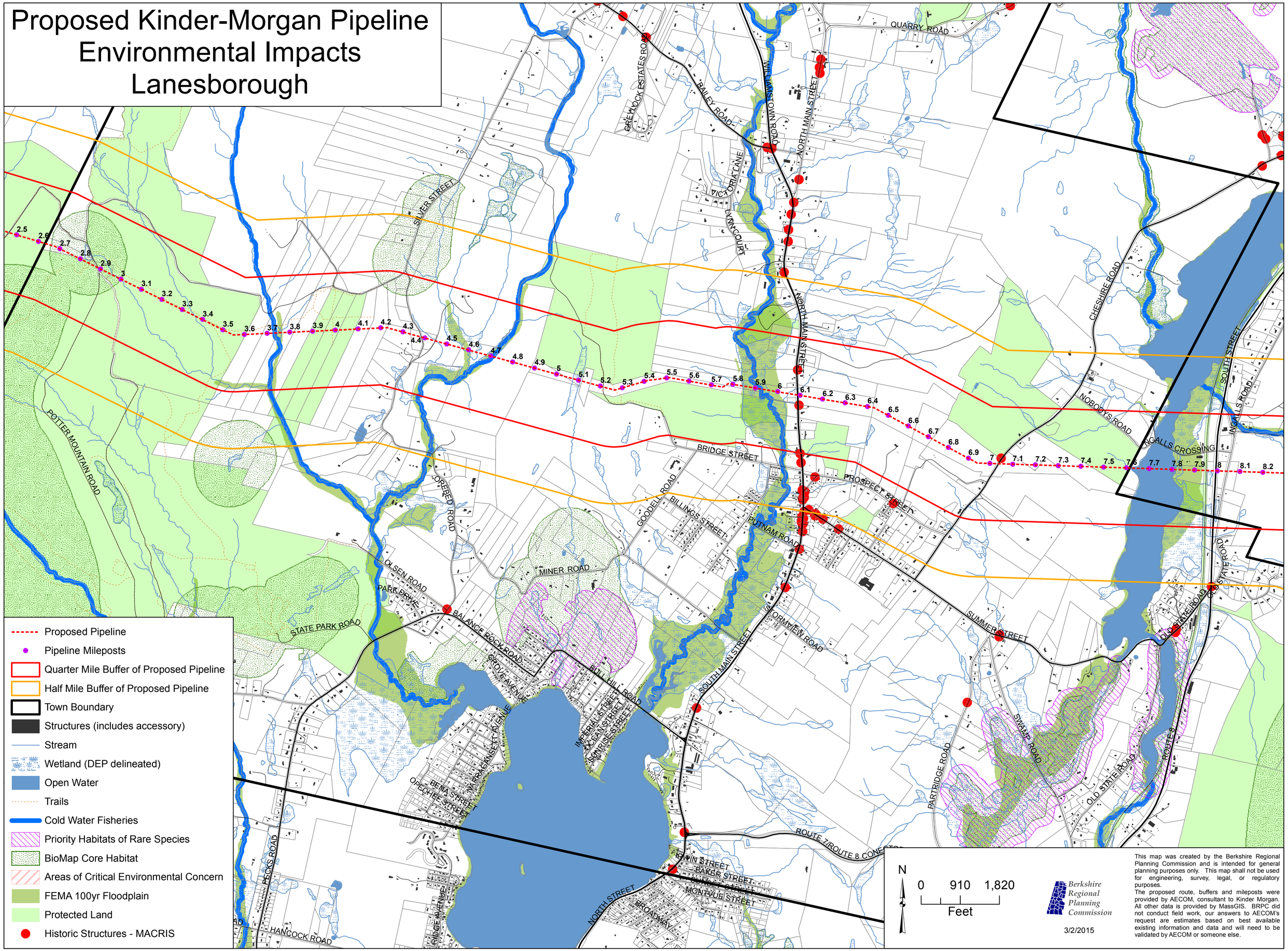
Proposed Kinder-Morgan Pipeline
Environmental Impacts
Hancock



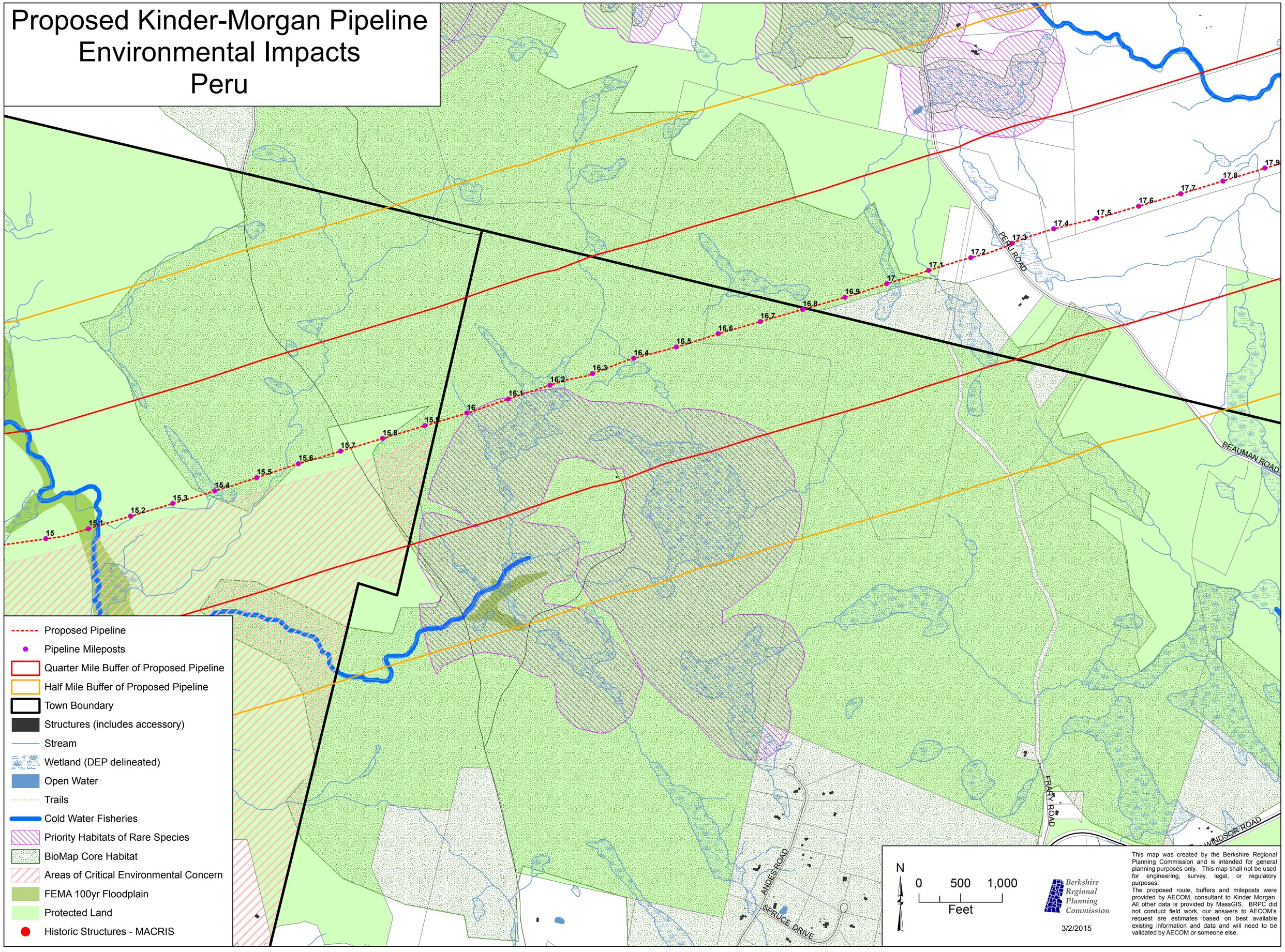
Proposed Kinder-Morgan Pipeline
Environmental Impacts
Hinsdale



Proposed Kinder-Morgan Pipeline
Environmental Impacts
Lanesborough



Proposed Kinder-Morgan Pipeline
Environmental Impacts
Peru



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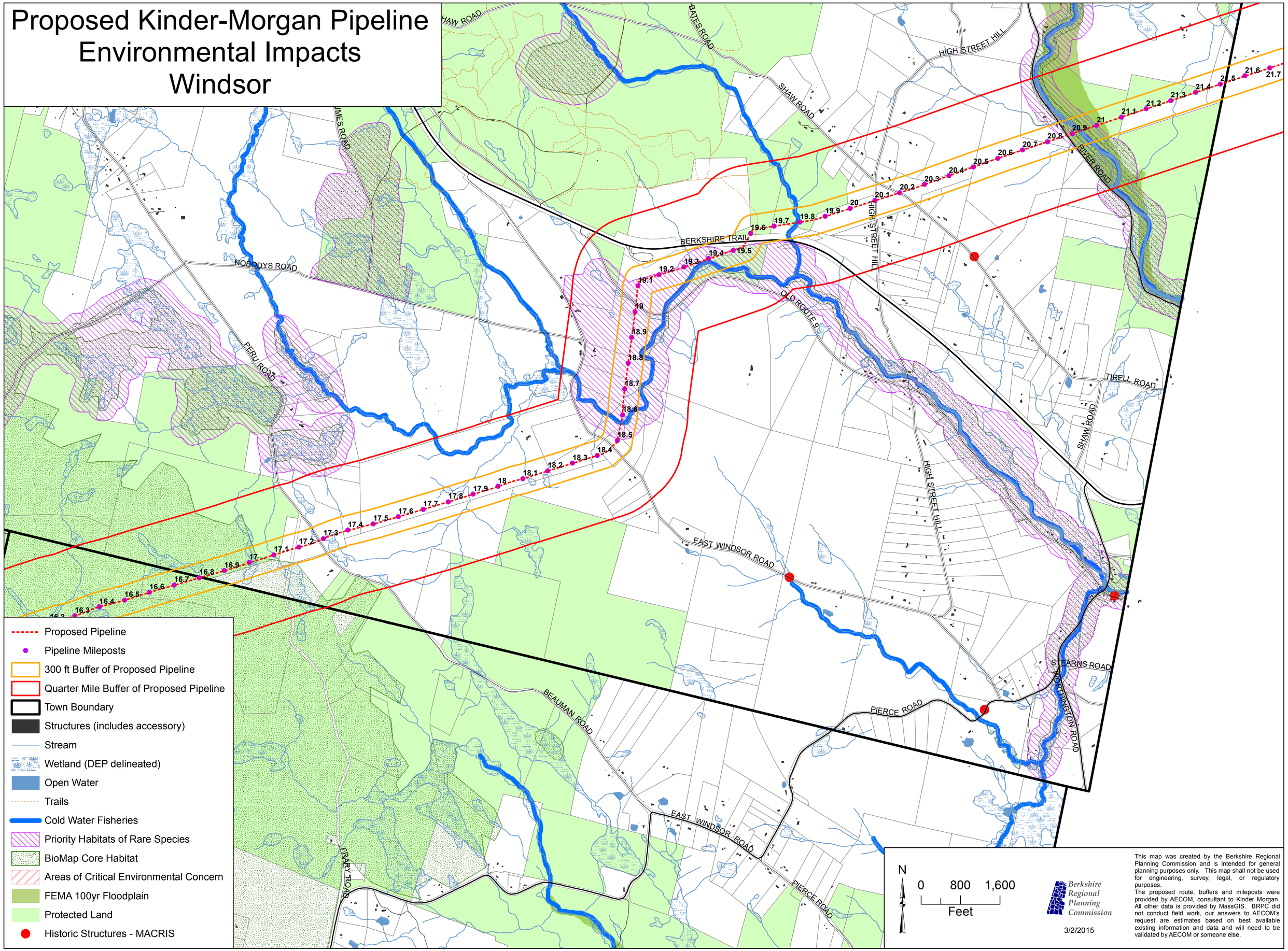
The proposed route, buffers and mileposts were provided by AECOM, consultant to Kinder Morgan. All other data is provided by MassGIS. BRPC did not conduct field work, our answers to AECOM's request are estimates based on best available existing information and data and will need to be validated by AECOM or someone else.

Proposed Kinder-Morgan Pipeline
Environmental Impacts
Windsor



This map was created by the Berkshire Regional Planning Commission and is intended for general planning purposes only. This map shall not be used for engineering, survey, legal, or regulatory purposes.
The proposed route, buffers and mileposts were provided by AECOM, consultant to Kinder Morgan. All other data is provided by MassGIS. BRPC did not conduct field work, our answers to AECOM's request are estimates based on best available existing information and data and will need to be validated by AECOM or someone else.

TECHNICAL GUIDANCE DOCUMENT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Investigation of Manmade Preferential Pathways for Contaminant Transport

www.idem.IN.gov

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Guidance Created/Revised: *September 30, 2011*

Background

The following facts, observations, and examples are based on multiple scenarios encountered by IDEM in which manmade conduits have greatly influenced the ground water hydraulics and/or the distribution and extent of subsurface contamination. This listing does not cover every potential scenario or investigative technique. It is intended for informative purposes only.

> Preferential Pathway: The route of least resistance for fluid flow, or a more permeable feature than the surrounding materials. The pathway may extend vertically or horizontally and be derived naturally or by human activities. The feature may also be oriented such that fluid flow could go in an unexpected direction. Generally, they are limited in width from microscopic to a few tens of feet but are often extensive in length. Examples include sediment grain size changes from fine to coarse; buried stream channels; fractured or dissolved bedrock; desiccation fractures in sediments; improperly sealed wells; field tiles; buried utility lines; and building foundations.

Variability exists in all natural materials. Perfectly regular grain size, distribution, and shape rarely occur in naturally deposited sediments. Thus paths of lesser resistance for movement of fluids naturally exist in almost every geological environment. These pathways range from the intuitively obvious to the very subtle. Well known natural preferential pathways include such features as karst, fractured bedrock, and lithologic changes. More subtle kinds of pathways include vertical fractures in clay soils, angled bedding planes in sands, and millimeter thick silts in clay-rich glacial tills. Natural pathways can range in size from tens of feet (abandoned stream channels), to less than an inch (fractures in clay tills), to microscopic (changes in grain orientation or shape). Most of these heterogeneities can be addressed with a clear conceptual geologic site model and/or a well-designed remedial strategy. If the regional and local geology is known, then the potential effects of these natural pathways can be explained during site investigation and compensated for in remedial action.

Unfortunately, most remediation sites are also located in developed areas where the original subsurface environment has been altered. Even areas that do not appear to be developed have often been changed by human activity. Soils in these areas may have been disturbed by drainage improvements, subsurface utilities, leveling of the ground surface, or excavation for building. Often these features are completely unknown to the investigator.

Why are Manmade Preferential Pathways Important?

Once subsurface materials have been disturbed, they are usually more permeable than naturally deposited sediments, regardless of their composition and grain size. For example, sand used for fill is more permeable than naturally-deposited sand because fill is simply poured into a void rather than sorted by water or compacted by glaciation. Textbook porosity and permeability values assume that materials are uniform and compacted, and these values cannot be used to estimate the nature of backfill.

Manmade preferential pathways can transmit contaminants tens to hundreds of feet away from the release point as pure product, in a vapor phase, or dissolved in water. This movement can often be in directions up-gradient or cross-gradient of a release. Manmade pathways can be an issue regardless of depth to ground water. In areas where ground water is deeper than a pathway, vapors may move great distances through porous conduits and backfill. Where shallow ground water is present, product and dissolved phase plumes can travel quickly and without attenuation beyond the property boundary. In addition, preferential pathways can provide a vertical migration route to deeper levels in the aquifer by intersecting and breaching so-called confining layers.

Manmade preferential pathways can act as both a conduit and a barrier to migration. For example: Borings are placed on both sides of a conduit. The up-gradient area is contaminated but the down-gradient area is not. The initial conclusion is that the site characterization is complete. This is not necessarily accurate. If the backfill is transmissive, the contaminant may have just taken a turn and becomes a very long, narrow plume moving along the conduit. If the backfill is finer grained than the surrounding soils (which can happen) or a subsurface structure is present, the obstacle may deflect or be a barrier to contaminant transport, and contaminants may pool behind the barrier until they find a release point.

As part of the conceptual site model, it is not enough to know only that manmade preferential pathways may exist. It is also imperative to know where they are located horizontally, vertically, and with respect to the release area. The conceptual site model should also seek to understand how preferential pathways may affect the hydraulic properties of the subsurface. This preferential pathway survey typically involves a more comprehensive view of the site layout, the site's surroundings, the local and regional geology and topography, and the degree and age of urbanization in the area.

Identification of Preferential Pathways

Identification and evaluation of preferential pathways should begin before or run concurrently with the investigation of a release. Often, an investigation proceeds forward with delineation from a 'source' but considers neither the mechanism of the release nor the property's characteristics or prior history. This can lead to wasted effort by misinterpreting the distribution of contamination. In order to prevent this from happening, the investigator should step back from examination of the release, and view the site as a whole.

The purpose of this section is to present a list of the common, subsurface elements which can influence soil source geometry, vapor intrusion, and contaminated ground water flow. One or more of these elements are present at nearly every site.

1. Storm/Sanitary Sewers: These are the most common preferential pathways associated with subsurface releases of contaminants. Sometimes, they are the actual source area, because wastes have been poured down a drain or the storm sewer has received run-off from a surface spill. Storm sewers and some older sanitary lines are designed to allow leakage into the subsurface as they move water away. Lines installed prior to the 1980s are usually vitrified clay tile and are prone to breakage and cracking. Sewers should always be at least initially assessed, as they are present at nearly all sites. Not only should the main line(s) be identified, but the lateral(s) into the site buildings need to be located. If there are floor drains within buildings, they need to be diagrammed as well.

   Even if the overall ground water table is below the sewer lines, the sewer may still be influencing contaminant distribution. Vapors can travel along conduits and create indoor air issues. Additionally, localized perched aquifers may be associated with the lines, and in some areas sewer main lines can be as much as 30 feet deep. So, it is not enough to know where the sewer is located; the depth is also vitally important. The sewer should be shown, to scale, on cross sections. In addition, it is very important to understand what direction the sewer flows and if it flows constantly or intermittently (i.e. near a lift station) as the conduit can move contaminants in directions different from the ground water gradient.

Although sewers are the feature most commonly associated with manmade preferential pathway flow, there are other kinds of subsurface conduits which may affect contaminant distribution:

2. Energized subsurface utility lines (Gas, Water, Electric, Fiber Optic, etc.): These subsurface features are usually not primary pathways because they are usually not as large, not buried as deeply, and are not designed to leak as sewers are. However, they are still surrounded by porous backfill which can intercept contaminants. Sometimes they are located in the same trench as the sewer lines, which can complicate an investigation. Depending on the size, depth, and location of the lines, they may explain contaminant distribution. The investigator

should determine the locations of energized or pressurized lines in order to safely drill at a location (or use a water or air knife, see below).

3. Septic Systems and other localized wastewater management systems: These have many names including “concrete vaults”, “dry wells”, “oil/water separators” or “water distribution pits.” Much like sewer lines in urban areas, these are common pathways noted in rural or semi-rural areas. At most sites which have these, the researcher can assume that they are at least a partial source of contamination. Recently urbanized or suburban areas may still have the structure in place even if it is not currently being used for wastewater management. They are handy locations to pour other wastes, especially waste oil and waste solvent.

4. Field Tiles and French Drains: These are a system of clay pipes (tiles) or gravel-filled trenches (drains) typically installed from the late 1700s to present day that are intended to lower the water table of an area to make it amenable for development or farming. In many cases, these intercept or directly connect to the existing storm sewer lines or nearby streams. Tank vaults and other structures can also intersect these features. In older buildings, floor drains may be connected into these instead of a sewer or septic system. These are usually not a factor at small sites or in heavily urbanized areas but historical drainage improvements can cause problems at large urban, suburban, or rural facilities that do not realize the history of the area.

   Almost all soils of glacial origin in Indiana have been extensively field-tiled or ditched to allow drainage for building. In rural and suburban areas, the county surveyor’s office might be able to provide some information on the type and density of tiles. A review of the county soil surveys will also list the natural depth to saturation, and thus the probability of drainage lines.

5. Large Areas of Fill: Almost all sites have been cut or filled to make a level surface. All disturbed areas tend to transmit water, vapors, and contamination more readily than natural soils. Large areas of fill can be a source of contamination or control ground water hydraulics. Estimating the distribution and nature of fill around a site takes a more wide-ranging investigation. Boring logs are sometimes not enough. A thorough Phase I investigation can be invaluable. Reviewing the topographic maps for the area can be a great help, as can current and historical aerial photographs. If they are available, Sanborn maps provide an excellent description of historical structures and property usage. Sometimes intermittent drainage ways have been filled in. Sometimes, perennial streams have been channelized under urban development and there is no surface expression. Slopes along creek valleys might have been filled to grade. Many cities in Indiana were originally connected by a canal system. Research may find that the “Water Street” next to the site used to actually be the canal.

   How much fill material affects the contaminant plume depends mostly on the following:

   a. The contrast between the fill and the native materials. If there is sand fill adjacent to coarse-grained or poorly sorted sand, the pathway is less

pronounced. However, well- sorted, fine-grained sands (i.e. dunes) are much more resistant to flow than poured-in backfill. The interface between sandy fill and clayey soils is often an obvious, primary pathway. There can be a large amount of source material present in the gravel sub-base of parking lots, storage areas, and buildings.

b. The location of the sources of contamination with respect to the fill. Contamination released into the fill tends to want to stay in the fill. Surface releases are much more susceptible to this. Contamination released into natural soil may then collect in areas of fill down-gradient of the source.
c. The distribution and thickness of fill across the site. If the whole site is covered with fill, the investigation is simpler than if only portions of the site are covered with fill. Typically, if only portions of the site are covered, it is to fill in low spots or to make high spots, and these create pools and drainage pathways for contaminants.

6. Existing Foundations: Existing subsurface structures are typically affected by contamination in the fill material surrounding the walls and floor. Most commonly the sub-base is contaminated by seepage through concrete floors in process and storage areas. Thorough site investigation can characterize their effect on contaminant distribution. The existing foundation sub-base, often in concert with interconnected utility lines, is a primary source of vapor intrusion in commercial facilities.

7. Abandoned Foundations, Basements, and Cisterns: These can act as pathways or barriers to migration.

    a. As a barrier: Outside the source area, abandoned basements and subsurface structures can act as islands of clean(er) soil/ground water. Borings placed within or directly down-gradient of these areas may lead to misidentifying the extent of contamination.
    b. As a pathway: These can act as pools of continuing source from a process or disposal area which has been long abandoned.

8. Improperly abandoned or installed wells (water, oil, or gas): This includes monitoring wells. Improperly abandoned or installed wells are usually discovered when contamination shows up in a deeper zone unexpectedly. If an investigator is lucky, historical research and a thorough site walk through may turn up such information as an abandoned pump house, neighbors with wells, or pipes present at the surface. The Department of Natural Resources should be notified when abandoned wells are found (312 IAC 13-10-2).

Investigation of Preferential Pathways

General Subsurface Characterization

As described in the identification section, every developed site may contain manmade alterations which could influence the distribution and migration of contamination.

However, not every site needs to evaluate their property beyond basic identification and mapping of subsurface utilities (including the depth).

> *At the majority of sites with subsurface contamination, a properly completed preferential pathway survey would likely consist only of on-site utility location, a thorough site and vicinity walk through, and (potentially) a telephone call to the municipal department of public works.*

Basic preferential pathway information should be presented on site maps and discussed briefly in the characterization report as a part of the elimination of potential exposure pathways for closure.

The need for further study is initially based these factors:

- <u>The location of the source with respect to known sewer main lines and laterals:</u> Active sewer lines and laterals are usually obvious, but their hydrologic effects are often ignored. If the contaminant source is adjacent to the sewer or directly discharges to the sewer, an investigation of the lines and backfill for source material (regardless of the depth to ground water) is needed. If heavily contaminated ground water flows toward a sewer line which is below the water table, the backfill around the sewer trench should be investigated to determine if it is directing dissolved or vapor phase contaminants off-site.

- <u>Irregular distribution of contamination:</u> Contaminant transport through a porous media creates a plume of a generally predictable size, shape, and concentration gradient based on the hydraulic conductivity and ground water gradient. If contamination is much more widespread than the known geology would tend to allow, contamination suddenly “disappears”, the magnitude of contamination is disproportionate to known source, or heavily contaminated soil, ground water, or vapors are detected in unexpected places, there is a possibility that a preferential pathway could be influencing contaminant travel.

- <u>The development and operational history of the site:</u> If the property has changed usage, added and/or removed buildings, or relocated process areas, it is possible that the historic subsurface alterations and drainage may still be in place. For example, sites which were originally residential may still have sewer laterals, cisterns, and water wells left in place. There may have been pre-development dumping at the site. The site may lie in an area of historic sand and gravel mining where pits were filled back in with waste. Additionally, if the site operations historically used contaminants in solution or had to store and dispose of chemicals once they were “spent,” the sewer or other on-site wastewater management areas need to be fully investigated.

Most of the listed preferential pathways are not obvious in the field and may be nearly impossible to detect with a traditional investigation consisting of soil boring methods. A thorough site walkthrough can sometimes find evidence of septic systems, drainage tiles, old foundations, and wells.

Sometimes there is simply no obvious surface expression at all. The site may be completely paved or altered beyond recognition, but areas of fill are found by chance

during investigation or a pre-development clay tile is penetrated during boring. The development history of the site and the vicinity become very important at this point in the investigation.

Historical research is the key to finding abandoned subsurface structures. Careful review of aerial photographs and historic maps of the property can be very helpful. An assessment of the building construction may find built-on areas and added parcels. These features are common at industrial facilities where processes have changed or moved and in areas which were previously residential prior to commercial development. A telephone call to the department of public works may provide both historic and current utility locations. If those desktop methods are not sufficient, or they cannot satisfactorily explain what is happening, then a non-invasive investigation of the subsurface may help determine whether there are manmade disturbances influencing contaminant travel.

Geophysical surveys are generally the most reliable way to find disturbed areas and subsurface pathways without excavating the entire site. Two types of surveys are commonly used to find and map non-metallic subsurface features.

- Ground Penetrating Radar (GPR): This technique is better for finding subsurface structures such as tanks, wells, and foundations but can find most features. It is also more suited to smaller areas and locations with surface obstructions.
- Resistivity/Conductivity: This technique is better for finding changes in soil structure and composition such as trenches and filled areas but can find most features. This method is better suited to large open areas.

If large areas of the site are covered by concrete with rebar, most geophysical methods are unlikely to be successful.

If unexpected pipes or tiles are found during the investigation, there are several methods available to determine if these features need further investigation.

- Smoke Tests: Smoke testing will show where air flows through a pipe. It is especially useful for finding open drain traps and near-surface breaks. Usually the fire department and nearby neighbors need to be informed before completing a smoke test.
- Vacuum Tests: Vacuum tests are useful if there are multiple conduits which may or may not be connected to a nearby source or receptor.
- Dye Traces: Dyes can determine if water entering a drain is connected to sanitary or storm sewers.
- Sewer cameras: These are useful if the line is completely filled with water, a break in the line is a suspected source, or if trying to precisely locate where an active or inactive line goes.

Invasive Site Investigation *

*This discussion is limited to active utility lines because the most difficult part about investigating the other kinds of preferential pathways is actually *finding* them!

Typically, a well-researched site conceptual model, combined with thoughtfully placed soil borings and monitoring wells, can indirectly explain how a manmade preferential pathway affects contaminant distribution. However, it is sometimes necessary to physically sample the subsurface vapors, soils, and ground water adjacent to active utility lines. When this becomes necessary depends on the nature of the release, the objectives of the investigation, and the closure strategy. Common reasons to directly sample within an active conduit include:

- Determination of source area concentrations for site characterization and risk assessment.
- Determination of soil and ground water quality to complete a pathway elimination assessment.
- Measurement of soil gas concentrations moving along a conduit.

Investigating around sewer lines is complicated by the slight risk of encountering an active line. Often, multiple utilities are located in the same trench. If there are known active water, sewer, or gas line trenches that need to be investigated, the municipality will need to be informed. City utility workers can be an excellent source of information about location and construction of active utilities. Private utility locators will show only the location of subsurface lines, but tell nothing about depth, construction, or quality of the conduits.

Options which pose little risk to the lines themselves are readily available. The methods listed below are not typically part of a standard drilling program. Common tools include:

- Hand auguring: This drilling tool is turned into the ground by muscle power. They have a maximum depth of about 20 feet, depending on soil type. They may not be effective if the utility backfill is very coarse or heterogeneous.

The other two methods require a mobilization with a separate drilling machine. This nearly guarantees that the lines will not be harmed. If there are multiple areas that need to be investigated, this is often the fastest way to investigate and requires the least physical effort.

- Water knife: This machine is similar to a power washer and uses high pressure water to remove unconsolidated material. However, the addition of water can leach adsorbed contamination into the ground water. For this reason, these tools are not very commonly used at contaminated sites.
- Air knife: This machine works almost exactly like a water knife, but uses high pressure air to remove soil. The loose sediment is collected with a vacuum on the back of the truck. However, they might not be as effective in tightly compacted or heterogeneous backfill. Also, they may not be effective in cold weather when shallow sediments or fill material may be frozen. There is a large amount of waste soil generated by an air knife, and this may be a consideration if the corridor is suspected to be highly contaminated. The investigator also needs to account for potential VOC loss due to the high pressure air.

Occasionally, it is simply not possible to directly sample due to factors such as fragile water lines, high pressure gas lines, high voltage lines, or interstate pipelines. It may be difficult or impossible to acquire a right of way access permit from a municipality or individual. Situations like this are handled on a case by case basis.

Examples of the Influence of Preferential Pathways on Contaminant Transport

Contamination source in sewer pipe or utility trench backfill: This scenario occurs at sites where wastes were poured down the drain either as pure product disposal or as a result of poor housekeeping. Sewer disposal often leads to disconnected, high concentration contaminant source areas with very small source footprints. Once on-site investigation has shown there is source material in and around drains, the evaluation needs to continue in the flow direction of the pipe. Pure product can travel some distance through competent pipes, so common disconnected source locations are at T and L junctions, nearby lift stations, and any saddles in the gradient. Once dissolved or adsorbed contamination has been found in the conduit, an investigation of potential ground water receptors and the potential for vapor intrusion is needed in the vicinity of each source area.

Dissolved contamination intercepted by utility trench: This scenario occurs when a release into the subsurface travels down-gradient with ground water flow until it intercepts disturbed soils in contact with the water. This situation leads to plumes which apparently 'end' on-site despite having high concentrations near the property line. In order to confirm the extent of contamination, the investigator may need to drill directly adjacent to the trench in the down-gradient direction of flow *within the preferential pathway* (this is not necessarily the same direction as ground water flow). If investigation shows that contamination is traveling along the trench, there is the potential for discharge of contaminated ground water or vapor intrusion at nearby receptors.

Utilities that control ground water hydraulics: This scenario is probable in urban areas with shallow ground water, low ground water gradient and large diameter sewer lines. It is particularly notable in areas with fine-grained subsurface materials. Common indicators of utility-influenced hydrology include unexplained low or high water levels in wells next to the utility trench, and wells off-site and outside the utility corridor that dramatically change on-site ground water flow direction.

Fill creates ephemeral water table for contaminant movement: Although the perennial water table may be well below filled areas, the contrast in materials' permeability tends to allow for horizontal fluid transport until there is sufficient head pressure to drive it downwards. If there is an above ground release, this mechanism spreads the source material outward and increases the footprint of the contamination. This is a probable cause when there is a very small contaminant source (i.e. sink sized degreaser) but a horizontally extensive shallow soil source. In this scenario, depending on the contrast between native and manmade materials, ground water contaminant concentrations may be low to moderate, while vapor contamination is extremely high. This is a primary concern in buildings with large areas of interconnected, coarse grained sub-base.

Contamination source or transport in drain tiles: Unlike other pathways, drainage tiles usually discharge to nearby perennial or ephemeral surface water features. Once contaminated drainage tiles are found on a site, there needs to be an evaluation of surface drainage areas for contaminated sediments or contamination discharging into surface waters.

Cross-contamination due to wells: This scenario usually occurs at large industrial facilities with multiple production wells. Typical cross-contamination problems come from wells installed prior to current DNR grouting and abandonment requirements outlined in 312 IAC 13. Properly installed wells will not allow cross-contamination.

Closure Strategies

This guide is not intended to be a comprehensive discussion of remedial or closure methods. Not every site will need a specific remedy to remove the risk from contamination in preferential pathways. However, if preferential pathways are significantly affecting the ground water hydraulics or vapor flow, they can create difficulties for both active and passive closure strategies. A good investigation using the principles noted above should determine if and how pathways might be affecting the contaminants. Sometimes, the pathways can make remediation easier, because contamination has been contained within a structure or is being funneled to a single discharge point. Some of the more common difficulties with remediation of preferential pathways are listed below:

How do contaminated pathways affect cleanup and closure strategy?

- Overestimation of radius of influence: This is one of the most common issues caused by preferential pathway flow and is a typical reason active remedial systems can fail. Things to monitor during pilot testing are:
    - One or more distant observation points show a much greater effect than points nearby.
    - All extraction influence is concentrated in one direction.
    - Testing is performed only in areas of disturbed soil or backfill rather than native materials.
- Short circuiting: This will show up as nearly instant vacuum or drawdown in a well. Also, unusually rapid arrival of injectate in distant wells for in-situ remedies is a sign of a conduit.
- Underestimation of source area:
    - Removal of a known source such as USTs or a septic tank is planned. During excavation, contaminated clay tiles or a building foundation are discovered and have to be removed.
    - A remediation system is installed, without understanding the distribution of high contaminant levels in the on-site sewers. After several years of operations, contaminant levels remain much higher than predicted because the source has not been effectively treated. Additional operation and possibly a different corrective action are necessary.

Both these scenarios equate to a large, unexpected expense. It is much less costly to know what is going on before starting remediation.

- Vapor intrusion: The existence of a direct conduit into a building invalidates vapor intrusion models or attenuation factors which assume that contaminants rise through a porous media. Borings around a site can indicate low conductivity soils but do not account for manmade alterations. A common way which vapors can affect buildings is through sewer lines and drains. The presence of coarse-grained fill under and around buildings can also lead to underestimation of risk.
- Plume stability: Continued flow of water through a conduit can destabilize contamination. The presence of conduits can also influence the accuracy of perimeter of compliance wells. If the contamination is leaving the site through a preferential pathway rather than through down-gradient flow, then the pathway is where monitoring needs to be concentrated.
- Fate and transport models: The assumptions for uniform, homogenous subsurface conditions rapidly break down in the presence of conduit flow. If they are not taken into account, the risk can be underestimated.

How is remediation of a preferential pathway accomplished?

As previously noted, many times specific remediation of a preferential pathway is not necessary to achieve closure. The conduit may be simply directing residual ground water contamination, and once the source is addressed, it will attenuate without additional measures. However, if the conduit is allowing contamination to discharge to a receptor at an unacceptable risk level, it needs to be included in the remedial strategy. As an example, at a site where the tail of a contaminant plume intersects a sewer, the sewer would not specifically need to be addressed unless vapors above acceptable risk levels were present in nearby structures or contaminated water was discharging to the surface. The remediation of pathways can be as simple as adjusting the location of a few extraction wells/injection points or as complex as a separate, specifically designed remediation system for the conduits. Usually, contaminated pathways not associated with active utility systems are most effectively remediated by targeted removal.

Resources

IDNR Well Rule 312 IAC 13 http://www.in.gov/legislative/iac/T03120/A00130.PDF?

State Coalition for the Remediation of Dry Cleaners, 2010: Conducting Contamination Assessment at Drycleaning Sites;
http://www.drycleancoalition.org/download/assessment.pdf

Sewer Smoke Testing:
http://ci.santa-rosa.ca.us/departments/utilities/sewer_wastewater/Pages/testing.aspx

Video Sewer Inspections: www.fairfield-city.org/utilities/videoinspections.cfm
www.ci.sunnyside.we.us/services/public_works/sewer_abc/video_inspect.php

Wisconsin Department of Natural Resources, 2000: Guidance for Documenting the Investigation of Utility Corridors; PUBL-RR-649, 9 pages.

USEPA, 1997: Expedited Site Assessment Tools For Underground Storage Tank Sites: A Guide For Regulators: Chapter 3 Surface Geophysical Methods, (EPA 510-B-97-001).
http://www.epa.gov/OUST/pubs/esa-ch3.pdf

Further Information

If you have any additional information regarding this technology or any questions about the evaluation, please contact Geological Services at (317) 234-0991. This technical guidance document will be updated periodically or if new information is acquired.

TOWN OF LANESBOROUGH

COMMONWEALTH OF MASSACHUSETTS

OFFICE OF THE

PLANNING BOARD

ZONING BYLAW - 2012

WITH AMENDMENTS & UPDATES

April 2015

(Reviewed by Administration Office on 4-16-15, confirmed original text & that amendments on February 2013 & June 2014 were added)

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d. A non-conforming use of land or structure which has been abandoned or not used for a period of two (2) years or more shall not be re-established. Any future use of such premises shall conform to this by-law.

SECTION VII – SPECIAL OVERLAY DISTRICTS

A. WATER SUPPLY PROTECTION OVERLAY DISTRICT

1. PURPOSE OF DISTRICT. The purpose of this Water Supply Protection District is to:

a. Promote the health, safety, and general welfare of the community by ensuring an adequate quality and quantity of drinking water for the residents, institutions, and businesses of the Town of Lanesborough;

b. Preserve and protect existing and potential sources of drinking water supplies;

c. Conserve the natural resources of the Town of Lanesborough and:

d. Prevent temporary and permanent contamination of the environment.

2. SCOPE OF AUTHORITY. The Water Supply Protection District is an overlay district superimposed on the zoning districts. This overlay district shall apply to all new construction, reconstruction, or expansion of existing buildings and new or expanded uses. Applicable activities and uses in a portion of one of the underlying zoning districts that fall within the Water Supply Protection District must additionally comply with the requirements of the Water Supply Protection District Bylaw. Uses prohibited in the underlying zoning districts shall not be permitted in the Water Supply Protection District.

3. DEFINITIONS

Aquifer: Geologic formation composed of rock, sand or gravel that contains significant amounts of potentially recoverable water.

CMR: Code of Massachusetts Regulations.

DEP: Massachusetts Department of Environmental Protection.

Water Supply Protection District: Those land area(s) designated on a map adopted pursuant to this bylaw that provide recharge to an existing or planned public drinking water supply well. The water Supply Protection District includes all areas designated as a Zone II and approved by the DEP.

Hazardous Material: Any substance or mixture of physical, chemical, or infectious characteristics posing a significant, actual, or potential hazard to water supplies or other hazards to human health if such substance or mixture were discharged to land or water. Hazardous materials include, without limitation: synthetic organic chemicals; petroleum products; heavy metals; radioactive or infectious wastes; acids and alkalis; solvents and thinners in quantities greater than normal household use; and all substances defined as hazardous or toxic under M.G.L. c.21C and 21E and 310 CMR 30.00.

Hazardous Waste: Any waste defined in the Massachusetts Hazardous Waste Regulations, 310 CMR Section

30.010. This includes, but is not limited to, waste oil, waste solvents, waste oil-based paint and waste pesticides.

Impervious Surface: Material or structure on, above, or below the ground that does not allow precipitation or surface water to penetrate directly into the soil.

Landfill: A facility established in accordance with a valid site assignment for the purposes of disposing solid waste into or on the land, pursuant to 310 CMR 19.006.

M.G.L.: Massachusetts General Law

Petroleum Product: Petroleum or petroleum by-product including, but not limited to: fuel oil; gasoline; diesel; kerosene; aviation jet fuel; aviation gasoline; lubricating oils; oily sludge; oil refuse; oil mixed with other wastes; crude oils; or other liquid hydrocarbons regardless of specific gravity. Petroleum product shall not include liquefied petroleum gas including, but not limited to, liquefied natural gas, propane or butane.

Non-sanitary wastewater: Wastewater discharges from industrial and commercial facilities containing wastes from any activity other than collection of sanitary sewage including, but not limited to, activities specified in the Standard Industrial Classification (SIC) Codes set forth in 310 CMR 15.004(6).

Open Dump: A facility operated or maintained in violation of the Resource Conservation and Recovery Act (42 U.S.C. 4004(a)(b)), or state regulations and criteria for solid waste disposal.

Potential Drinking Water Sources: Areas that could provide significant potable water in the future.

Recharge Areas: Areas that collect precipitation or surface water and carry it to aquifers. Recharge areas include DEP approved Zone I, Zone II, or Zone III areas. 4

Septage: The liquid, solid, and semi-solid contents of privies, chemical toilets, cesspools, holding tanks, or other sewage waste receptacles. Septage does not include any material that is a hazardous waste as defined by 310 CMR 30.000.

Sludge: The solid, semi-solid, and liquid residue that results from a process of wastewater treatment or drinking water treatment. Sludge does not include grit, screening, or grease and oil which are removed at the head-works of a facility

Treatment Works: Any and all devices, processes and properties, real or personal, used in the collection, pumping, transmission, storage, treatment, disposal, recycling, reclamation, or reuse of waterborne pollutants, but not including any works receiving a hazardous waste from off the site of the works for the purpose of treatment, storage, or disposal.

Very Small Quantity Generator: Any public or private entity, other than residential, which produces less than 27 gallons (100 kilograms) a month of hazardous waste or waste oil, but not including any acutely hazardous waste as defined in 310 CMR 30.136.

Waste Oil Retention Facility: A waste oil collection facility for automobile service stations, retail outlets, and marinas which is sheltered and has adequate protection to contain a spill, seepage, or discharge of petroleum waste products in accordance with M.G.L. c.21. s.52A.

Zone I: The DEP designated protective radius around a public water system well or well-field.

Zone II: The DEP approved area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can be realistically anticipated as defined in 310 CMR 22.00.

4. ESTABLISHMENT AND DELINEATION OF WATER SUPPLY PROTECTION DISTRICT

a. For the purposes of this District, there are hereby established within the Town of Lanesborough certain groundwater protection areas, consisting of aquifers or recharge areas which are delineated on a map. This map is at a scale of 1 inch to 1,000 feet and is entitled, "Water Supply Protection District, Town of Lanesborough", dated September 1, 1993. This map is hereby made a part of the Town of Lanesborough zoning bylaw and is on file in the Office of the Town Clerk.

5. DISTRICT BOUNDARY DISPUTES

a. If the location of the District boundary in relation to a particular parcel is in doubt, resolution of boundary disputes shall be through a Special Permit application to the Special Permit Granting Authority (SPGA). Any application for a Special Permit for this purpose shall be accompanied by adequate documentation.

b. The burden of proof shall be upon the owner(s) of the land to demonstrate that the location of the District boundary with respect to a parcel(s) of land is uncertain. At the request of the owner(s), the Town of Lanesborough may engage a professional engineer, hydrologist, geologist, or soil scientist to determine more accurately the boundaries of the District with respect to individual parcels of land, and may charge the owner(s) for the cost of the investigation. Amendments to the Water Supply Protection District require Town Meeting approval.

c. Where the boundary line of the Water Supply Protection District divides a lot or parcel, the requirements established by this bylaw shall apply only to the portion of the lot or parcel located within the WSPD.

6. PERMITTED USES

a. The following uses are permitted within the Water Supply Protection District, provided that all necessary permits, orders, or approvals required by local, state, or federal law are also obtained:

i. conservation of soil, water, plants, and wildlife;

ii. outdoor recreation, nature study, boating, fishing, and hunting where otherwise legally permitted;

iii. foot, bicycle and/or horse paths, and bridges;

iv. normal operation and maintenance of existing water bodies and dams, splash boards, and other water control, supply and conservation devices;

v. maintenance, repair, and enlargement of any existing structure, subject to paragraphs 7 and 8 of this Section;

vi. residential development, subject to paragraphs 7 and 8 of this Section;

vii. farming, gardening, nursery, conservation, forestry, harvesting, and grazing, subject to paragraphs 7 and 8 of this Section;

viii. construction, maintenance, repair, and enlargement of drinking water supply related facilities such as, but not limited to, wells, pipelines, aqueducts, and tunnels.

7. PROHIBITED USES

a. The following uses are prohibited within the Water Supply Protection District:

i. landfills and open dumps as defined in 310 CMR 19.006;

ii. automobile graveyards and junkyards, as defined in M.G.L. c.140B, s.1;

iii. landfills receiving only wastewater and/or septage residuals including those approved by the Department pursuant to M.G.L. c. 21 s.26 through s.53; M.G.L. c. 111 s.17; M.G.L. c.83, s.6 and s.7, and regulations promulgated thereunder;

iv. facilities that generate, treat, store, or dispose of hazardous waste that are subject to M.G.L. c. 21C and 310 CMR 30.00, except for:

1. very small quantity generators as defined under 310 CMR 30.000;
2. household hazardous waste centers and events under 310 CMR 30.390;
3. waste oil retention facilities required by M.G.L. c. 21, s.52A;
4. water remediation treatment works approved by DEP for the treatment of contaminated waters

v. petroleum, fuel oil, and heating oil bulk stations and terminals including, but not limited to, those listed under Standard Industrial Classification (SIC) Codes 5983 and 5171, not including liquefied petroleum gas.

vi. storage of liquid hazardous materials, as defined in M.G.L. c. 21E, and/or liquid petroleum products unless such storage is:

1. above ground level and on an impervious surface; and
2. either in container(s) OR above ground tank(s) within a building OR outdoors in covered container(s) OR above ground tank(s) in an area that has a containment system designed and operated to hold either; 10% of the total possible storage capacity of all containers OR 110% of the largest container's storage capacity, whichever is greater.

vii. storage of sludge and septage, unless such storage is in compliance with 310 CMR 32.30 and 310 CMR 32.31;

viii. storage of deicing chemicals unless such storage, including loading areas, is within a structure designed to prevent the generation and escape of contaminated runoff or leachate;

ix. storage of animal manure unless covered or contained within a structure designed to prevent the generation and escape of contaminated runoff or leachate;

x. earth removal, consisting of the removal of soil, loam, sand, gravel, or any other earth material to within 4 feet of historical high groundwater as determined from monitoring wells and historical water table fluctuation data compiled by the United States Geological Survey,

except for excavations for building foundations, roads, or utility works;

xi. discharge to the ground of non-sanitary wastewater including industrial and commercial process waste water, except:

1. the replacement or repair of an existing treatment works that will not result in a design capacity greater than the design capacity of the existing treatment works;
2. treatment works approved by the Department designed for the treatment of contaminated ground or surface water and operating in compliance with 314 CMR 5.05(3) or 5.05(13);and
3.publicly owned treatment works.

xii. stockpiling and disposal of snow and ice containing deicing chemicals brought in from outside the district;

xiii. storage of commercial fertilizers, as defined in M.G.L. c.128, s.64, unless such storage is within a structure designed to prevent the generation and escape of contaminated runoff or leachate.

8. USES AND ACTIVITIES REQUIRING A SPECIAL PERMIT

a. The following uses and activities are permitted only upon the issuance of a Special Permit by the Planning Board under such conditions as they may require:

i. enlargement or alteration of existing uses that do not conform to the Water Supply Protection District

ii. those activities that involve the handling of toxic or hazardous materials in quantities greater than those associated with normal household use, permitted in the underlying zoning (except as prohibited under paragraph 7). Such activities shall require a Special Permit to prevent contamination of groundwater

iii. any use that will render impervious any lot or parcel more than 15% or 2,500 square feet, whichever is greater. A system for groundwater recharge must be provided which does not degrade groundwater quality. For non-residential uses, recharge shall be by storm water infiltration basins or similar system covered with natural vegetation, and dry wells shall be used only where other methods are infeasible. For all non-residential uses, all such basins and wells shall be preceded by oil, grease, and sediment traps to facilitate removal of contamination. Any and all recharge areas shall be permanently maintained in full working order by the owner.

9. PROCEDURES FOR ISSUANCE OF SPECIAL PERMIT

a. The Special Permit Granting Authority (SPGA) under this bylaw shall be the Planning Board. Such Special Permit shall be granted if the SPGA determines, in conjunction with the Board of Health, Conservation Commission, Water District that the intent of this bylaw as well as its specific criteria, are met. The SPGA shall not grant a Special Permit under this section unless the petitioner's application materials include, in the SPGA's opinion, sufficiently detailed, definite, and credible information to support positive findings in relation to the standards given in this section. The SPGA shall document the basis for any departures from the recommendations of the other Town boards, departments or commissions in its decision.

b. Upon receipt of the Special Permit application, the SPGA shall transmit one copy to the Board of Health,

Conservation Commission, Engineer and Water District. Failure to respond in writing within 35 days of receipt shall indicate approval, or no desire to comment. The necessary number of copies of the application shall be furnished by the applicant.

c. The SPGA may grant the required Special Permit only upon finding that the proposed use meets the following standards, those specified in paragraph 6 of this Section and any regulations or guidelines adopted by the SPGA. The proposed use must:

i. in no way, during construction or thereafter, adversely affect the existing or potential quality of quantity of water that is available in the Water Supply Protection District; and

ii. be designed to avoid substantial disturbance of the soils, topography, drainage, vegetation, and other water-related natural characteristics of the site to be developed.

iii. The SPGA may adopt regulations to govern design features of projects. Such regulations shall be consistent with subdivision regulations adopted by the Town of Lanesborough.

iv. The applicant shall file four (4) copies of a site plan and attachments. The site plan shall be drawn at a proper scale as determined by the SPGA and be stamped by a professional engineer. All additional submittals shall be prepared by qualified professionals. The site plan and its attachments shall at a minimum include the following information where pertinent:

1. a complete list of chemicals, pesticides, herbicides, fertilizers, fuels, and other potentially hazardous materials to be used or stored on the premises in quantities greater than those associated with normal household use;
2. for those activities using or storing such hazardous materials, a hazardous materials management plan shall be prepared and filed with the Fire Chief and Board of Health. The plan shall include:

A. provisions to protect against the discharge of hazardous materials or wastes to the environment due to spillage, accidental damage, corrosion, leakage, or vandalism, including spill containment and clean-up procedures;
B. provisions for indoor, secured storage of hazardous materials and wastes with impervious floor surfaces;
C. evidence of compliance with the Massachusetts Hazardous Waste Regulations 310 CMR 30.00;19 and
D. proposed down-gradient location(s) for groundwater monitoring well(s), should the SPGA deem the activity a potential groundwater threat.

v. The SPGA shall hold a hearing, in conformity with the provision of M.G.L. c.40A s. 9, within 65 days after the filing of the application.

vi. Notice of the public hearing shall be given by publication and posting and by first-class mailings to "parties of interest" as defined in M.G.L. c.40A s.11. The decision of the SPGA and any extension, modification, or renewal thereof shall be filed with the SPGA and Town Clerk within 90 days following the closing of the public hearing. Failure of the SPGA to act within 90 days shall be deemed as a granting of the permit.

10. ENFORCEMENT

a. Written notice of any violations of this bylaw shall be given by the Building Inspector to the responsible person as soon as possible after detection of a violation or a continuing violation. Notice to the assessed owner of the property shall be deemed notice to the responsible person. Such notice shall specify the requirement or restriction violated and the nature of the violation, and may also identify the actions necessary to remove or remedy the violations and preventive measures required for avoiding future violations and a schedule of compliance.

b. A copy of such notice shall be submitted to the Board of Health, Conservation Commission, and Water District. The cost of containment, clean-up, or other action of compliance shall be borne by the owner and operator of the premises.

11. SEVERABILITY. A determination that any portion or provision of this overlay protection district is invalid shall not invalidate any other portion or provision thereof, nor shall it invalidate any Special Permit previously issued thereunder.

B. FLOOD PLAIN/WETLANDS PROTECTION OVERLAY DISTRICT

1. PURPOSES. The purposes of this district are:

a. To provide that lands in the Town of Lanesborough subject to seasonal or periodic flooding as described hereinafter shall not be used for residence or other purposes in such a manner as to endanger the health or safety of the occupants thereof.

b. To protect, preserve and maintain the water table and the water recharge areas within the town so as to preserve present and potential water supplies for the public health and safety of the residents of the Town of Lanesborough.

c. To assure the continuation of the natural flow pattern of the water course(s) within the Town of Lanesborough in order to provide adequate and safe floodwater storage capacity to protect persons and property against the hazards of flood inundation.

2. DISTRICT DELINEATION. The general boundaries of the Flood Plain District are shown on the Lanesborough Flood Insurance Rate Map (FIRM), dated June 15, 1982, Zones A. A 1-30 to indicate the 100 year flood plain. The Exact boundaries of the District are defined by the 100 year water surface elevations shown on the FIRM and further defined by the Flood Profiles contained in the Flood Insurance Study, dated June 15, 1982. The floodway boundaries are delineated on the Lanesborough Flood Boundary Floodway Map (FBFM), dated June 15, 1982, and further defined by the Floodway Data Tables contained in the Flood Insurance Study. These two maps as well as the accompanying study are incorporated herein by reference and are on file with the Town Clerk, Planning Board, Building Inspector, Selectmen and Assessors. (Definition accepted in February 14, 1983 Special Town Meeting)

3. USE REGULATIONS.

a. The flood plain district shall be considered as overlying other districts, any uses permitted in the portions of the districts so overlaid shall be permitted subject to all the provisions of this section.

b. In the flood plain district no new building or structure shall be erected, constructed, altered, enlarged or moved, no dumping filling or earth transfer or relocation shall be used for any purposes except:

TOWN OF NASSAU
ZONING LAW

Local Law No. 2 of 2011

Adopted by the Nassau Town Board
September 8, 2011

ZONING LAW OF TOWN OF NASSAU
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7.1-5 On-site waste disposal systems shall be located so as to avoid impairment or contamination from the systems during flooding.

7.1-6 Residential structures shall have the lowest habitable floor elevated to at least one (1) foot above the one hundred (100) year flood.

SECTION 7.2 – Additional Requirements

In addition to the above, any such use shall meet the following requirements:

7.2-1 Such use shall include flood-proofing measures consistent with the flood protection elevation and associated flood factors for the particular area in which construction is to take place; or

7.2-2 Any structure built on pilings shall be constructed with the lowest floor elevated to at least one foot above the one hundred (100) year flood level; or

7.2-3 Any structure built on solid fill shall be constructed at an elevation of the one hundred (100) year flood level with the lowest floor elevated to at least one (1) foot above the one hundred (100) year flood level.

SECTION 7.3 – Subdivision Review

All proposed subdivisions (including mobile dwelling parks) shall be planned so as to:

Minimize flood damage;

Locate and construct new utilities and infrastructure to minimize or eliminate flood damage; and

Provide adequate drainage.

SECTION 7.4 – Procedure

It shall be the responsibility of the applicant to illustrate the manner in which all of the preceding requirements are to be met. The Code Enforcement Officer shall not issue a zoning or building permit until all requirements are accommodated in the plan of the applicant and a site plan has been authorized by the Planning Board.

ARTICLE 7A AQUIFER PROTECTION OVERLAY REGULATIONS

The following regulations apply to all land contained in the Aquifer Protection Overlay.

SECTION 7A.1 Boundaries of Overlay

The boundaries of the Aquifer Protection Overlay District are established as depicted on the Zoning Map annexed hereto and made a part of this Law as Schedule A. The Aquifer Protection Overlay District shall include all land, water bodies, existing structures, and improvements within the boundaries of the Aquifer Protection Overlay District. The Overlay includes the boundaries of the unconsolidated aquifers and one thousand (1,000) foot buffer area.

SECTION 7A.2 Area and Dimensional Requirements, Schedule of Uses, Other Regulations
The area and dimensional requirements (as set forth on Schedule C of this Law) of the underlying Zoning Districts shall apply to land contained in the Aquifer Protection Overlay. The Schedule of Uses (Schedule B of this Law) as shown under the column entitled "Aquifer Overlay" shall apply to the Aquifer Protection Overlay. All other regulations contained in this Law shall also apply to all land contained in the Aquifer Protection Overlay as well as the provisions of this Article. Where conflict exists between the provisions of this Article and other provisions contained in this Law, the stricter shall apply.

SECTION 7A.3 Specific Provisions for the Aquifer Protection Overlay
The following regulations, requirements and provisions apply specifically to land contained in the Aquifer Protection Overlay.

7A.3-1 Wellhead Buffer Zones
Wellhead buffers of all public water systems, including community water systems, installed after the effective date of this Local Law shall be protected and controlled through direct ownership of the land or through the acquisition of protective easements or other appropriate measures by the supplier of water in order to prevent contamination. Within wellhead buffer zones, all systems, facilities, and activities are prohibited except for physical pumping and treatment facilities and controls. The wellhead buffer zone shall not be used for any purpose other than public water supply, except when a permit has been issued by the appropriate local board for non-intrusive recreation uses such as hunting, fishing, picnicking, nature study, or hiking. The wellhead buffer zone shall be posted prohibiting trespass for any purpose except as permitted in this Subsection. The development of new water supply sources for public water systems installed and operated after the effective date of this Chapter shall be designed, constructed and maintained subject to the approval and enforcement authority of the Rensselaer County Health Department (RCHD), New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) so as to eliminate the opportunity for pollution to enter the water sources. The physical pumping facilities and controls for all public water systems shall be protected against damage from tampering by fencing or other enclosures or by their manner of construction and installation.

7A.3-2 Wastewater Treatment Systems
All wastewater treatment systems, including residential septic systems for domestic use, which discharge to groundwater and receive wastewater without the admixture of industrial or other wastes, as those terms are defined in l0 NYCRR l00, Subpart 112.5, in quantities less than one thousand (1,000) gallons per day, shall be designed, installed and maintained in accordance with the standards established in 10 NYCRR 75 (Appendix 75A). The operation of these wastewater treatment systems shall also comply with all wastewater disposal standards promulgated by the Rensselaer County Health Department where such standards are more stringent than those defined in l0 NYCRR 75 (Appendix 75A). All other wastewater treatment systems, including design, installation and maintenance, are subject to and must comply with permits issued by the NYSDEC and are further subject to Town of Nassau Planning Board review.

7A.3-3 Point Source Discharges
Point source discharges other than discharges authorized by permits issued by the NYSDEC are prohibited.

7A.3-4 Notice to Public Water System Owners
Any person or entity preparing an environmental assessment form or an environmental impact statement per 6 NYCRR 617 (SEQRA Regulations) for proposed activities occurring within the

Aquifer Overlay Protection District shall file a copy with the nearest, if then created, public water system owners (as identified to the applicant by the Secretary of the Town of Nassau Planning Board) and the Town of Nassau Planning Board.

7A.3-5 Animal Waste, Fertilizer and Pesticides

A. The storage or stockpiling of manure and other animal waste for use in agricultural operations, agricultural use of fertilizers and land application of manure and pesticide (including herbicide) storage and use shall not be located within a two hundred and fifty (250) foot linear distance from a watercourse. Such storage and stockpiling shall comply, to the extent practicable, with the practices detailed in the most current versions of "Controlling Agricultural Nonpoint Source Water Pollution in New York State - A Guide to the Selection of Best Management Practices to Improve and Protect Water Quality" published by the NYSDEC, Division of Water, or "Agricultural Management Practices Catalogue for Nonpoint Source Pollution Prevention and Water Quality Protection in New York State" (Agricultural Management Practices Sub-Committee of the New York State Nonpoint Source Management Practices Task Force). These documents are available for public inspection and reference at the office of the Town Clerk.

B. Open storage of fertilizers is prohibited.

C. Fertilizers, pesticides, and herbicides shall not be applied in a manner or at a rate which contributes to or causes a contravention of the surface water quality standards set forth in 6 NYCRR 700 to 705. Pesticide storage and use (including herbicides) are subject to the approval of, and shall comply with the regulations of the New York State Department of Environmental Conservation.

D. Disposal of pesticides, including herbicides is prohibited, other than in accordance with specific label restrictions.

E. Disposal of water used for pesticide makeup water or for washing of pesticide equipment is prohibited.

F. Use of streams as sources of water or for the washing of equipment used in conjunction with pesticide or herbicide application is prohibited.

G. Lawn chemicals (pesticides and herbicides) shall not be applied within twenty-five (25) linear feet of any watercourse. Individuals responsible for oversight of the land uses on private lands are encouraged to consult with the Rensselaer County Soil and Water Conservation District and the Natural Resources Conservation Service (United States Department of Agriculture) for proper selection, implementation, and funding of Best Management Practices referred to in Subsection 7A.3-5.A. above.

7A.3-6 Sediment Generation

A. Farm tillage practices shall comply to the extent practicable with the most current versions of "Controlling Agricultural Non-point Source Water Pollution in New York State - A Guideline to the Selection of Best Management Practices to Improve and Protect Water Quality" published by the NYSDEC Division of Water or "Agricultural Management Practices Catalogue for Nonpoint Source Pollution Prevention and Water Quality Protection in New York State" referred to in Subsection 7A.3-5.A. above.

B. Land disturbing activities which may result in deterioration of the quality or quantity of private and public water supply sources, including but not limited to general construction, highway construction, access road construction and maintenance, are prohibited except where measures have been put in place to manage storm water runoff during and after construction and to prevent erosion and sediment production pursuant to current NYSDEC regulations.

C. Practices detailed in the most current edition of "Reducing the Impacts of Storm Water Runoff from New Development" published by the NYSDEC, Division of Water, shall be followed to the greatest extent practicable.

D. Site plans submitted to the Town of Nassau Planning Board shall clearly describe all land disturbing activities and sediment reduction measures to be implemented during all phases of construction as well as any ongoing land management activities.

E. Individuals responsible for oversight of the land uses on private lands should consult with the Rensselaer County Soil and Water Conservation District and the Natural Resource Conservation Service (United States Department of Agriculture) for proper selection and implementation of Best Management Practices.

7A.3-7 Petroleum Storage

A. Aboveground or underground petroleum storage tanks, including design, installation and maintenance, are subject to the approval of and must comply with the regulations of the NYSDEC.

B. Abandoned above ground or underground petroleum storage tanks must comply with the closure requirements of 6 NYCRR 6l3.9.

C. Any storage tank(s) installed or replaced after the effective date of this section, where storage capacity is less than eleven hundred (l,100) gallons, must be above ground or fully visible for inspection within a basement or other interior space. Delivery lines must be as short as practicable, and in good condition.

D. Aboveground or underground petroleum storage tanks over eleven hundred (1,100) gallons and subject to the NYSDEC regulations must comply with NYSDEC's regulations, including those pertaining to berms, dikes, and other appropriate secondary containment construction to prevent the ingress of stored materials into the ground in the event of a tank leak or discharge. Such tanks shall require review and approval by the Town of Nassau Planning Board.

7A.3-8 Hazardous Substance Bulk Storage

The storage of hazardous substances in bulk must comply with the regulations set forth in 6 NYCRR 596 and permit, orders and approvals issued pursuant thereto by the NYSDEC. Hazardous substance storage for commercial/industrial uses that is not regulated by NYSDEC shall only occur on an enclosed, impervious surface that is bermed or otherwise constructed to contain spills or leaks.

7A.3-9 Stockpiles

Storage of chloride salts coal and/or cinders is prohibited except in structures designed to minimize contact with precipitation and constructed on low-permeability pads designed to control seepage and runoff; if necessary, runoff material will be collected and treated.

7A.3-10 Chloride Salt Application
Deicing chloride salt use is restricted to the minimum amount needed for public safety as determined by the Town Highway Superintendent.

7A.3-11 Construction and Closure of Wells

A. Oil and gas well construction, use, maintenance and abandonment are subject to the approval of and must comply with the regulations of the NYSDEC.

B. Water system and other well construction, maintenance and abandonment are subject to the approval of and must comply with the regulations of the RCHD and the NYSDOH as set forth in standards and procedures contained in Section 5-1.22 of the State Sanitary Code and the NYSDEC under 6 NYCRR 601.

7A.3-12 Prevention of Contamination of Water
All uses allowed or operating in the Aquifer Protection Overlay shall be operated to prevent contamination of water supplies per the New York State Environmental Conservation and Public Health Laws.

SECTION 7A.4 Additional Requirements
Requirements set forth in this Section pertain to any activities occurring within the Aquifer Protection Overlay District.

A. It shall be unlawful for any person or commercial/industrial entity to directly or indirectly throw, drain, or otherwise discharge substances that exceed NYSDEC water quality standards into the groundwater or surface water of the Town without treatment, unless such activity is authorized by a permit from or otherwise approved by the appropriate regulatory authority.

B. Bulk storage of coal, chloride salts, or mixtures of chloride salts with aggregate shall only be allowed within watertight structures. Any outside loading or handling area shall have a base of impervious material that is graded or diked in such a manner to prevent seepage and runoff. If necessary, runoff material will be collected and treated. These storage, loading and handling areas shall not be allowed within a linear distance of two hundred and fifty (250) feet from a surface water body.

C. Solid waste landfills, construction and demolition waste landfills are prohibited. Junkyards (including motor vehicle), vehicle salvage operations, or metal salvage operations shall not be located within a linear distance of five hundred (500) feet from a surface water body.

D. Activities at service repair shops involving the use or potential spillage of hazardous materials or petroleum shall be conducted on an impervious surface that is bermed or otherwise constructed to contain spills or leaks.

E. Septage waste and sewage sludge shall not be deposited within a linear distance of five hundred (500) feet from a surface water body, unless it is permitted by NYSDEC.

F. There shall be no commercial or industrial storage of petroleum or hazardous materials within a linear distance of five hundred (500) feet of a surface water body.

G. Site plan review for municipal buildings and uses will be required.

H. Hazardous waste, hazardous substance, petroleum and radioactive waste disposals are prohibited.

SECTION 7A.5 Overlay Boundary Adjustment Procedures

7A.5-1 Purpose

The Aquifer Protection Overlay boundaries were established using the map prepared by the NYS Department of Health, Bureau of Public Water Supply Protection, entitled "NYS Aquifers", and dated, January 20, 2004.. It is the Town's understanding that this mapping was created using the best available data in order to provide a resource tool for communities with respect to identifying and protecting these important groundwater resources. However, given the scale of the mapping and the difficulty in clearly defining the extent of underground water resources, it is also understood that the location of the unconsolidated aquifer and thereby the Overlay boundaries may not be exact and completely certain. It is also understood that additional detailed study of the geology and groundwater resources could, perhaps enable the groundwater aquifer to be more accurately identified. However, the Town has limited financial resources that prohibit the Town from conducting further detailed studies. Accordingly, the Town has sought a reasonable and responsible balance between protecting the aquifers within the Town as identified on the most current maps and ensuring that the boundaries of the Overlay do not unduly apply to land that is not over the aquifer, or within the one thousand (1000) foot buffer surrounding the boundaries of the aquifer. As such, the provisions in this Section are intended to provide a mechanism for adjustment of the boundaries of the Aquifer Protection Overlay on a case by case basis.

7A.5-2 Process

The process for a landowner to request an adjustment of the Aquifer Protection Overlay boundaries is as follows:

A. The landowner shall submit a request, in writing, to the Town Board that the Town Board modify the boundaries of the Aquifer Protection Overlay identifying the land in question and the extent of the boundary modification together with a proposal from a NYS licensed professional engineer or geologist that details the steps and methods that will be used to evaluate whether or not the proposed activity will occur within an area that is integral to the currently identified and mapped aquifers within the Town. For purposes of this section, the term "integral" means that all surface or groundwater paths (including but not limited to aquifer recharge zones, fissures and faults) that potentially end up in the groundwater aquifer must be reviewed and evaluated.

B. The Town Board shall refer the proposal to an independent and qualified professional engineering or groundwater consulting firm. The purpose of this review is to ensure the proposal's adequacy based on accepted practices and to advise the Town Board of same. If the Town Board determines that the proposal is adequate based upon the recommendation of its professional consultant, the landowner's professional engineer or geologist can proceed with preparing and submitting a study that evaluates the accuracy of the Aquifer Protection Overlay as it relates to the landowner's property in question. Said study shall include data, findings and recommendations that support a particular Aquifer Protection Overlay boundary location.

C. Upon submission of the aforementioned study, the Town Board will refer the same to its consultant for its review, analysis and recommendations.

D. Within thirty-one (31) days of the Town Board's receipt of its consultant's analysis and recommendations, the Town Board shall determine whether to grant the request to adjust the Overlay boundaries as presented by the landowner, to deny such request or to

provide a modified adjustment of said boundaries as supported by the data and studies provided to the Town Board. In all cases other than a denial of the request, the Town Board shall institute such further proceedings, if necessary, to effectuate the adjustment of the Overlay boundaries.

E. There shall be no application fee charged for the process provided in this section, however, all consultant costs actually incurred by the Town may be charged to the landowner pursuant to Section 2.8.

ARTICLE 8 SPECIAL PERMITS

SECTION 8.1 Purpose and Applicability

8.1-1 Purpose

Pursuant to the land use policies and goals of the Town of Nassau, it is the policy of the Town of Nassau to balance the allowance and encouragement of a variety of uses of land and to foster economic opportunities within the municipal boundaries of the Town, provided that such uses do not unreasonably and adversely affect neighboring properties, the natural environment, the rural and historic character of the Town or the long-term development of the Town. Many uses are, therefore, permitted only upon issuance of a special permit by the Town Board (or, for certain uses, issuance of a special permit by the Planning Board where such authority is specifically delegated to the Planning Board in this Law) in order to ensure that these uses are appropriate to their surroundings and satisfy performance criteria on a case by case basis. In some instances, approval of a site plan by the Planning Board is also required. In such cases, the applicant may request that the procedures for the special permit and site plan approval be run concurrently and such request will not be unreasonably denied. For those uses where the Planning Board has jurisdiction to issue special use permits, the following provisions shall also apply and be followed by the Planning Board.

8.1-2 Applicability

Uses requiring special permits are listed for each Zoning District on the Schedule of Uses annexed to this Zoning Law as Schedule B. Accessory uses or structures used in connection with a special permit use shall be subject to the same special permit approval requirements as the principal structure or use.

SECTION 8.2 Required Plans & Submittals

Because the impact of special permit uses varies greatly, the information required to be submitted for a special permit may vary depending upon the scale, intensity, nature of the proposed use and its proposed location. An applicant for a special permit shall submit at least 1 original and 8 copies of the following together with whatever other information the Town Board deems appropriate:

A. A Town of Nassau Special Permit application form.

B. A plot plan drawn to scale with accurate dimensions providing information sufficient to enable the Board to make an informed decision, and an agricultural data statement as defined below.

C. A narrative describing the proposed use and operation.

D. A short-form or long-form SEQRA Environmental Assessment Form (EAF) with Part 1 fully completed by the applicant (a long-form EAF is required for all SEQRA Type I

Stormwater Management and Erosion Control Regulations

1.0 PURPOSE

Increased volumes of stormwater, contaminated stormwater runoff from impervious surfaces, and soil erosion and sedimentation are major causes of:

1) impairment of water quality and decreased flow in lakes, ponds, streams, rivers, wetlands and groundwater;
2) contamination of drinking water supplies;
3) erosion of stream channels;
4) alteration or destruction of aquatic and wildlife habitat;
5) flooding; and,
6) overloading or clogging of municipal catch basins and storm drainage systems.

The United States Environmental Protection Agency has identified sedimentation from land disturbance activities and polluted stormwater runoff from land development and redevelopment as major sources of water pollution, impacting drinking water supplies, natural habitats, and recreational resources. Regulation of activities that result in the disturbance of land and the creation of stormwater runoff is necessary for the protection of the Town of Dalton's water bodies and groundwater resources, to safeguard the health, safety, and welfare of the general public and protect the natural resources of the Town. These regulations address the issues mentioned above and as referenced in the *Stormwater Management and Erosion Control Bylaw of the Town of Dalton*.

2.0 DEFINITIONS

The following definitions shall apply in the interpretation and implementation of these Regulations. These Regulations may be amended to adopt additional definitions.

ABUTTER: The owner(s) of land abutting the activity.

APPLICANT: Any person, individual, partnership, association, firm, company, corporation, trust, authority, agency, department, or political subdivision, of the Commonwealth or the Federal government to the extent permitted by law requesting a land disturbance permit for proposed land disturbance activity.

AUTHORITY: The Town of Dalton Stormwater Management Commission or its authorized agent(s). The Dalton Stormwater Management Commission or its authorized agent(s) are responsible for coordinating the review, approval and permit process as defined in this Regulation. Other Boards and/or departments of the Town of Dalton, including (but not limited to) the Conservation Commission, Board of Health, and Highway Department, may participate in the review process as defined herein.

CALIPER (diameter in inches): American Association of Nurserymen standard for measurement of trunk size of nursery stock. Caliper of the trunk shall be measured at six (6) inches above the ground up to and including four (4) inch caliper trees, and twelve (12) inches above the ground for larger sizes.

CONSTRUCTION AND WASTE MATERIALS: Excess or discarded building or site materials, including but not limited to concrete truck washout, chemicals, litter and sanitary waste at a construction site that may adversely impact water quality.

CLEARING: Removal or causing to be removed, through either direct or indirect actions, trees, shrubs, or topsoil from a site, or any material change in the use or appearance of the land. Actions considered to be clearing include, but are not limited to: causing irreversible damage to roots or trunks; destroying the structural integrity of vegetation; or any filling, excavation, grading, or trenching in the root area of a tree which causes irreversible damage.

DETERMINATION: A written finding by the Stormwater Management Commission as to whether a site or the work proposed thereon is subject to the jurisdiction of the *Stormwater Management and Erosion Control Bylaw of the Town of Dalton*.

DETERMINATION OF SIGNIFICANCE: A written finding by the Stormwater Management Commission, after a public hearing, that the area on which the proposed work is to be done, or which the proposed work will alter, is significant to one or more of the interests identified in the *Stormwater Management and Erosion Control Bylaw of the Town of Dalton*.

DEVELOPMENT: The modification of land to accommodate a new use, revised use, or expansion of use, usually involving construction.

DISTURBANCE OF LAND: Any action that causes a change in the position, location, or arrangement of soil, sand, rock, gravel or similar earth material.

EROSION: The wearing away of the land surface by natural or artificial forces such as wind, water, ice, gravity, or vehicle traffic and the subsequent detachment and transportation of soil particles.

EROSION AND SEDIMENTATION CONTROL PLAN: A document containing narrative, drawings and details developed by a qualified professional engineer (PE) or a Certified Professional in Erosion and Sedimentation Control (CPESC), which includes best management practices, or equivalent measures designed to control surface runoff, erosion and sedimentation during pre-construction and construction related land disturbing activities.

ESTIMATED HABITAT OF RARE WILDLIFE AND CERTIFIED VERNAL POOLS: Habitats delineated for state-protected rare wildlife and certified vernal pools for use with the Wetlands Protection Act Regulations (310 CMR 10.00) and the Forest Cutting Practices Act Regulations (304 CMR 11.00).

GRADING: Changing the level or shape of the ground surface.

LAND-DISTURBING ACTIVITY: Any activity that causes a change in the position or location of soil, sand, rock, gravel, or similar earth material. Landscaping activities which involve greater than or equal to 500 sq. ft. are considered a land disturbing activity. Routine landscaping activities which involve less than 500 sq. ft. are not considered a land-disturbing activity for the purposes of this bylaw.

LAND DISTURBANCE PERMIT: A permit issued by the Stormwater Management Commission, after review of an application, plans, calculations, and other supporting documents, which is designed to protect the environment of the Town from the deleterious affects of increased volumes of stormwater, contaminated stormwater runoff from impervious surfaces, and soil erosion and sedimentation.

MASSACHUSETTS ENDANGERED SPECIES ACT: (G.L. c. 131A) and its implementing regulations at (321 CMR 10.00) which prohibit the “taking” of any rare plant or animal species listed as Endangered, Threatened, or of Special Concern.

MASSACHUSETTS STORMWATER MANAGEMENT POLICY: The Policy issued by the Department of Environmental Protection, and as amended, that coordinates the requirements prescribed by state regulations promulgated under the authority of the Massachusetts Wetlands Protection Act G.L. c. 131 § 40 and Massachusetts Clean Waters Act G.L. c. 21, §. 23-56. The Policy addresses stormwater impacts through implementation of performance standards to reduce or prevent pollutants from reaching water bodies and control the quantity of runoff from a site.

NOTIFICATION OF NON-SIGNIFICANCE: A written finding by the Stormwater Management Commission, after a public hearing, that the area on which the proposed work is to be done, or which the proposed work will alter, is not significant to any of the interests of the *Stormwater Management and Erosion Control Bylaw of the Town of Dalton*.

ONE HUNDRED YEAR FLOODPLAIN: An area delineated under the Federal Emergency Management Act (FEMA) indicating the extent of flooding as a result of a 100 year flood.

OPERATION AND MAINTENANCE PLAN: A plan setting up the functional, financial and organizational mechanisms for the ongoing operation and maintenance of a stormwater management system to insure that it continues to function as designed.

OWNER: A person with a legal or equitable interest in property.

PERSON: An individual, partnership, association, firm, company, trust, corporation, agency, authority, department or political subdivision of the Commonwealth or the federal government, to the extent permitted by law, and any officer, employee, or agent of such person.

PRE-CONSTRUCTION: All activity in preparation for construction.

PRE-DEVELOPMENT: The conditions that exist at the time that plans for the land development of a tract of land are submitted to the Stormwater Management Commission. Where phased development the existing conditions at the time prior to the first plan submission shall establish pre-development conditions.

POST-DEVELOPMENT: The conditions that reasonably may be expected or anticipated to exist after completion of the land development activity on a specific site or tract of land. Post development refers to the phase of a new development or redevelopment project after completion, and does not refer to the construction phase of a project.

PRIORITY HABITAT OF RARE SPECIES: Habitats delineated for rare plant and animal populations protected pursuant to the Massachusetts Endangered Species Act and its regulations.

REDEVELOPMENT: Any development, construction, alteration, rehabilitation, improvement expansion, demolition or phased projects that meets or exceeds 200 square feet of land disturbance on existing or proposed slopes less than or equal to 15 % or 43,560 square feet on existing or proposed slopes less than 15 % and where the existing land has been subject to previous development.

RUNOFF: Rainfall, snowmelt, or irrigation water flowing over the ground surface.

SEDIMENT: Mineral or organic soil material that is transported by wind or water, from its origin to another location; the product of erosion processes.

SEDIMENTATION: The process or act of deposition of sediment.

SITE: Any lot or parcel of land or area of property where land-disturbing activities are, were, or will be performed.

SLOPE: The incline of a ground surface expressed as a ratio of horizontal distance to vertical distance e.g. twenty (20) percent.

SOIL: Any earth, sand, rock, gravel, clay or similar material.

STABILIZATION: The use, singly or in combination, of mechanical, structural, or vegetative methods, to prevent or retard erosion.

STORMWATER: Stormwater runoff, snow melt runoff, and surface water runoff and drainage.

STORMWATER MANAGEMENT PLAN: A plan showing existing and proposed features on a site. This is required as part of the application for a Land Disturbance Permit.

STRIP: Any activity which removes the vegetative ground surface cover, including tree removal, clearing, grubbing, and storage or removal of topsoil.

VERNAL POOLS: Temporary bodies of freshwater which provide critical habitat for a number of vertebrate and invertebrate wildlife species.

WATERCOURSE: A natural or man-made channel through which water flows or a stream of water, including a river, brook, or underground stream (both intermittent and continuous).

WETLAND RESOURCE AREA: Areas specified in either the Massachusetts Wetlands Protection Act G.L. c. 131, § 40.

WETLANDS: Areas characterized by saturated or nearly saturated soils most of the year that are located between terrestrial (land-based) and aquatic (water-based) environments, including

freshwater marshes around ponds and channels (rivers and streams), common names include marshes, swamps and bogs.

3.0 AUTHORITY

A) The Regulations contained herein have been adopted by the Stormwater Management Commission in accordance with the *Town of Dalton's Stormwater Management and Erosion Control Bylaw.*

B) Nothing in these Regulations is intended to replace or be in derogation of the requirements of the Town of Dalton's Zoning Bylaws and any Rules and Regulations adopted thereunder unless these regulations are more stringent.

C) These Stormwater Regulations may be periodically amended by the Stormwater Management Commission in accordance with the procedures outlined in Section 5.0 (B) of the *Town of Dalton's Stormwater Management and Erosion Control Bylaw*.

4.0 ADMINISTRATION

The Stormwater Management Commission shall have the responsibility to administer, implement and enforce these Regulations. Projects and activities approved by the Stormwater Management Commission shall be deemed in compliance with the intent and provisions of these Stormwater Management and Erosion Control Regulations.

5.0 PROCEDURES

The issuance of a Land Disturbance Permit is required prior to any activity disturbing 43,560 square feet or more of land, or disturbing an area greater than or equal to 200 square feet on existing or proposed slopes greater than or equal to 15 %, or as listed in Section 4 of the Stormwater and Erosion Control Bylaw. The site owner or their Agent shall file with the Stormwater Management Commission for a Land Disturbance Permit. In either case, while application may be made by a representative, the permittee must be the owner of the site.

A. Determination of Non-significance: Any applicant may submit a request for a determination of non-significance. Such a request shall be accompanied by an explanation or documentation supporting a request for a determination of non-significance and demonstrating that the proposed work is not significant to any of the interests of the *Stormwater Management and Erosion Control Bylaw of the Town of Dalton* and that strict application of the bylaw does not further the purposes or objectives of the bylaw. The Stormwater Management Commission will prepare a written finding that the area on which proposed work is to be done, or which the proposed work will alter, is either significant or not significant to one or more of the interests identified in the *Stormwater Management and Erosion Control Bylaw of the Town of Dalton*. If a project is deemed significant by the Stormwater Management Commission the applicant must file for a full land disturbance permit.

B. Segmentation: In determining whether a Project requires a land disturbance permit, and during review, the Stormwater Management Commission shall consider the entirety of the Project, including any likely future expansion, and not separate phases or segments thereof. The Applicant may not phase or segment a Project to evade, defer or curtail review. The Applicant and the enforcement authority shall consider all circumstances as to whether various work or activities constitute one Project, including but not limited to: whether the

work or activities, taken together, comprise a common plan or independent undertakings, regardless of whether there is more than one Applicant; any time interval between the work or activities; and whether the environmental impacts caused by the work or activities are separable or cumulative.

C. Determination of Completeness. The Stormwater Management Commission shall make a determination as to the completeness of the application and adequacy of the materials submitted within 5 business days. No review shall take place until the application has been found to be complete.

D. Land Disturbance Applications: An application for a Land Disturbance permit shall be made to the Stormwater Management Commission in a form and containing information as specified in the Regulations adopted by the Stormwater Management Commission and shall be accompanied by payment of the appropriate application and review fees. The fee shall be collected by the Stormwater Management Commission prior to any review. Applicants shall submit an additional complete application to the Commission which is currently reviewing other permits for the same project.

1) Land Disturbance Permit Application package shall include:
   a) completed Application Form with original signatures of all owners;
   b) a list of abutters, certified by the Assessors Office;
   c) three (3) copies of the Erosion and Sediment Control Plan as specified in Section 5.0 (E) of these regulations;
   d) three (3) copies of the Stormwater Management Plan as specified in Section 5.0 (F) of these regulations;
   e) three (3) copies of the Operation and Maintenance Plan as specified in Section 5.0 (G) of these regulations,
   f) payment of the application and review fees; and,
2) One (1) copy each of the Application Form, the Stormwater Management Plan, the Operation & Maintenance Plan and the list of abutters must be filed with the Town Clerk for all Land Disturbance Permits. The Land Disturbance Permit Application Package will also be submitted to any other Boards or Commissions reviewing the project.

E. Erosion and Sediment Control Plan. The Erosion and Sediment Control Plan shall contain sufficient information to describe the nature and purpose of the proposed development, pertinent conditions of the site and the adjacent areas, and proposed erosion and sedimentation controls. The applicant shall submit such material as is necessary to show that the proposed development will comply with the design standards and contain the information listed below.

1) Standards
   The Erosion and Sediment Control Plan shall be designed to meet the Massachusetts Stormwater Management Policy.
2) Contents
   The Erosion and Sediment Control Plan shall contain the following information:

a) Names, addresses, and telephone numbers of the owner, applicant, and person(s) or firm(s) preparing the plan.

b) Title, date, north arrow, names of abutters, scale (1"=20' or 1"=40'), legend, and locus map (1"=800').

c) Location and description of natural features including:

   i. Watercourses and water bodies, wetland resource areas, riparian zones and all floodplain information, including the 100-year flood elevation based upon the most recent Flood Insurance Rate Map, or as calculated by a professional engineer for areas not assessed on these maps;

   ii. Existing vegetation of various kinds including tree lines, shrub layer, ground cover and herbaceous vegetation, and trees with a caliper twelve inches or larger, noting specimen trees and forest communities;

   iii. Habitats mapped by the Massachusetts Natural Heritage & Endangered Species Program as Estimated Habitats of Rare Wildlife, Certified Vernal Pools and Potential Vernal Pools, and Priority Habitats of Rare Species within five hundred (500) feet of any construction activity.

d) Lines of existing abutting streets showing drainage and driveway locations and curb cuts.

e) Existing soils (type, hydrologic group, erodibility) and the volume and nature of imported soil materials.

f) Topographical features including existing and proposed contours at intervals no greater than two (2) feet with spot elevations provided when needed.

g) Steep slopes for pre-development and post-development conditions, delineated by 0%-15%, 15%-25%, and over 25%.

h) Surveyed property lines showing distances and monument locations, all existing and proposed easements, rights-of-way, and other encumbrances, the size of the entire parcel, and the delineation and number of square feet of the land area to be disturbed.

i) Drainage patterns, watersheds and subwatersheds, with calculations of proposed land disturbance within each subwatershed and areas of soil to be disturbed in each watershed throughout the duration of the proposed land disturbance activity.

j) Location and details of erosion and sediment control measures with a narrative of the construction sequence/phasing of the project, including both operation and maintenance for structural and non-structural measures, interim grading, and material stockpiling areas.

k) Path and mechanism to divert uncontaminated water around disturbed areas, to the maximum extent practicable.

l) Location and description of and implementation schedule for temporary and permanent seeding, vegetative controls, and other temporary and final stabilization measures.

m) A description of construction and waste materials expected to be stored on-site. The Plan shall include a description of controls to reduce pollutants from these materials, including storage practices to minimize exposure of the materials to stormwater, and spill prevention and response.

n) A description of provisions for phasing the project where 43,560 square feet of contiguous area or greater is to be altered or disturbed.

o) Plans, reports, and calculations must be stamped and certified by a qualified professional engineer (PE) or a Certified Professional in Erosion and Sedimentation Control (CPESC).

p) Such other information as is required by the Stormwater Management Commission.

F. Stormwater Management Plan. The Stormwater Management Plan shall contain sufficient information to describe the nature and purpose of the proposed development/redevelopment, pertinent conditions of the site and the adjacent areas, and proposed best management practices for the permanent management and treatment of stormwater. The Stormwater Management Plan shall contain sufficient information for the Stormwater Management Commission to evaluate the environmental impact, effectiveness, and acceptability of the measures proposed by the applicant for reducing adverse impacts from stormwater. The Plan shall be designed to meet the Massachusetts Stormwater Management Policy. The Stormwater Management Plan shall fully describe the project in drawings, and narrative. The applicant shall submit such material as is required below.

1) Standards
The Stormwater Management Plan shall be prepared in accordance with the Massachusetts Stormwater Management Policy.

2) Stormwater Management Plan Requirements.
The Stormwater Management Plan shall contain the following information:

a) A locus map, at a scale of 1"=800'.

b) The existing zoning, and land use at the site.

c) The proposed land use.

d) The location(s) of existing and proposed easements.

e) The location of existing and proposed utilities.

f) The site's existing and proposed topography with contours at 2 foot intervals.

g) The existing site hydrology.

h) A description & delineation of existing stormwater conveyances, impoundments, and wetlands on or adjacent to the site or into which stormwater flows.

i) A delineation of 100-year flood plains, if applicable.

j) An estimate made by a Licensed Soil Evaluator of seasonal high groundwater elevation in each area to be used for stormwater retention, detention, or infiltration.

k) The existing and proposed vegetation and ground surfaces with runoff coefficient for each.

l) A drainage area map showing pre and post construction watershed boundaries, drainage area and stormwater flow paths.

m) A description and drawings of all components of the proposed drainage system including:

i. locations, cross sections, and profiles of all brooks, streams, drainage swales and their method of stabilization,

ii. all measures for the detention, retention or infiltration of water,

iii. all measures for the protection of water quality,

iv. the structural details for all components of the proposed drainage systems and stormwater management facilities,

v. notes on drawings specifying materials to be used, construction specifications, and typicals, and

vi. expected hydrology with supporting calculations.

n) The proposed improvements including location of buildings or other structures, impervious surfaces, and drainage facilities, if applicable.

o) The timing, schedules, and sequence of development including clearing, stripping, rough grading, construction, final grading, and vegetative stabilization.

p) A maintenance schedule for the period of construction.

q) Any other information requested by the Stormwater Management Commission.

G. Operation and Maintenance Plans. An Operation and Maintenance Plan (O&M Plan) for the permanent stormwater management system is required at the time of application for all projects. The maintenance plan shall be designed to ensure compliance with these Regulations and that the Massachusetts Surface Water Quality Standards contained in 314 CMR 4.00 are met in all seasons and throughout the life of the system. The Stormwater Management Commission shall make the final decision of what maintenance option is appropriate in a given situation. The Commission will consider natural features, proximity of site to water bodies and wetlands, extent of impervious surfaces, size of the site, the types of stormwater management structures, and potential need for ongoing maintenance activities when making this decision. Once approved by the Stormwater Management Commission the Operation and Maintenance Plan shall be recorded at the Berkshire County Registry of Deeds by the permittee, shall remain on file with the Commission and shall be an ongoing requirement. The Operation and Maintenance Plan shall conform to the requirements listed below. Stormwater management easements shall be provided by the property owner(s) and shall be sufficient in location and extent to carry out the required maintenance.

1) Operation and Maintenance Plan Requirements
An Operation and Maintenance Plan shall include:

a) The name(s) of the owner(s) for all components of the system

b) Maintenance agreements that specify:

i. The names and addresses of the person(s) responsible for operation and

maintenance.

ii. The person(s) responsible for financing maintenance and emergency repairs.

iii. A Maintenance Schedule for all drainage structures, including swales and ponds.

iv. A list of easements with the purpose and location of each.

v. The signature(s) of the owner(s).

2) Stormwater Management Easement(s).

a) Stormwater management easements shall be provided by the property owner(s) as areas are necessary for:

i. access for facility inspections and maintenance,

ii. preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities, including flood routes for the 100-year storm event; and

iii. direct maintenance access by heavy equipment to structures requiring regular cleanout maintenance.

b) The purpose of each easement shall be specified in the maintenance agreement signed by the property owner.

c) Stormwater management easements are required for all areas used for off-site stormwater control, unless a waiver is granted by the Stormwater Management Commission.

d) Easements shall be recorded with the Berkshire County Registry of Deeds prior to issuance of a Certificate of Completion by the Stormwater Management Commission.

3) Changes to Operation and Maintenance Plans

a) The owner(s) of the stormwater management system must notify the Stormwater Management Commission or its Agent of changes in ownership or assignment of financial responsibility.

b) The maintenance schedule in the Maintenance Agreement may be amended to achieve the purposes of this Stormwater Management and Erosion Control Bylaw and Regulations by mutual agreement of the Stormwater Management Commission and the Responsible Parties. Amendments must be in writing and signed by all Responsible Parties. Responsible Parties shall include owner(s), persons with financial responsibility, and persons with operational responsibility. Once the amended Plan is signed the Stormwater Management Commission shall file it at the Registry of Deeds at the expense of the current owner(s).

H. Information Requests: The Stormwater Management Commission may request such additional information as is necessary to enable the Commission to determine whether the proposed land disturbance activity will protect water resources and meet the objectives of the Stormwater Management and Erosion Control Bylaw and Regulations.

I. Project Changes. The permittee, or their Agent, must notify the Stormwater Management

Commission in writing of any change or alteration of a land-disturbing activity before the change or alteration occurs. If the Commission determines that the change or alteration is significant, the Commission may require that an amended application or a full application be filed in accordance with this Section. If any change or alteration from the Land Disturbance Permit occurs during land disturbing activities, including significant changes in schedule, the Commission may require the installation of interim erosion and sedimentation control measures before considering the change or alteration.

J. Review Fee Schedule

A review fee of sixty dollars ($60.00) shall be submitted with the application for a Land Disturbance Permit. The applicant is responsible for fees associated with the required legal notice.

6.0 WAIVERS

A. The Stormwater Authority may waive strict compliance with these Regulations if such action is allowed by federal, state and local statutes and/or regulations; is in the public interest; and is consistent with the purposes of the *Stormwater Management and Erosion Control Bylaw*.

B. Any applicant may submit a written request for a waiver, accompanied by supporting information explaining how the waiver will comply with the purposes of the *Stormwater Management and Erosion Control Bylaw*.

C. All waiver requests shall be considered within 45 days, and the Stormwater Management Commission will provide a written decision. If additional information is required, the Stormwater Management Commission may extend the review period. If the applicant objects to an extension, or fails to provide requested information, the waiver request may be denied without prejudice by the Stormwater Management Commission.

7.0 INSPECTION AND SITE SUPERVISION

All inspections will be conducted by an Agent of the Stormwater Management Commission.

A. Preconstruction Meeting. Prior to clearing, excavation, construction, or any land disturbing activity requiring a permit, the applicant, the applicant's technical representative, the general contractor, pertinent subcontractors, and any person with authority to make changes to the project, shall meet with the Stormwater Management Commission or a designated Agent to review the permitted plans and proposed implementation.

B. Inspection. The Stormwater Management Commission or a designated Agent shall make inspections as hereinafter required and shall either approve that portion of the work completed or shall notify the permittee wherein the work fails to comply with the approved plans and any conditions of approval. One copy of the permit plans and conditions of approval signed by the Stormwater Management Commission shall be maintained at the site during the progress of the work. A copy of the NPDES Construction General Permit and Stormwater Pollution Prevention Plan (if applicable) shall be kept on site as well. In order to obtain inspections, the permittee shall notify the Agent of the Commission at least three (3) working days before each of the following events:

1) Erosion and sediment control measures are in place and stabilized;
2) Rough Grading has been substantially completed;
3) Final Grading has been substantially completed;
4) Bury Inspection: prior to backfilling of any underground drainage or stormwater conveyance structures.
5) Close of the Construction Season; and
6) Final Landscaping (permanent stabilization) and project final completion.

C. Final Inspection. After the stormwater management system has been constructed the applicant must submit a record plan detailing the actual stormwater management system as installed. The applicant must submit an explanation detailing any differences between the plans approved with the permit and the as-built plans. This explanation must be stamped by a Professional Engineer. The Stormwater Management Commission or a designated Agent shall inspect the system to confirm its "as-built" features. This inspector shall also evaluate the effectiveness of the system in an actual storm. If the inspector finds the system to be adequate he shall so report to the Commission which will issue a Certificate of Completion.

If the system is found to be inadequate by virtue of physical evidence of operational failure, even though it was built as called for in the Stormwater Management Plan, it shall be corrected by the permittee before the performance guarantee is released. Examples of inadequacy shall be limited to: errors in the infiltrative capability, errors in the maximum groundwater elevation, failure to properly define or construct flow paths, or erosive discharges from basins.

D. Permittee Inspections. The permittee or his/her Agent shall conduct and document inspections of all control measures no less than weekly or as specified in the permit, and prior to and following anticipated storm events. The purpose of such inspections will be to determine the overall effectiveness of the Erosion and Sedimentation Control Plan, and the need for maintenance or additional control measures. The permittee or his/her Agent shall submit monthly reports to the Stormwater Management Commission or a designated Agent in a format approved by the Commission. The Commission may require, as a condition of approval, that an Environmental Site Monitor, approved by the Commission, be retained by the applicant to conduct such inspections and prepare and submit such reports to the Commission or its designated Agent.

E. Access Permission. To the extent permitted by state law, and as authorized by the owner at the time of the application or other party in control of the property, the Stormwater Management Commission, its Agents, officers, and employees may enter upon privately owned property for the purpose of performing their duties under this Regulation and may make or cause to be made such examinations, surveys or sampling as the Commission deems reasonably necessary to determine compliance with the permit.

8.0 FINAL REPORTS

Upon completion of the work, the permittee shall submit a report (including certified as-built

construction plans) from a Professional Engineer (P.E.) or surveyor, certifying that all erosion and sediment control devices, and approved changes and modifications, have been completed in accordance with the conditions of the approved permit. Any discrepancies should be noted in the cover letter.

9.0 CERTIFICATE OF COMPLETION

The Stormwater Management Commission will issue a letter certifying completion upon receipt and approval of the final reports and/or upon otherwise determining that all work of the permit has been satisfactorily completed in conformance with this Bylaw. The Certificate of Completion shall be recorded at the Registry of Deeds by the Owner(s).

ARTICLE XXIX
Stormwater Management and Erosion Control Bylaw
FINAL 9/28/06

1.0 PURPOSE

Regulation of discharges to the municipal separate storm sewer system (MS4) is necessary for the protection of Dalton's water bodies and groundwater, and to safeguard the public health, safety, welfare and the environment. Increased and contaminated stormwater runoff associated with developed land uses and the accompanying increase in impervious surface are major causes of impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands and groundwater.

Increased volumes of stormwater, contaminated stormwater runoff from impervious surfaces, and soil erosion and sedimentation are major causes of:

1) impairment of water quality and decreased flow in lakes, ponds, streams, rivers, wetlands and groundwater;
2) contamination of drinking water supplies;
3) erosion of stream channels;
4) alteration or destruction of aquatic and wildlife habitat;
5) flooding; and,
6) overloading or clogging of municipal catch basins and storm drainage systems.

The United States Environmental Protection Agency has identified sedimentation from land disturbance activities and polluted stormwater runoff from land development and redevelopment as major sources of water pollution, impacting drinking water supplies, natural habitats, and recreational resources. Regulation of activities that result in the disturbance of land and the creation of stormwater runoff is necessary for the protection of the Town of Dalton's water bodies and groundwater resources, to safeguard the health, safety, and welfare of the general public and protect the natural resources of the Town. Therefore, this bylaw establishes stormwater management standards for the temporary and final conditions that result from development and redevelopment projects to minimize adverse impacts offsite and downstream which would be born by abutters, townspeople and the general public.

The **objectives** of this Bylaw are to:

1) Protect ground water and surface water to prevent degradation of drinking water supply
2) Require practices that eliminate soil erosion and sedimentation and control the volume and rate of stormwater runoff resulting from land disturbing activities;
3) Promote infiltration and the recharge of groundwater;
4) Ensure that soil erosion and sedimentation control measures and stormwater runoff control practices are incorporated into the site planning and design process and are implemented and maintained;
5) Require practices to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at a construction site that may cause adverse impacts to water quality;

6) To prevent pollutants from entering the Dalton municipal separate storm sewer system (MS4) and to minimize discharge of pollutants from the MS4;
7) To ensure adequate long-term operation and maintenance of structural stormwater best management practices so that stormwater structures work as designed;
8) Comply with state and federal statutes and regulations relating to stormwater discharges; and
9) Establish Dalton's legal authority to ensure compliance with the provisions of this by-law through inspection, monitoring, and enforcement.

2.0 DEFINITIONS

The following definitions shall apply in the interpretation and implementation of this bylaw.

ABUTTER: The owner(s) of land abutting the activity.

APPLICANT: Any person, individual, partnership, association, firm, company, corporation, trust, authority, agency, department, or political subdivision, of the Commonwealth or the Federal government to the extent permitted by law requesting a soil erosion and sediment control permit for proposed land-disturbance activity.

AUTHORITY: The Dalton Stormwater Management Commission or its authorized agent(s) are responsible for coordinating the review, approval and permit process as defined in this Regulation. Other Boards and/or departments of the Town of Dalton, including (but not limited to) the Conservation Commission, Board of Health, and Highway Department, may participate in the review process as defined herein.

BEST MANAGEMENT PRACTICES: Structural, non-structural, and managerial techniques that are recognized to be the most effective and practical means to prevent and reduce nonpoint sources of pollution.

CLEARING: Removal or causing to be removed, through either direct or indirect actions, trees, shrubs, or topsoil from a site, or any material change in the use or appearance of the land. Actions considered to be clearing include, but are not limited to: causing irreversible damage to roots or trunks; destroying the structural integrity of vegetation; or any filling, excavation, grading, or trenching in the root area of a tree which causes irreversible damage.

DETERMINATION: A written finding by the Stormwater Management Commission as to whether a site or the work proposed thereon is subject to the jurisdiction of the *Stormwater Management and Erosion Control Bylaw of the Town of Dalton*.

DETERMINATION OF SIGNIFICANCE: A written finding by the Stormwater Management Commission that the area on which the proposed work is to be done, or which the proposed work will alter, is significant to one or more of the interests identified in the *Stormwater Management and Erosion Control Bylaw of the Town of Dalton*.

DEVELOPMENT: The modification of land to accommodate a new use, revised use, or expansion of use, usually involving construction.

DISTURBANCE OF LAND: Any action that causes a change in the position, location, or arrangement of soil, sand, rock, gravel or similar earth material.

EROSION: The wearing away of the land surface by natural or artificial forces such as wind, water, ice, gravity, or vehicle traffic and the subsequent detachment and transportation of soil particles.

EROSION AND SEDIMENTATION CONTROL PLAN: A document containing narrative, drawings and details developed by a qualified professional engineer (PE) or a Certified Professional in Erosion and Sedimentation Control (CPESC), which includes best management practices, or equivalent measures designed to control surface runoff, erosion and sedimentation during pre-construction and construction related land disturbing activity activities.

GRADING: Changing the level or shape of the ground surface.

IMPERVIOUS SURFACE: Land covering, such as concrete or asphalt, that does not allow water to pass through it into the ground.

LAND-DISTURBING ACTIVITY: Any activity that causes a change in the position or location of soil, sand, rock, gravel, or similar earth material and meets or exceeds 43,560 square feet, or 200 square feet of land disturbance on existing or proposed slopes greater than or equal to 15 percent.

LAND DISTURBANCE PERMIT: A permit issued by the Stormwater Management Commission, after review of an application, plans, calculations, and other supporting documents, which is designed to protect the environment of the Town from the deleterious affects of increased volumes of stormwater, contaminated stormwater runoff from impervious surfaces, and soil erosion and sedimentation.

MASSACHUSETTS STORMWATER MANAGEMENT POLICY: The Policy issued by the Department of Environmental Protection, and as amended, that coordinates the requirements prescribed by state regulations promulgated under the authority of the Massachusetts Wetlands Protection Act G.L. c. 131 § 40 and Massachusetts Clean Waters Act G.L. c. 21, §. 23-56. The Policy addresses stormwater impacts through implementation of performance standards to reduce or prevent pollutants from reaching water bodies and control the quantity of runoff from a site.

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4): Any pipe, ditch or gully, or system of pipes, ditches, or gullies, that is owned or operated by a governmental entity and used for collecting and conveying storm water.

NOTIFICATION OF NON-SIGNIFICANCE: A written finding by the Stormwater Management Commission that the area on which the proposed work is to be done, or which the proposed work will alter, is not significant to any of the interests of the *Stormwater Management and Erosion Control Bylaw of the Town of Dalton*.

ONE HUNDRED YEAR FLOODPLAIN: An area delineated under the Federal Emergency Management Act (FEMA) indicating the extent of flooding as a result of a 100 year flood.

OPERATION AND MAINTENANCE PLAN: A plan setting up the functional, financial and organizational mechanisms for the ongoing operation and maintenance of a stormwater management system to insure that it continues to function as designed.

OWNER: A person with a legal or equitable interest in property.

PERMEABILITY: The property or condition of being permeable; especially having pores or openings that permit liquids or gases to pass through.

PERSON: An individual, partnership, association, firm, company, trust, corporation, agency, authority, department or political subdivision of the Commonwealth or the federal government, to the extent permitted by law, and any officer, employee, or agent of such person.

PRE-CONSTRUCTION: All activity in preparation for construction.

REDEVELOPMENT: Any development, construction, alteration, rehabilitation, improvement expansion, demolition or phased projects that meets or exceeds 200 square feet of land disturbance on existing or proposed slopes equal to or greater than 15 % and where the existing land has been subject to previous development or that meets or exceeds 43,560 square feet and where the existing land has been subject to previous development.

RUNOFF: Rainfall, snowmelt, or irrigation water flowing over the ground surface.

SEDIMENT: Mineral or organic soil material that is transported by wind or water, from its origin to another location; the product of erosion processes.

SEDIMENTATION: The process or act of deposition of sediment.

SITE: Any lot or parcel of land or area of property where land-disturbing activities are, were, or will be performed.

SLOPE: The incline of a ground surface expressed as a ratio of horizontal distance to vertical distance e.g. twenty (20) percent.

SOIL: Any earth, sand, rock, gravel, clay or similar material.

STORMWATER: Stormwater runoff, snow melt runoff, and surface water runoff and drainage.

STORMWATER MANAGEMENT PLAN: A plan showing existing and proposed features on a site. This is required as part of the application for a Land Disturbance Permit.

WETLANDS: Areas characterized by saturated or nearly saturated soils most of the year that are located between terrestrial (land-based) and aquatic (water-based) environments, including freshwater marshes around ponds and channels (rivers and streams), common names include marshes, swamps and bogs.

3.0 AUTHORITY

This bylaw is adopted under authority granted by the Home Rule Amendment of the Massachusetts Constitution, the Home Rule statutes, and pursuant to the regulations of the Federal Clean Water Act found at 40 CFR 122.34

4.0 APPLICABILITY

This Bylaw shall apply to all land-disturbing activities within the jurisdiction of the Town of Dalton. Except as permitted by the *Stormwater Management Commission* in a Land

Disturbance Permit or as otherwise provided in this Bylaw, no person shall perform any activity that results in land disturbance as detailed in Section 4A.

A. Regulated Activities

Regulated activities shall include, but not be limited to:

1) Land disturbance equal to or greater than 43,560 square feet, associated with construction or reconstruction of structures;
2) Development or redevelopment involving multiple separate activities in discontinuous locations or on different schedules if the activities are part of a larger common plan of development that all together disturbs 43,560 square feet or more of land;
3) Paving or other change in surface material over an area of 43,560 square feet or more causing a significant reduction of permeability or increase in runoff;
4) Construction of a new drainage system or alteration of an existing drainage system or conveyance serving a drainage area of more than 43,560 square feet;
5) Any other activity altering the surface of an area equal to or greater than 43,560 square feet that will, or may, result in increased stormwater runoff flowing from the property into a public way or the municipal storm drain system; OR
6) Land disturbance where there is a 15% or greater slope and where the land disturbance is greater than or equal to 200 square feet within the sloped area.

B. Exempt Activities

The following activities are exempt from the requirements of this Bylaw:

1) Normal maintenance and improvement of land in agricultural use as defined by the Wetlands Protection Act regulation 310 CMR 10.04;
2) Maintenance of existing landscaping, gardens or lawn areas associated with a single family dwelling:
3) The construction of fencing that will not substantially alter existing terrain or drainage patterns;
4) Land disturbance activities that are wholly subject to jurisdiction under the Wetlands Protection Act and demonstrate compliance with the Massachusetts Stormwater Management Policy as reflected in an Order of Conditions issued by the Conservation Commission:
5) Construction of utilities (gas, water, electric, telephone, etc.) other than drainage, which will not alter terrain, ground cover, or drainage patterns, the reconstruction of or resurfacing of any public way; the construction and associated grading of a street that has been approved by the Planning Board;
6) For the removal of earth products undertaken in connection with a sand, gravel or similar enterprise where such activity is allowed by zoning;
7) Any logging operation with a cutting plan approved by the state forester;
8) Emergency repairs to any utilities (gas, water, electric, telephone, etc.), stormwater management facility or practice that poses a threat to public health or safety, or as deemed necessary by the Planning Board;
9) Any work or projects for which all necessary approvals and permits have been issued before the effective date of this Bylaw.

5.0 RESPONSIBILITIES FOR ADMINISTRATION

A. Responsibility

A Stormwater Management Commission shall be established to administer and enforce this bylaw. The Stormwater Management Commission shall consist of nine members. The Building Inspector and the Department of Highway Department Superintendent shall serve ex-officio. Seven additional members shall be recommended for appointment by the Town Manager and subject to the Select Board's ratification: a member of the Conservation Commission, a member of the Planning Board, a member of the Board of Health, a member of the Select Board and three other members. The Commission shall annually vote for a Chair, who shall preside at meetings, a Vice-Chair who shall preside at meetings in the absence of the Chair and a Clerk or Recording Secretary who shall record minutes of the Commission meetings. The Clerk need not be a member of the Commission. Any powers granted to or duties imposed upon the Stormwater Management Commission may be delegated to its employees and/or agents.

B. Rules and Regulations

The Stormwater Management Commission may adopt, and periodically amend rules and regulations relating to receipt and content of Land Disturbance permit applications; review time periods, permit terms, conditions, additional definitions, enforcement, fees, procedures and administration of this Bylaw, after conducting a public hearing to receive comments on any proposed revisions. Such hearing dates shall be advertised in a newspaper of general local circulation, at least fourteen (14) days prior to the hearing date. After public notice and hearing, the Stormwater Management Commission may adopt by majority vote rules and regulations. Failure by the Commission to promulgate such rules and regulations shall not have the effect of suspending or invalidating this Bylaw.

6.0 PERMITS & PROCEDURES

Permit Procedures and Requirements shall be defined and included as part of any rules and regulations promulgated as permitted under Section 5B of this Bylaw.

A. The Stormwater Management Commission and its agents shall review all applications for a land disturbance permit, conduct inspections, issue a final permit and conduct any necessary enforcement action.

B. The Stormwater Management Commission will refer to the policy, criteria and information including specifications and standards of the latest edition of the Massachusetts Stormwater Management Policy.

C. Any applicant may submit a request for a determination of non-significance. Such a request shall be accompanied by an explanation or documentation supporting a request for a determination of non-significance and demonstrating that the proposed work is not significant to any of the interests of the *Stormwater Management and Erosion Control Bylaw of the Town of Dalton* and that strict application of the by-law does not further the purposes or objectives of this bylaw.

   1) All requests for determination of non-significance shall be discussed and a decision will be made by the Stormwater Management Commission within 14 days of receiving the request in writing.

   2) If in the Stormwater Management Commission's opinion, additional time or information is required for review of request for determination of non-significance,

the Stormwater Management Commission may continue a consideration of the request by an additional 7 days. In the event the applicant objects to a continuance, or fails to provide requested information, the request shall be denied.

3) The Stormwater Management Commission will prepare a written finding that the area on which the proposed work is to be done, or which the proposed work will alter, is either significant or not significant to one or more of the interests identified in the *Stormwater Management and Erosion Control Bylaw of the Town of Dalton*. If a project is deemed significant by the Stormwater Management Commission the applicant must file for a full land disturbance permit.

D. A completed application for a Land Disturbance Permit shall be filed with the Stormwater Management Commission. A permit must be obtained prior to the commencement of land disturbing activity as described under Section 4A of this Bylaw. The Land Disturbance Permit Application shall include:

1) A completed Application Form with original signatures of all owners;

2) A list of abutters, certified by the Assessors Office;

3) Payment of the application and review fees; and

4) One (1) copy each of the Application Form and the list of abutters filed with the Town Clerk.

E. A public hearing shall be held by the Stormwater Management Commission within 21 days of the receipt of the minimal submission requirements as established under Section 6D of this bylaw.

F. The Stormwater Management Commission shall publish a notice of the time and place of said hearing at the expense of the applicant, not less than five days prior to the public hearing, by publication in a newspaper of general circulation in the Town of Dalton.

G. The Land Disturbance Permit application shall be available for inspection by the public during normal business hours at the Town Hall for a minimum of 5 business days from the notice. The public may submit their comments within the time that the Land Disturbance Permit is available for inspection. Comments may be submitted to the Town Hall during regular business hours.

H. The Stormwater Management Commission shall take final action on an Application within 21 days of the close of the public hearing if review from Conservation Commission or Planning Board is not required. Failure to take action shall be deemed to be constructive approval of said Application. Upon certification by the Town Clerk that the allowed time has passed without the Stormwater Management Commission's action, the Land Disturbance Permit shall be issued by the Stormwater Management Commission.

I. No permit shall be issued by the Stormwater Management Commission for projects that are actively under review or pending decisions from the Conservation Commission or the Planning Board until those decisions have been concluded.

J. The Stormwater Management Commission shall take final action on an Application within 21 days of receiving final written decision(s) from Conservation Commission and/or Planning Board if the project was under review by the Conservation Commission and/or the Planning Board. Failure to take action shall be deemed to be constructive approval of said Application. Upon certification by the Town Clerk that the allowed time has passed without the Stormwater Management Commission's action, the Land Disturbance Permit shall be issued by the Stormwater Management Commission.

K. Filing an application for a land disturbance permit grants the Stormwater Management Commission or its agents, permission to enter the site to verify the information in the application and to inspect for compliance with permit conditions.

L. The Stormwater Management Commission may:

1) Approve the Application and issue a permit if it finds that the proposed plan will protect water resources and meets the objectives and requirements of this Bylaw;

2) Approve the Application and issue a permit with conditions, modifications, requirements for operation and maintenance requirements of permanent structural BMPs, designation of responsible party, or restrictions that the Stormwater Management Commission determines are required to ensure that the project will protect water resources and will meet the objectives and requirements of this Bylaw; or

3) Disapprove the application and deny a permit if it finds that the proposed plan will not protect water resources or fails to meet the objectives and requirements of this Bylaw. If the Stormwater Management Commission finds that the applicant has submitted insufficient information to describe the site, the work, or the effect of the work on water quality and runoff volume, the Stormwater Management Commission may disapprove the application, denying a permit.

M. Appeals of Action by the Stormwater Management Commission. A decision of the Stormwater Management Commission shall be final. Further relief shall be to a court of competent jurisdiction. The remedies listed in this Bylaw are not exclusive of any other remedies available under any applicable federal, state or local law.

7.0 FEES

The Stormwater Management Commission shall establish fees to cover expenses connected with application review and monitoring permit compliance. The fees shall be sufficient to cover professional staff.

8.0 Waivers

A. The Stormwater Management Commission will determine applicability and grant a waiver to compliance with this bylaw. The Stormwater Management Commission may waive strict compliance with any requirement of this by-law or the rules and regulations promulgated hereunder, where:

1) such action is allowed by federal, state and local statutes and/or regulations, and

2) is in the public interest, and

3) is not inconsistent with the purpose and intent of this by-law.

9.0 ENFORCEMENT

A. The Stormwater Management Commission, or its authorized agent shall enforce this Bylaw, its regulations, orders, violation notices, and enforcement orders, and may pursue all civil and criminal remedies for such violations.

B. The Stormwater Management Commission, or its authorized agent may issue a written order to enforce the provisions of this Bylaw or the regulations thereunder, which may include:

1) a requirement to cease and desist from the land-disturbing activity until there is

compliance with the Bylaw or provisions of the land-disturbance permit;

2) maintenance, installation or performance of additional erosion and sediment control measures;

3) monitoring, analyses, and reporting;

4) remediation of erosion and sedimentation resulting directly or indirectly from the land-disturbing activity;

5) compliance with the Operation and Maintenance Plan.

C. Any person who violates any provision of this Bylaw, regulation, order or permit issued there under, shall be punished by a fine of not more than $300.00. Each day or part thereunder that such violation occurs or continues shall constitute a separate offense.

D. As an alternative to criminal prosecution or civil action, the Town of Dalton may elect to utilize the non-criminal disposition procedure set forth in G.L. Ch. 40, §21D, which has been adopted by the Town in Sec. 15.8.2 of the general bylaws, in which case the Stormwater Management Commission or authorized agent shall be the enforcing person. The penalty for each violation shall be $300.00. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

10.0 SEVERABILITY

If any provision, paragraph, sentence, or clause of this Bylaw shall be held invalid for any reason, all other provisions shall continue in full force and effect.

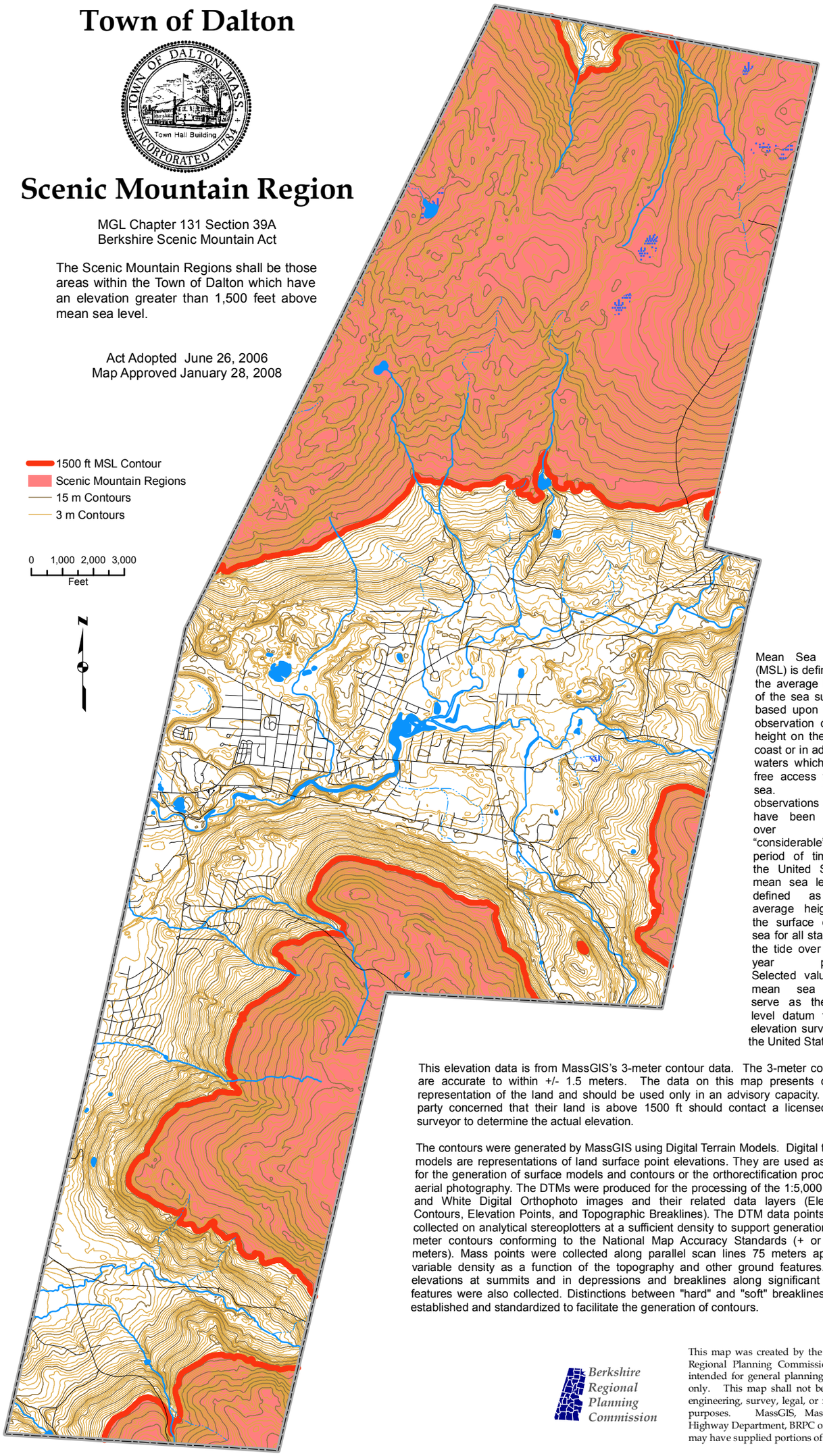
Town of Dalton

Scenic Mountain Region

MGL Chapter 131 Section 39A
Berkshire Scenic Mountain Act

The Scenic Mountain Regions shall be those areas within the Town of Dalton which have an elevation greater than 1,500 feet above mean sea level.

Act Adopted June 26, 2006
Map Approved January 28, 2008



Mean Sea Level (MSL) is defined as the average height of the sea surface, based upon hourly observation of tide height on the open coast or in adjacent waters which have free access to the sea. These observations are to have been made over a "considerable" period of time. In the United States, mean sea level is defined as the average height of the surface of the sea for all stages of the tide over a 19-year period. Selected values of mean sea level serve as the sea level datum for all elevation surveys in the United States.

This elevation data is from MassGIS's 3-meter contour data. The 3-meter contours are accurate to within +/- 1.5 meters. The data on this map presents only a representation of the land and should be used only in an advisory capacity. Any party concerned that their land is above 1500 ft should contact a licensed land surveyor to determine the actual elevation.

The contours were generated by MassGIS using Digital Terrain Models. Digital terrain models are representations of land surface point elevations. They are used as input for the generation of surface models and contours or the orthorectification process of aerial photography. The DTMs were produced for the processing of the 1:5,000 Black and White Digital Orthophoto images and their related data layers (Elevation Contours, Elevation Points, and Topographic Breaklines). The DTM data points were collected on analytical stereoplotters at a sufficient density to support generation of 3-meter contours conforming to the National Map Accuracy Standards (+ or - 1.5 meters). Mass points were collected along parallel scan lines 75 meters apart at variable density as a function of the topography and other ground features. Spot elevations at summits and in depressions and breaklines along significant linear features were also collected. Distinctions between "hard" and "soft" breaklines were established and standardized to facilitate the generation of contours.

Berkshire Regional Planning Commission

This map was created by the Berkshire Regional Planning Commission and is intended for general planning purposes only. This map shall not be used for engineering, survey, legal, or regulatory purposes. MassGIS, Massachusetts Highway Department, BRPC or the town may have supplied portions of this data.

January 25, 2008

Regulations under Massachusetts General Laws, Chapter 131, Section 39A, the Berkshire Scenic Mountains Act (the Act).

PREAMBLE

Activities that alter the natural characteristics of mountaintops and steep slopes may irreversibly change these environmentally sensitive areas. Excavation, construction, clearing, and fill may be visible for many miles. Destruction of the natural ground cover can result in severe erosion. Alteration of mountainsides increases the likelihood of uncontrolled runoff. Steep, rocky slopes impede adequate sewage disposal. Aquifer recharge areas are usually located at elevations higher than the valley floors, and can be polluted by mountainside alteration.

The intent of these regulations is to guide the review owner applications to conduct activities with the goal of avoiding, minimizing or mitigating the impact of proposed activities. The intent of these regulations is not to prohibit construction, nor to hinder farmers or gardeners in their normal pursuits, or landowners in the normal maintenance of their properties.

If a mountain, a steep slope, or a ridgeline is to be altered, the regulations that follow provide both protection for the regulated scenic areas and due process for those who propose changes. The Conservation Commission carries responsibility for these regulations.

1.0 GENERAL PROVISIONS

1.1 Authority

The Conservation Commission of the Town of Dalton, having been designated as hearing authority under General Laws Chapter 131, Section 39A in a vote at Special Town Meeting on 26 June 2006, promulgates these regulations pursuant to the authority granted to it.

1.2 Purpose of the Regulations

The purposes of the regulations are:

a. to protect watershed resources;
b. to preserve the natural scenic qualities of the mountain region.

These regulations create a consistent process and clarify the provisions of the Act by establishing standard definitions and procedures.

1.3 Implementation of the Regulations

The Act and these regulations shall take effect when the following events have occurred:

a. The text and map describing boundaries for the mountain regions have been approved by a two-thirds vote of the Selectboard;

b. The Commissioner of the Department of Conservation and Recreation has approved the text and the map; and

c. The text and map delineating the boundaries of the mountain regions subject to regulation have been filed with the Town Clerk, recorded in the Registry of Deeds, and sent to the Commissioner as specified in the Act.

1.4 Statement of Jurisdiction

These regulations apply to the areas delineated in the Town of Dalton and shown on the approved map entitled "Town of Dalton, Scenic Mountain Region".[1]

The areas in the map include all the areas above 457.2 meters (1,500 feet) in elevation.

2.0 DEFINITIONS

The following definitions shall apply in the interpretation and implementation of these regulations.

ABUTTER: any landowner, as determined by the most recent Assessor's records, whose land is within 300 feet of the property line that is the subject of the Request for Determination or the Notice of Intent including land which lies directly across any street or road from the said property.

ALTERATION: includes, but is not limited to, one or more of the following actions taken within the mapped mountain regions:

1) removal, filling, excavation, or dredging of soil, sand, gravel, rock, or aggregate material of any kind in excess of 20 cubic yards;
2) changing of pre-existing drainage characteristics, sedimentation patterns and flow patterns;
3) disturbance of existing drainage, watercourses or water table;
4) substantial change in topographic or scenic features;
5) erection of any building or structure with a footprint in excess of 500 square feet or a height in excess of 22 feet above maximum existing ground elevation;
6) dumping or discharging of any material except where it is necessary to stockpile materials to conduct the project;
7) removal or destruction of plant life, including clearing of trees in a ground area of more than 5,000 square feet; or
8) construction and/or paving of any new road or parking lot greater than 800 square feet.

BONA FIDE PURCHASER: for value without notice is a buyer for value who has not been informed, verbally or in writing, or had actual knowledge, that activities have been done on the purchased property in violation of the Act.

CERTIFICATE OF COMPLIANCE: written statement issued by the Conservation Commission that establishes all conditions set forth in the Order of Conditions have been met.

CLEARING: is cutting or otherwise removing 50% or more of canopy coverage of trees.

COMMENCEMENT OF ACTIVITY: commencement of physical work on the premises, not merely surveying or site testing.

COMMISSION: the Dalton Conservation Commission.

COMMISSIONER: the Commissioner of the Massachusetts Department of Conservation and Recreation.

[1] (Adopted by Dalton Selectboard January 28, 2008.)

DEPARTMENT: the Massachusetts Department of Conservation and Recreation in the Executive Office of Energy and Environmental Affairs.

DETERMINATION OF APPLICABILITY: a written finding by the Commission as to whether the land or proposed activity shall or shall not require the filing of a Notice of Intent under the Act. It shall be made on Form B of these regulations.

ENVIRONMENTAL IMPACT STATEMENT: full-scale Environmental Impact Statement issued under the National Environmental Policy Act or a full-scale Environmental Impact Report issued under the Massachusetts Environmental Policy Act.

EXCAVATION: the disturbance of any material to lower the surface or create a cavity of any kind, either temporarily or permanently of any area subject to these regulations; however, shall not apply to percolation tests which fall under requirements of 310 CRM 15.000 Subsurface Disposal of Sanitary Sewage (Title V) and implementation of the Dalton Board of Health.

FARMING-AGRICULTURAL USE: the raising of animals, including but not limited to, dairy cattle, beef cattle, poultry, sheep, swine, horses, ponies, mules, goats, bees and fur-bearing animals and supporting activities; or when primarily and directly used in a related manner which is incidental thereto and represents a customary and necessary use in raising such animals, as defined in General Laws 61A, Section 1, as amended. Also horticultural uses, the raising of fruits, vegetables, berries, nuts and other foods for human consumption, feed for animals, tobacco, flowers, sod, trees, nursery or greenhouse products, and ornamental plants and shrubs; or when primarily and directly used in raising forest products under a program certified by the state forester to be a planned program to improve the quantity and quality of a continuous crop; or when primarily, directly used in a related manner which is incidental thereto and represents a customary and necessary use in raising such products, as defined in General Laws, Chapter 61A, Section2, as amended.

FILLING: the placing of any material that raises, either temporarily or permanently the elevation of any area subject to the Act.

FLOODING: local, temporary inundation, or a rise in the surface of a body of water, however caused, such that it covers land not usually under water.

FORM A: Request for Determination of Applicability

FORM B: Determination of Applicability

FORM C: Notice of Intent

FORM D: Order of Conditions

FORM E: Certificate of Compliance

FORM F: Extension Permit

HEARING AUTHORITY: shall mean the Conservation Commission.

MAPPED MOUNTAIN REGIONS: those areas within the town, which are subject to the provisions of the Act and are designated on the map referred to in these regulations.

NOTICE OF INTENT: a written description of any proposed regulated activity to be performed in the mapped mountain regions, as submitted to the Commission. It shall be submitted on Form C of these regulations.

ORDER OF CONDITIONS: a document issued by the Conservation Commission or on appeal by the Commissioner, stating ways in which the activity shall be performed, modified, regulated, forbidden or otherwise controlled to protect the interests in the Act. It shall be made and issued on Form D of these regulations.

OWNER: the person appearing as the owner of record at the Berkshire Middle District Registry of Deeds.

PERSON: any individual, group of individuals, association, partnership, corporation, company, business organization, trust, estate, the Commonwealth or any political subdivision thereof, administrative agency, public or quasi public corporation or body, authority, or any other legal entity or its legal representative, agents or assigns.

PRESERVATION OF NATURAL SCENIC QUALITIES: the protection of the existing features of the environment by regulating activities to minimize potential adverse effects due to pollution or diminution of ground or surface water supply; flooding; substantial changes in topographic features or substantial destruction of vegetation.

REGULATED ACTIVITIES: the removal, filling, excavation or other alterations of land within mountain regions regulated herein, likely to have a significant adverse effect on watershed resources or natural scenic qualities because of the pollution or diminution of ground or surface water supply, public or private; erosion; flooding; changes in topographic features or substantial destruction of vegetation.

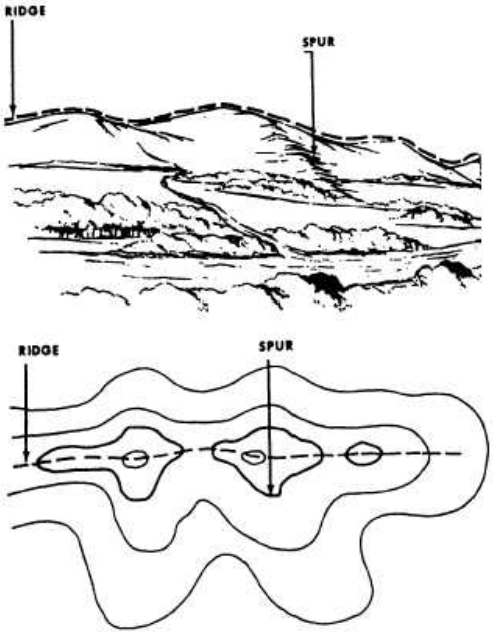
REMOVAL: the act or process of taking away any type of material that has been excavated or severed from any area subject to these regulations.

REQUEST FOR DETERMINATION OF APPLICABILITY: a written request made by any person to the Commission for a determination as to whether or not the proposed work is significant enough that it requires the filing of a more detailed Notice of Intent. It shall be submitted on Form A.

RIDGELINE: for the purpose of the Scenic Mountain regulation, is the ground surface, not the tops of the trees, along the top of a mountain.

It is the high line of the topography that divides a watershed. Water flows in different directions down from this line. Drainage basins or watersheds shall be small-scale drainage systems of local water carrying features such as lakes and perennial streams.

The ridgeline may slope up or down as it connects peaks of different elevations.



SCENIC: vistas, open space, woodlands, fields, meadows and agricultural lands, that contribute to preserving the natural scenic qualities of the environment.

SLOPE: the measurement of a continuous change in elevation divided by the horizontal distance in which the change takes place, expressed as a percentage.

STEEP SLOPE: defined as areas with slopes averaging 15% or greater over a horizontal distance of 200 feet. Steep slopes shall be measured by transects spaced a minimum of 35 feet apart along the base of the slope. A box 35 feet x 200 feet defines the area of a steep slope.

SIGNIFICANT: of importance and of consequence as determined by the Commission.

TOPOGRAPHIC FEATURES: the configuration of the land's surface, including its relief and relative elevation.

TREE CANOPY COVERAGE: the horizontal area covered by the foliage of a tree in full vegetation.

VEGETATION: the plant life or total plant cover of a given area, including but not limited to grass, ground cover, shrubs and trees.

VISTA PRUNING: the selective thinning of tree branches or mowing and removal of under story brush, to establish a specific "window" to improve visibility. Vista Pruning does not include the cutting of trees.

WATERSHED: a region or area within which all water ultimately drains to a particular watercourse or body of water.

3.0 PERFORMANCE STANDARDS

3.1 Applicants seeking approval under these regulations must meet all applicable state standards intended to implement the provisions of M.G.L. CH. 131, Section 39A. Said standards are herein incorporated by reference. The Commission further finds that protection of the interests identified in these regulations requires that applicants meet the following additional standards.

3.2 In considering any application for work, within the mapped mountain regions, the Commission shall make the following presumptions:

a. Man-made protuberances above ridgelines damage natural scenic qualities;
b. Clearing of contiguous, regulated lands totaling one-half (1/2) acre or more damages natural scenic qualities and/or causes erosion;
c. Alteration of steep slopes causes erosion, promotes flooding, damage to water quality, and degrades scenic qualities.

3.3 The presumptions in 3.2 above may be rebutted by the applicant upon submission of a preponderance of the evidence to the satisfaction of the Conservation Commission that:

a. one or more of the presumptions does not apply to the site of the proposed work, which would result in the Commission issuing the applicant a Negative Determination of Applicability; or
b. the proposed work will be mitigated in such a way that it will have no unacceptable or significant adverse effects upon the watershed resources or natural scenic qualities, which would result in the Commission issuing the applicant, if applicable a Negative Determination of Applicability, or an Order of Conditions.

3.4 Drainage

3.41 General Conditions for Site Design and Construction of all projects.

a. Construction on any site subject to these regulations shall be managed to control stormwater runoff and to prevent erosion and sedimentation, both during construction and after completion of construction.
b. The Owner shall operate and maintain all permanent drainage and erosion control measures in good working condition.
c. Erosion and sedimentation control measures shall be installed at the beginning of site work, and shall be maintained throughout the construction period until the site is stabilized. The measures used shall conform to the Best Management Practices (BMP's) included in the sources listed in Section 6.6 following. The applicant shall demonstrate to the Conservation Commission that the selected BMP's are appropriate for the project.
d. Site work on all projects should be designed to:
    i. minimize the amount of land disturbance;
    ii. retain natural vegetation where possible;
    iii. use existing and newly planted trees and shrubs as a vegetative buffer to minimize visual impact of new buildings when viewed from off-site roads;
    iv. avoid cutting or substantial thinning of trees along ridgelines or creating a "notch" in the tree line along a mountain top;
    v. minimize the amount of impervious surfaces and maximize the use of permeable materials such as porous pavement in parking areas;
    vi. disperse site drainage as much as possible;
    vii. avoid concentrating storm water runoff and discharging it at one point;
    viii. avoid discharging drainage onto steep slopes;
    ix. utilize open vegetated or rock-lined drainage swales wherever possible;

x. minimize the use of piped drainage systems; and

xi. provide for stabilized drainage outlets, aprons, stilling basins, or similar scour protection measures where drainage discharges onto the ground.

e. Any culverts such as driveway cross culverts, shall be at least 12" diameter and have a slope of at least 1% with a preferred slope of 2%.

3.42 Drainage Requirements for larger projects.

a. Any construction project subject to these regulations that will disturb a total of one (1.0) acre or more of land surface shall, unless waived by the Conservation Commission, require the submission of hydrologic calculations and plans of storm water mitigation measures designed by a registered professional engineer.

b. Hydrologic calculations shall be submitted comparing the existing drainage conditions on the site before construction (pre-development condition) with proposed and shall include the following design storms: 2-year, 10-year, 25-year, and 100-year intervals. Calculations shall include a description of the methodology used, and a narrative description of the soil conditions, slopes, vegetative cover, and runoff curve numbers for each sub-drainage area affected by the project.

c. All components of the piped drainage system shall be designed with capacity to handle at least the peak runoff from a 25-year storm in the post-development condition.

d. Storm water management measures shall be installed so that the post-development project will not increase the peak rate of runoff from the site during a 25-year design storm compared to pre-development conditions.

3.5 Septic systems

3.51 Any septic system that is to be constructed in compliance with requirements of 310 CMR 15.000 *Subsurface Disposal of Sanitary Sewage (Title V)*, or more stringent local board of health requirements, proposed within the regulated areas described herein shall be presumed to protect the interest identified herein.
The construction impact around the system shall be the subject of regulation.

3.52 Any emergency septic system repairs need only the oversight of the Board of Health.

3.6 The Zoning Official, in Dalton, may review the project documents provided by the applicant and sign off as an agent of the hearing authority thereby relieving the applicant from filing. If the Zoning Official does not sign off on the project he shall direct the applicant to file the necessary forms with the required hearing authority.

3.7 Compliance with the Forest Cutting Practices Act shall be demonstrated by submission to the Conservation Commission a copy of the permit issued under that Act.

4.0 REQUEST FOR DETERMINATION OF APPLICABILITY

4.1 Any person who believes that the Act does not apply to a particular area or proposed work for one or more of the reasons listed below, or that the proposed work is not likely to have a significant adverse impact on watershed resources or natural scenic qualities, may submit a written Request for Determination of Applicability to the Conservation Commission at Town Hall.
Reasons:

a. Land is not within the mountain regions regulated under the Act;

b. Proposed work is exempt under the Act;

c. Proposed work is not an alteration as listed in 2.2; or
d. Proposed work includes appropriate mitigation measures so the work will not have a significant adverse impact on watershed resources or natural scenic qualities.

4.2 The request shall be made on Form A. By certified mail or by hand delivery to the Conservation Commission at Town Hall. The requests shall include such information or plans as may be necessary to describe in general terms the nature and scope of the proposed activity, its effect upon protected watershed and scenic resources and, if applicable, any mitigating measures proposed to protect the watershed resources and preserve the natural scenic quality.

Plans need not be detailed engineering or architectural plans so long as the nature and scope of the proposed activity is reasonably described. Plans and accompanying documents shall include sufficient information to demonstrate to the satisfaction of the Conservation Commission that the interests of these regulations will be protected.

Plans proposing mitigating measures shall include landscaping, erosion controls, and drainage to show how the proposed work will not adversely affect the interests of these regulations. Any area proposed for removal of vegetation where soil will be exposed for more than 10 days shall be mulched, or otherwise treated, to prevent erosion.

Any activity shall be limited to what is described in the submittal.

4.3 Upon receipt of such notice the hearing authority shall designate a file number for such notice and within 21 days, shall make a determination whether or not the proposed work is a regulated activity.

4.4 The Commission shall send to the applicant a written preliminary determination signed by a majority of the Commission, within 21 days following receipt of the request. Copies shall be sent to all persons so requesting. If a person other than the owner submitted the Request for Determination of Applicability, a copy shall also be sent to the owner. The Commission shall post a notice of its finding in its customary place of general public notice within 1 day of making its finding, whether the Commission finds the proposed activity a regulated activity or not. The Determination shall be made on Form B of these regulations.

4.5 The Commission may rescind an order issued after a preliminary determination and hold a public hearing if any owner of abutting land or any ten residents of the town where the land is located file a request for a hearing by, certified mail, within ten days of the issuance of the order.

4.6 If the Applicant is not notified within 14 days after a Determination is issued that the hearing authority has rescinded the order, the applicant may perform the proposed activity.

5.0 NOTICE OF INTENT

5.1 Any persons proposing an activity subject to the Act as specified in section 1.2 of these regulations shall send to the Commission, by certified mail or in-hand delivery, 4 copies of a completed Notice of Intent. A filing fee payable to the Town must accompany the Notice. The date of filing of said notice shall be the date of receipt of a completed filing by the Commission, and all time periods set forth in the Act shall commence from this date. The Notice shall be filled out on Form C of these regulations.

5.2 The Notice of Intent shall be sent before all permits, variances, and approvals required by law or local bylaw with respect to the activity have been applied for. Such permits, variances, and approvals required by local by-law may include, among others, the

following:

a. Zoning variances;
b. Special permits including comprehensive permit issued under chapter 40B, Sect.20-23;
c. Land Disturbance Permit issued under the *Stormwater Management and Erosion Control Bylaw*; and
d. Any required permit from the Board of Health, such as a Disposal Works Construction permit or Well Construction permit.

5.3 Upon receipt of a Notice of Intent, the Commission shall designate a file number.

5.4 The applicant must submit any other reasonable information, relevant to the project, later requested by the Commission. If such information is not submitted, the Commission may, after a public hearing, issue an Order prohibiting the activity.

6.0 PLANS

6.1 Plans sent with a Notice of Intent shall include the following:
Two locus maps showing property's location. One shall be an enlarged section of a United States Geological Survey map, and the other shall be a copy of the current Dalton Zoning Map, each showing the location of the property. Each shall have an arrow indicating True North.

6.2 Drawings should be drawn to a scale in which 1" equals no more than 40', with the title designating the name of the project location, names(s) of the persons preparing the drawings, and the date prepared including all the latest revision dates. The Commission may require drawings to be stamped and signed by a registered professional engineer, architect, landscape architect, or registered land surveyor of the Commonwealth.

6.3 Drawings and accompanying documents shall include sufficient information to demonstrate to the satisfaction of the Conservation Commission that the interests of these regulations will be protected. These drawings and documents shall include some or all, as may be applicable to the proposed property and work, of the following:

a. Present and proposed contours of the entire work area and affected adjacent areas showing contours at elevation intervals of no more than 2 feet;
b. All property lines and zoning setbacks;
c. All brooks, creeks, rivers, streams, ponds, lakes, wetlands, and buffer zones, whether continuous or intermittent, natural or man-made, Regulated by the Massachusetts Wetland Protection Act General Laws 131 Section 40 within 200 feet of any work area(s);
d. Location of major site features, such as existing stone walls, fences, large trees, and rock outcroppings;
e. Location, extent, and area of all present and proposed paved areas, roads, driveways, and parking areas;
f. Location of proposed water retention areas;
g. Location of areas to be removed, dredged, filled or otherwise altered in any way;
h. Location of underground utilities, rights of way or easements of any kind;
i. Soil characteristics within 200 feet of the work area(s) in representative portions of the site, including the type of soil found in building sites. Sampling sites shall be specified;
j. All existing and proposed structures, including height thereof;

k. All calculations necessary to show the effect of the proposed activity on soil and water;
l. Location of any spoils areas;
m. Existing and proposed water supplies for proposed activities;
n. Existing and proposed sewage disposal systems, specifically showing the location and type to be used;
o. Erosion and sedimentation prevention plans for during and after construction;
p. Description of the potential impact on natural scenic qualities of the mapped mountain region and specific measures for mitigating those impacts; and
q. Proposed alterations, within the work area(s) to existing tree canopy coverage, expressed as a percentage reduction from the existing conditions.

6.4 Engineering drawings shall also include a profile map showing principal features of the site, proposed alterations, and a profile drawing of site vegetation. These profile maps should be drawn from multiple radians from various angles.

6.5 The applicant may submit, or the Commission may require, further information that will assist in the review if deemed necessary by the Commission to determine the effect of the proposed activity on the mapped mountain regions.

6.6 Performance standards and engineering practices acceptable for work to be performed under this Act are contained in the most recent versions of the following:
a. U.S. Dept. of Agriculture, Soil Conservation Service. Guidelines for Soil and Water Conservation in Urbanizing Areas of Massachusetts;
b. U.S. Dept. of Agriculture, Soil Conservation Service. Erosion and Sediment Control in Site Development: Massachusetts Conservation Guide Volume I, September, 1983. (Available from Berkshire Conservation District);
c. U.S. Dept. of Agriculture, Soil Conservation Service. Vegetative Practices in site Development: Massachusetts Conservation Guide Volume II, (Available from Berkshire Conservation District);
d. U.S. Dept. of Agriculture, Soil Conservation Service. Soil Survey of Berkshire County, Massachusetts, February 1988. (Available from Berkshire Conservation District); and
e. Massachusetts Stormwater Management, DEP, Boston, MA, March 1997, Volume One and Two.

7.0 HEARINGS

7.1 The Commission shall hold a public hearing on the proposed activity within 21 days after receipt of the Notice of Intent.

7.2 Notification of the time and place of the hearing shall be given by the Commission, at the expense of the applicant, not less than 5 days prior to such hearing, by publication in a newspaper of general circulation in the Town of Dalton. The applicant shall notify abutters of the hearing by certified mail, return receipt requested, not less than 10 days prior to such hearing and provide proof of said mailing to the Commission.

7.3 The Commission shall submit by certified mail, at the expense of the applicant, a copy of the published notice to the applicant, to the Board of Health and to the Planning Board of the town.

7.4 The hearing shall be public, and all interested persons shall be allowed to testify.

7.5 The Commission, with the consent of the applicant, may continue a hearing for good cause

provided that notice of continuance to a specific date, time and place is given at the public hearing.

8.0 ORDER OF CONDITIONS

8.1 Within 21 days after the close of the hearing, the Commission shall issue a written Order on the proposed activity which may impose reasonable conditions that may be necessary to protect watershed resources, or natural scenic qualities against any significant adverse effect because of the pollution or diminution of ground or surface water supply, public or private; erosion; flooding; substantial changes in topographic features; or substantial destruction of vegetation of the mapped mountain regions. The Order shall be made on Form D of these regulations.

8.2 The Order shall be signed by a majority of the Commission, and a copy thereof shall be sent by Certified Mail to the applicant, the owner of the land if other than the applicant, and the Department. The order shall also be posted, within 1 day of issuance in the hearing authority's customary place of general public notice.

8.3 Any applicant undertaking an activity regulated by this Section shall record the Order in the Berkshire Middle District Registry of Deeds after the expiration of the ten-day Appeal Period. No activity shall commence until the Order is recorded and the applicant sends a receipt for this recording from the Registry of Deeds by certified mail or hand delivered to the Commission.

8.4 The Order of Conditions shall be valid for one year unless extended or revoked in accordance with the provisions of the Act or these regulations. Extension of the OOC requires written application on Form F, with the hearing authority prior to the expiration of the existing OOC.

9.0 APPEALS

9.1 An appeal request to the Department may be made in accordance with M.G.L. 131, Sect. 39A, within ten days after the Commission has acted, or failed to act, as follows:
   a. If the Commission has issued an Order;
   b. If the Commission fails to hold a hearing within 21 days after receipt of the Notice of Intent;
   c. If the Commission holds a hearing but fails to issue an Order within 21 days after the close of the hearing.

9.2 Appeal may be initiated by any of the following:
   a. The applicant; or
   b. Any abutter of land upon which the proposed activity would be carried out; or
   c. Any ten residents of the town where such land is located.

9.3 The person(s) appealing may request the Department to determine if other reasonable conditions should be imposed on the proposed activity or if such conditions should be modified in order to protect against a significant adverse effect on watershed resources or natural scenic qualities, or if conditions can be modified or eliminated without any loss of protection against any significant adverse effect on watershed resources or scenic qualities.

9.5 The request shall be sent by certified mail to the Department within ten days after the

Commission has acted or failed to act. At the same time, the person(s) appealing shall send copies thereof to the Commission and, if the person(s) appealing is not the owner or the applicant, to the owner and the applicant.

9.5 Within ten days after receipt of an appeal, the Department shall notify the applicant if the application is not in the proper form or is lacking information necessary to make the determination.

9.6 Within 21 days after receipt of an appeal the Department shall make the determination requested and shall issue a written order, signed by the Commissioner, imposing such reasonable conditions as may be necessary to protect the resources described herein, or modifying or eliminating conditions that may reasonably be changed without any loss of the protection of resources described herein. If the Department finds that the matter is of such size or complexity that additional time is needed, such 21 day period may by order be extended up to an additional 60 days.

9.7 Any Order issued by the Department shall supersede the prior Order of the Commission and all work shall be done in accordance therewith.

9.8 A copy of the Superseding Order shall be sent by Certified Mail to the applicant, the Owner, to the Hearing Authority, and to the party who requested the order if not the applicant.

9.9 If the applicant is not notified of a request of the Department within 14 days after the after issuance of an Order by the Hearing Authority, or upon the issuance of an order by the Department, said applicant may conduct any regulated activities in accordance with the terms of the order, issued by the Hearing Authority.

9.10 Any person aggrieved by an Order of the Department may appeal under the provisions of General Laws Chapter 30A. Such rights of appeal shall be exclusive.

10.0 CERTIFICATE OF COMPLIANCE

10.1 Upon completion of an activity in compliance with an Order, the applicant may request a Certificate of Compliance from the agency that issued the Order. The request shall be in writing.

10.2 Where a project has been completed in accordance with plans stamped by a registered professional engineer, architect, landscape architect, or land surveyor, a written statement by the aforesaid professional people, certifying compliance with the plans, shall accompany the request for a Certificate.

10.3 After receipt of the request for a Certificate, the Commission may conduct an on-site inspection of the completed work by the applicant and the Commission.

10.4 If any of the work is not in compliance with the Order, the Commission shall refuse to issue a Certificate.

10.5 Upon completion of a portion of work under an Order of Conditions, the Commission may issue a Certificate of Compliance as to that portion, if the applicant so requests.

10.6 The Certificate shall certify in recordable form that the activity described in the Notice of Intent and plans has been completed in accordance with the Order. The Certificate shall be made on Form E of these regulations.

10.7 The applicant may record the certificate in the appropriate Registry of Deeds.

10.8 The applicant may request an extension of an Order before it expires. The Commission may grant two extensions of the Order, each for a period of no longer than one year. Extensions shall be made on Form F of these regulations.

11.0 VIOLATIONS AND ENFORCEMENT

11.1 Any person, except a bona fide purchaser for value without notice, who purchases or otherwise acquires land upon which an activity has been done in violation of this MGL Chapter 131, Section 39A or in violation of an order issued under MGL Chapter 131, Section 39A, shall forthwith comply with the order or restore the land to its condition prior to any violation.

11.2 The Commission, its agents, officers, and employees, may enter upon privately owned land for the purpose of carrying out the provisions of the Act, and may issue a cease and desist order to anyone found in violation of the Act.

11.3 The Commission may revoke an Order if it finds that the applicant has not complied with the conditions set forth in the Order, exceeded the scope of the activity as set forth in the Order, or if it determines that facts not available or not brought to its attention at the time the Order was issued warrant such revocation.

11.4 No revocation shall be made without notice to the applicant of the facts or conduct, which warrant the intended revocation and a hearing at which the applicant is given an opportunity to show compliance with the Order.

11.5 Any court having equity jurisdiction may restrain a violation of this section and enter such Orders as it deems necessary to remedy such violations, upon the petition of the Attorney General, Commissioner, the town, an owner or occupant of property which may be affected by such violation, or any ten residents of the Commonwealth under the provisions of General Laws Chapter 214, Section 7A.

11.6 Whoever violates any provisions of this Act shall be punished by a fine of not more than one thousand dollars or by imprisonment for not more than six months or both. Each day or portion thereof of continuing violation shall constitute a separate offense. Officers of the Executive Office of Energy and Environmental Affairs shall enforce the Act.

12.0 EXEMPTIONS

12.1 The Act does not apply to the cutting of forest products on land devoted to forest purposes whose owners have complied with the provisions of the Forest Cutting Practices Act, General Laws Chapter 132 Sections 40 - 46, by obtaining a permit thereunder and which has been submitted to the Commission for review prior to cutting.

12.2 The Act does not apply to any activity that is subject to the provisions of the Wetlands Protection Act, General Laws 131, Section 40.

12.3 Any activity conducted in connection with the construction or maintenance of any facility as defined in General Laws Chapter 164, Section 69Gor to the maintenance, repair, reconstruction, replacement, enlargement which is not of substantial nature, or change in use of any lawfully located and constructed structure.

12.4 Any activity conducted in connection with construction or maintenance of any electrical, transmission or distribution facilities used in transmission of intelligence by electricity or by

telephone or otherwise for which location has been approved by the Selectboard or under General Laws Chapter 166, Section 22.

12.5 Construction or maintenance of any electrical distribution facilities required to serve a building or structure whose construction has been approved under the Act.

12.6 Notwithstanding the provisions of MGL Chapter 131, Section 39A and these Regulations, certain activities or areas are exempted from regulation:

a. Maintenance, and ordinary repairs;
b. Vista pruning, provided the activity meets the definition in Section 2 above;
c. Plantings of native species of trees, shrubs, or groundcover;
d. Pruning of landscaped areas;
e. Farming-agricultural and associated maintenance of farming-agricultural lands, such lands being farmed as of the effective date of these regulations, but not the creation of new or expansion of existing farmlands which shall require the filing by the applicant under the SMA.
f. Normal use and maintenance, not substantial enlargement, of land in use for agriculture, gardening, landscaping, or similar activities on existing residential properties.

End of regulations.

REPORT ON THE POTENTIAL IMPACTS TO THE NATURAL RESOURCES FROM A PROPOSED NATURAL GAS PIPELINE IN THE TOWN OF NASSAU

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EXECUTIVE SUMMARY

The Nassau Town Board requested that the Natural Resources Committee (NRC) produce a report that identifies the potential impacts to the Town's natural resources if a new, natural gas pipeline route was constructed through the northern portion of the Town. The NRC was also asked to evaluate the impacts of the proposed project's operation, maintenance and abandonment phases. The Town Board also requested that the NRC compare the potential impacts if the proposed pipeline followed the originally proposed route along the existing Tennessee Gas pipeline corridor.

The conclusion of the NRC is that the Northern route will have much greater and long term negative impacts on the Town's natural resources.

The following recommendations have been made by the NRC for the Town Board's and Supervisor's consideration:

1. The Town should go on the record with the Federal Energy Regulating Commission (FERC) as questioning the need for and opposing the construction of the proposed Northeast Energy Direct (NED) Project.

2. If FERC proceeds with its reviews of the NED project, the Town should go on the record with the FERC as opposing the Northern route in favor of the Southern route because of significantly fewer impacts to the Town's natural resources.

3. If FERC proceeds with its review of the NED project, regardless of which route, the compressor station should be located in an area other than one zoned for rural/residential. The NRC believes that a more appropriately zoned location is found along the Route 9 corridor.

4. The NRC recommends that the Town of Nassau act on the objectives identified in the Town Comprehensive Plan and adopt noise control requirements for commercial or industrial development in a residential area, such as the proposed compressor station (Town Comprehensive Plan, pg. 61).

5. The NRC suggests that the Town of Nassau also consider passing an ordinance to regulate and minimize excessive facility lighting when it will extend well beyond immediate property boundaries.

The rational and justifications for these recommendation are detailed in the report on pages #20-22 in Section G. Recommendations.

REPORT ON THE POTENTIAL IMPACTS TO THE NATURAL RESOURCES FROM A PROPOSED NATURAL GAS PIPELINE IN THE TOWN OF NASSAU

The Nassau Town Board requested that the Natural Resources Committee (NRC) produce a report that identifies the potential impacts to the Town's natural resources if a new, natural gas pipeline route was constructed through the northern portion of the Town. The NRC was also asked to evaluate the impacts of the proposed project's operation, maintenance and abandonment phases. The Town Board also requested that the NRC compare the potential impacts if the proposed pipeline followed the originally proposed route along the existing Tennessee Gas pipeline corridor.

A. BACKGROUND AND LOCATION

The Kinder Morgan Company (KMC) is proposing to construct an approximately 350 mile long, 36" natural gas pipeline from the "fracked" gas fields of Pennsylvania, across New York, Massachusetts and parts of New Hampshire before terminating in Dracut, MA. The KMC refers to this proposal as the Northeast Energy Direct (NED) project. The NED project will not deliver natural gas to any communities or businesses within NYS, Rensselaer County or the Town of Nassau. The NED project requires that large compressor stations be built along the route to move 2.2 billion cubic feet of gas daily through the line. The larger compressor stations will require upwards of 20 acres or more to site the industrial facility. The exact locations of the compressor stations are not identified at this time. However, KMC has indicated that operationally, there will need to be a large compressor station site located either within the Town of Nassau or the Town of Schodack.

The NED project has two alternative routes that would both potentially pass thru the Town of Nassau. One of the proposed routes would follow the existing Tennessee Gas Pipeline Company (a subsidiary of KMC) pipeline corridor, approximately 3 miles across the southeast corner of the Town. In this proposed route, the KMC would remain primarily within their existing right-of-way. While the exact land requirements are not presented in the information initially submitted by KMC to the Federal Energy Regulating Commission (FERC), given standard industry practices for pipe separation distances, an additional land taking of up to 10 acres may be required to expand their permanent right-of-way. Some limited temporary "taking" of land will be required as well during construction. In this report, we will refer to this as the Southern Route.

The second potential route, reportedly the preferred route, will parallel two different National Grid power line corridors for 6.7 miles across the entire northern portion of the Town and will require the acquisition of between 24 and 40 acres of land for permanent easements across private property and up to an additional 40 acres of temporary taking of

lands during construction. In this report, we will refer to this as the Northern Route.

Detailed descriptions of the two routes follow: (please see Attachment # 1 maps N1-N4 for maps of the Northern proposed route and Attachment #2 maps S1- S3 for maps of the Southern proposed route.)

1. THE NORTHERN ROUTE - approximately 6.7 miles in length

- the proposed route parallels the 230 KW National Grid power line crossing approximately ½ mile south of the intersection of Boyce and Burden Lake Rd., passing thru the Nassau Sportsmen Club's land from the Town of Schodack into the Town of Nassau.

- the proposed route then continues NE paralleling Clarks Chapel Rd. and crossing under Slivko Rd. and then under Co. Rt. 15 just north of its intersection with China Hill Rd.

- the proposed route continues NE crossing under Old Mill Pond Rd. at its intersection with China Hill Rd.

- the proposed route continues NE crossing under Co. Rt. 18 and under North Nassau Rd. just north and west of the Life in Christ Fellowship Church.

- the proposed route continues NE paralleling Radley Rd. and then turns sharply SE crossing under Radley Rd. at the Pikes Pond outlet stream road culvert and continuing until it crossing under State Route 66.

- the proposed route turns sharply NE passing south and east of Pikes Hill crossing under State Route 43 approximately 2000 ft. to the west of the Alps Mountain Family Camp Ground.

- the proposed route continues NE until it crosses under the National Grid 345 KW power line and then turns sharply to the SE continuing until it crosses under Taborton Rd.

- the proposed route continues SE but jogs away from the 345 KW National Grid power line before crossing under Fire Tower Rd. and then heading SE again crossing into the Town of Stephentown before again paralleling the 345 KW National Grid power line into Massachusetts.

2. THE SOUTHERN ROUTE - approximately 3 miles in length

- the existing route crosses from the Town of Schodack under Route 203 south of the Village of Nassau, approximately 1800 feet north of Sweets Crossing Rd.

- the existing route then travels in an easterly direction, crossing under Hanley Rd., Malden Bridge Rd., and then Jefferson Hill Rd. as it intersects with Mashodack Rd.

- the existing route then continues in an ESE direction and crosses under Middle Rd. just before crossing into Columbia County.

B. CONSTRUCTION PHASE

Typical impacts during construction phase are related to the clearing of the right-of-way (ROW), construction access roads, and laying the pipe. ROWs and access roads can increase human access into sensitive areas, displace wildlife from their habitat, and act as barriers to wildlife movement. ROWs may cross different ecosystems and can fragment habitat, lead to clearing of sensitive vegetation and create pathways for the spread of invasive species. ROW stream crossings can result in significant disruption and potential loss of fisheries, aquatic habitat and bio-diversity. (1)

If the project were to proceed, these are the steps in the construction process (taken from the FERC publication "An Interstate Natural Gas Facility on My Land? What Do I Need to Know?" [*comments in italics added by NRC*]:

- The civil, environmental, cultural/historic surveys would be completed and the construction right-of-way would be marked/staked for the clearing crew.
- The clearing crews would remove any trees or brush within the right-of-way that would interfere with construction [*and "grub and grind" out all roots and stumps]*.
- Temporary erosion control devices would be installed, where required.
- The ROW will be graded with large earth moving equipment. [*On steep side hills, a cut and fill method will be used to create a bench wide enough to allow heavy equipment to operate and pipe to be positioned. On steep up hill and down hill grades, the grade will be cut-down and earth moved so that the pipe will not have any sharp bends. (Periodically, as part of ongoing maintenance, the internal pipe must be cleaned with a "pigging tool" - the pipeline equivalent of a flu brush. The bend in the pipe must be gentle enough to allow this "pigging tool" to pass thru without getting stuck.) The temporary storage of all the spoils material generated from cutting-down the grade will require additional temporary easements. This will be a frequent occurrence along the Northern route, because of all the steep up and down hill grades.*]
- Topsoil would be separated from subsoil in agricultural areas.
- Heavy equipment, such as backhoes and rotary trenching machines would dig the trench. [*For a 36" pipe, the trench will be dug typically to a 7 foot depth and 4 feet wide; 1 foot of sand to bed the pipe, 3 feet of pipe with ½ foot of clearance on each side of the pipe, and 3 feet of cover over the pipe to grade. In areas where bedrock is near the surface, blasting will be required. The ridge along the Northern route containing greywacke hard rock, located between Rt. 66 and Rt. 43, will undoubtedly require significant blasting. There are various methods that are used when the pipeline crosses streams. These are: wet open cut, dry crossing (damming the water and moving it around the trench) and boring. For most of the unregulated or unprotected streams, KMC will probably use the wet open trench method; meaning they will dig right through the stream. For the 4 classified stream crossings, they will*

probably use the dry crossing method. Both of these methods have the potential for significant short term impacts on the water quality and habitat.]

- Pipe would be delivered to the ROW segments.
- Pipe would be bent to fit the trench and welded together. [*This metal pipe will be fitted with "sacrificial cathodes" that will supposedly mitigate the effects of the electromagnetic field surrounding the National Grid power lines. Monitoring of these "sacrificial cathodes" will require periodic testing and opening up sections of the trench to inspect the cathodes.*]
- The trench will be backfilled
- Construction debris removed
- ROW would be re-graded to approximately the original contours, seeded and temporary erosion control devices installed and after re-vegetation the devices are removed. [*Heavy rains during tropical storms Irene and Lee in 2011 caused extensive failures to erosion and sediment control on pipelines in north central Pennsylvania (2).*]

FOOTNOTES

(1)US FWS - Ecological Services - Energy Development/pipelines

(2) Nature Conservancy - Pennsylvania Chapter - "Report #2 of the Pennsylvania Energy Impacts Assessment" 12/16/11

C. OPERATION AND MAINTENANCE PHASE

Once a pipeline is put in place, the two largest impacts to natural resources will be vegetation maintenance along the permanent right-of-way (ROW) and erosion control. KMC has proposed to maintain the 50 foot ROW by mechanical means (mowing) every three years. A 10 foot area centered over the pipeline will be maintained on a yearly basis. KMC has not ruled out the use of herbicides or pesticides accept in those areas within a 100 ft. radius of a wetland or waterbody.

Impacts along the Northern route will be greater because of the greater total distance, the current type of cover (greater percentage of forested cover; especially within the Rensselaer Plateau), and the much steeper terrain. With a three year cycle for vegetation maintenance, the probability of non-native and invasive plants becoming established and spreading to areas outside the ROW will be high.

There are significant and frequent elevation changes and many steep valleys along the proposed Northern route. Most of these steep valleys will have streams and wetland areas at the bottom of the grades. The bio-diversity and productivity of the streams and wetlands will be negatively impacted by the run-off and eventual sedimentation introduced by the disturbed lands.

D. ABANDONMENT PHASE

The pipeline along either of the two proposed routes will eventually be abandoned. That may be in the distant future since the natural gas reserves in the current fields are very large and the contracts that KMC are negotiating are long term contracts (20 years plus). KMC does not discuss how it plans to deal with the pipeline or its supporting facilities if the line is abandoned in the future. The NRC cannot evaluate the impacts to the Town's natural resources if it doesn't know what KMC plans to do. Most likely the pipe will be left in the ground and sealed off. The above ground facilities are likely to be disassembled and scrapped. If KMC does stop transporting natural gas but wishes to use the line sometime in the future, they would be required to continue to maintain the ROW. However, there is another option that FERC points out with regard to abandonment of pipelines: "In some cases a pipeline company may ask to abandon a pipeline for use as a natural gas transportation line, but reserve the right to convert that line to another use, such as transportation of crude oil or other petroleum product. Easement agreements affected by conversion ...may transfer to the new operator."

E. PONTENTIAL IMPACTS ON OUR NATURAL RESOURCES

Along the Northern route, the NRC has listed the specific natural resource sites of concern, using the map/mile notations on the KMC Pipeline Segment Maps. The areas of potentially impact were identified based on reports filed by KMC with the Federal Energy Regulating Commission (FERC), USGS quad maps, aerial photography and field survey work. While the NRC has tried to be complete and thorough in its listing of sites and potential impacts, there may be additional concerns and sites that will be identified at a later date.

Along the Southern route, the NRC has also listed the locations of the natural resource sites that may potentially be impacted by the construction of a pipeline based on reports from KMC filed with the Federal Energy Regulating Commission, as well as USGS Quad maps and aerial photography. No detailed field survey work was performed for this existing route. The natural resources along this route have already been impacted and disturbed when the pipelines were previously laid.

The following is a list of general information that will be presented to the Town Board as well as the natural resources that will be reviewed for potential impacts:

- General information - distances of proposed routes, number and size of potential property "takings" and current land uses
- Surface Water Resources - streams, ponds and lakes crossings.
- Wetlands - State and federally regulated wetland areas as well as other wetlands areas with habitat or species of special concern.

- Groundwater Resources - known bedrock and surficial groundwater aquifers or where existing springs are located.

- Fish, Wildlife and Vegetation - fish and wildlife species and plant communities that are protected, endangered, or of special concern or unique to this area.

- Soils, Geology, and Topography - soils of special concern for their value to agriculture or unique geologic formations of aesthetic value.

- Cultural/Archeological Resources - sites of known or suspected cultural or archeological value.

- Air and Noise - The exact location of any potential compressor station in the Town of Nassau, if any, has not been identified. Therefore it will not be possible to specify which or how the other resources listed above may be impacted. The NRC did evaluate the potential air and noise impacts that locating a compressor station with three 30,000 horsepower generators would have on a potential site within the Town of Nassau. These impacts are listed in a separate section in the Report

COMPARISON OF NATURAL RESOURCES IMPACTS

	Northern Route	Southern Route
Length	6.65 miles	2.95 miles
Permanent Easement (land taking)	24 to 40 acres (ROW 30' to 50')	up to 10 acres (additional ROW 25")
Property Parcels Directly Impacted	50 Parcels	20 to 22 Parcels
Land Use	Electric Power Transmission Wooded Rural Residential	Natural Gas Pipeline Agricultural (Hay & Corn) Rural Residential
Clearing Required	90% forested 22 to 36 acres (up to 15 acres within the Rensselaer Plateau)	10% forested 1 acre or less
Streams & Wetlands	19 sites of concern 4 classified stream crossings; 6 unclassified stream crossings 2 small unnamed ponds 8 wetland areas	7 sites of concern 1 classified stream crossing 5 unclassified stream crossings 5 wetland areas
Archeological Sensitive Areas	Subsurface areas undisturbed (over 5mi. of this route are within Archeological Sensitive Areas)	Subsurface areas previously disturbed

	Northern Route
Groundwater	Insufficient geo-technical data exists along the Northern route to make a thorough analysis of potential groundwater impacts. USDA soils maps identify soil type and depth only down as far as 5 feet, however the depth of the pipeline trench will need to be at least 7 feet. A trench at that depth, along with the blasting that may be necessary, has the potential to impact artesian influenced wells and springs along the proposed route. (Approximately 2.0 miles of the Northern route is located on steep side hills, above some 20 private wells.) Approximately 1.5 miles of the Northern route does pass thru a major groundwater aquifer along the upper Tackaswasick Creek. This aquifer has been recommended for special protection by the NRC in previous reports to the Town Board because it serves as the principle water supply for the numerous homes along Taborton and Dunham Hollow Roads.

Groundwater

Southern Route

The Southern route passes through approximately .7 miles of the groundwater aquifer shared by Town of Schodack and Nassau just south of the Village of Nassau. The Village water supply well is located 1.1 miles north of the Southern route and not subject to impact from this pipeline route. The NRC is not aware of any private water supply issues that occurred from placement of previous pipelines along the Southern route.

Fish, Wildlife and Vegetation

Northern Route

Please refer to Dr. David Hunt's report entitled "Important Biodiversity Sites Along the Proposed Kinder-Morgan Pipeline", dated May3, 2015 (Attachment #3). Table 1 in this report lists numerous sites along the Northern route where significant and important aquatic networks, ecosystem complexes, natural communities areas, probable presence of rare species, and fish and herptiles areas have been identified. Many of these have significance at both the County and State level.

Fish, Wildlife and Vegetation

Southern Route

No detailed field work was performed to analyze the potential impacts to the natural resources along the Southern route. Since previous pipelines have already disturbed this area it is assumed that this route will have fewer and mainly short term impacts on the Town's natural resources.

	Northern Route	Southern Route
Type II & III Soils (prime agricultural soils)	4600' = 0.87 mi	1300' = 0.25 mi

Geology

Northern Route

An extremely uncommon geologic formation called Lag Gravel is present along the Northern route in at least two known areas.

Geology

Southern Route

No know unique geologic features have been identified along the Southern route.

Northern Route

Topography

There are significant and frequent elevation changes along this proposed route. The pipeline will enter Nassau at an elevation of approximately 500 above sea level and eventually climb to an elevation of 1100 feet in the Alps before crossing into Stephentown. In some cases, the pipeline descends and ascends over 300 feet of elevation change within a 2/10th of a mile or a 30% up hill and down hill grade. Most of these steep valleys have streams and wetland areas at the bottom of the grades. This type of topography will require extensive movement of earth to enable the pipe to be laid without sharp bends. While the spoils will be put back into place and the finished project profiles will closely resemble the original topography, even with extensive mitigation measures the history of pipeline projects has shown that there are often extensive natural resources impacts. The bio-diversity and productivity of the streams and wetlands will be negatively impacted by the widened corridor, eventual sedimentation, and invasive species that are more easily introduced on the disturbed lands.

On the steep side hill sections of the Northern route, in order to lay the pipe, significant cut and fill areas will have to be created in order to allow trenching machines to properly operate. Again this means more disturbed land and potentially wider temporary construction and permanent ROW corridors.

Topography

Southern Route

This route has a much gentler topography with far fewer significant slope changes. The proposed pipeline would enter Nassau at an elevation of approximately 450 feet. Over the next 1.6 miles, the pipeline would climb to a high point of approximately 640 feet (mile marker 37.8), and then over the next 1.35 miles would leave Nassau at an elevation of 510 feet. Construction along this route will impact fewer streams and wetlands and the amount of earth needed to be moved near these streams and wetlands will be far less.

F. PONTENTIAL IMPACTS FROM COMPRESSOR STATION

1. THE COMPRESSOR

The Kinder-Morgan proposal includes a major gas pipeline compressor station for a location somewhere in a four mile corridor in the vicinity of western Nassau or adjacent eastern Schodack, along the National Grid New Scotland-Alps overhead electric transmission line. Details in the most recent "Resource Reports" filed by the company in March, 2015 are incomplete, at best. The compressor station is described only as a 90,000 horsepower facility that will boost pipeline pressures: compressors are also proposed at eight other locations along the length of the proposed Kinder Morgan Northeast Direct pipeline throughout New York and Massachusetts.

The proposed compressor station for the Schodack-Nassau vicinity will reportedly be the largest such station associated with the Northeast Direct pipeline project. This scale of facility is over three times the size and capacity of the existing Tennessee Gas - Kinder Morgan Compressor Station 254 located near Ryders Mills at NYS Route 66, a short distance south of the Town of Nassau in the Town of Chatham. *The NRC committee finds it to be unconscionable that the FERC allows pipeline proponents to not disclose location information for such a major facility at a point over 6 months into a planning process that is intended to foster public information exchange.*

The compressor station study corridor along the transmission line route in the western portion of the Town of Nassau does not identify access constraints to much of that corridor for purposes of construction and operational access to the corridor and any potential compressor station locations. Compressor station components, including the compressor turbines and associated equipment, are over-sized facilities that will require large truck-trailers for component deliveries. Clarks Chapel Road is posted with 10 ton weight limits, due to significant limitations of bridges near Central Nassau Road and Slivko Road. Slivko Road is a single lane, dead-end dirt road with limiting grade and curving alignment. County Route 15 has extremely steep slopes to both the east and west that will limit accessibility to locations along the transmission line corridor from the roadway. These three roads represent the primary access routes to the proposed pipeline corridor location along the electric transmission line route in Nassau. Boyce Road in the Town of Schodack is the access point to the corridor to the western side of Nassau, and there is a pond completely crossing the electric transmission corridor that precludes access from the west. These limitations on accessibility should be identified as limiting the feasibility of developing a mainline compressor station within the identified compressor station study corridor in the Town of Nassau.

2. AIR QUALITY

Resource Report 9 addresses "Air and Noise Quality" issues generally. Most details are lacking from the most recent (March 2015) resource report, since no specific location for the compressor stations have been identified. In a discussion of general air quality

characteristics, Rensselaer County is identified as a non-attainment area for ozone (O3) with respect to the 8-hour 1997 standards of NYS DEC (Resource Report 9, Table 9.1-10). Ozone is a problem for people suffering with asthma, and is a precursor constituent pollutant for particulate matter formation. (The NYS Health Department recently issued an Air Quality Hazard Warning for the middle Hudson Valley including adjacent Columbia County due to potentially hazardous ozone level predictions: May 8, 2015).

Compressor stations are potential sources of air pollution constituents including ozone (03), oxides of nitrogen (NOx), oxides of sulfur (SOx), particulate matter, volatile organic compounds (VOC), and visible emissions (opacity). Emissions points include exhaust from combustion turbines, combustion engines, and emergency back-up generators, boilers and fuel gas heaters, as well as releases or leaks from various pipeline and station valves, vents, and connections (methane and ethane leaks of natural gas). Venting of pipeline natural gas occurs intermittently due to emergency blowdowns or station shutdowns for maintenance purposes.

Regulatory requirements for air quality and emissions permits are based in federal and NY State permit requirements. Several pollutants or facility components are exempt from air quality permitting reviews, such as emergency generators that run less than 500 hours per year. Special federal regulations for compressor station turbine operation are less stringent than would otherwise be applicable by New Source Prevention Standards (e.g., for NOx emissions).

While the natural gas fired compressor station is anticipated to fully comply with the Title V permit requirements for air pollution controls, this is not an assurance that emissions are minimized and public health and environmental quality impacts are reduced to either the "best available" or "reasonably achievable" levels available through the use of alternative technologies. An alternative technology to a natural gas-fired compressor turbines is an electric powered compressor facility. Operational efficiencies of gas turbine combustion compressors as proposed by Kinder Morgan are in the range of 30 percent, rather lower than the operational efficiencies of modern combined cycle electric generation facilities, which are in the range of 60 percent. An analysis of life-cycle emissions and efficiency of gas-fired compressor station versus an electric powered facility should be requested as part of project scoping. Kinder Morgan reportedly proposes to site an electric powered compressor at one of nine planned compressor "locations" as part of the Northeast Direct project, as reported by Kinder Morgan personnel to NRC members at the April Open House meeting in Schodack, NY. The NRC recommends that any compressor station that is located within the Town of Nassau or otherwise within Rensselaer or Columbia County be electric powered to significantly reduce the emission of air pollutants (as well as operational noise).

Air emissions of pipeline construction are described generally, with additional information to be included in a future updated Resource Report 9 to FERC by Kinder Morgan. Likely controls will be to use low-sulphur diesel fuel in construction equipment,

and promises to limit the extent and duration of construction vehicle idling during construction activities.

3. NOISE AND VIBRATION EMISSIONS

Noise due to project construction and operation is discussed in a limited fashion in Resource Report 9 at section 9.2. Due to the incomplete nature of the project proposal, the lack of specific compressor station design or capacity criteria, or the unwillingness of the developer to disclose details of the most significant components of its proposal, the Noise assessment is incomplete as of the March 2015 filing. The developer proposes to identify details of noise in a future update to the Resource Report 9. Potential noise sources at a compressor station are numerous and include components such as the combustion turbine, the exhaust stack outlet of the combustion turbine, air inlets, cooling system fans, exposed station piping, gas heaters, dehydrators and gas treatment equipment and gas blowdown vents.

In a description of applicable regulatory criteria, regulations and rules regarding noise, the Resource Report describes the FERC-adopted Environmental Protection Agency (EPA) recommended methodology for addressing significant noise impacts. This methodology is based on assumptions including that ambient noise levels are in the 40 deciBel (dB) range, and that increases from that level are acceptable up to a point of about 48 dB.

The Report also mischaracterizes the NYS DEC Noise Program Policy as not having any specific goals or design objectives. While the DEC Program Policy has problems, including a misguided methodology for defining ambient noise levels by allowing use of an average equivalent basis (Leq) rather than the standard L90 metric for determining ambient sound, the Program Policy does identify specific design goals and objectives of minimizing noise level increases and limiting allowable increases of up to 6 dB above ambient.

There are few industrial noise sources in the Town of Nassau. There are no such noise sources within the compressor station study corridor identified in the Kinder Morgan environmental reports. The major noise source in the study area is the Nassau Sportsman's Club on Boyce Road in the Town of Schodack and bordering on the Town of Nassau. Gun range noise is an intermittent noise source limited to day time occurrences. Proposed compressor station noise for pipeline operations will be continuous, with limited interruptions for planned or unplanned outages. Periods of outages are likely to be associated with extreme noise events including station blowdown, when high-pressure gas is vented to atmosphere in short-duration (3 minutes long) events that can sound similar to jet engine take-off. Resource Report 9 does not include any information about blow-down noise. (Note: blow-down events, as witnessed by an NRC member, at the Kinder-Morgan Chatham Compressor Station 254, are extremely loud and are associated with emission of natural gas that is strongly odorized for smell detection.)

The standard assumption that ambient noise levels in rural areas are in the range of 40 dB, and that increases of noise above that level up to 48 dB are acceptable is mis-placed for the project study corridor in Nassau. Short-term noise measurements in the vicinity of the area identified as the study corridor for the 90,000 horsepower compressor station were made by a member of the NRC over a period of several nights in the early part of April, 2015. The measurements were meant to provide a characterization of the ambient sound environment. Measurements were short-term, made at night-time conditions (between 10:00 PM and midnight) during periods of no wind or low wind (zero to 2 miles-per-hour) and during dry (no-rain) conditions. Measurements were discarded if intermittent noises occurred during measurement, such as dogs barking, birds chirping, cars passing, or aircraft fly-overs per appropriate protocols for determining ambient sound levels. Measurements were conducted prior to the emergence of spring peepers in mid-April.

Based on a series of measurements made on several nights of favorable conditions, the sound environment in the rural area of the proposed pipeline compressor station study area can be characterized as very quiet: levels of 26 to 30 dB(A) were recorded on a setting which approximates the L90 metric appropriate for determining ambient sound environment. These levels were at or below the effective "floor" or lowest level capability of the Type 2 sound meter used for measurement, and may not be fully representative of the actual levels, which are potentially even quieter than the meter used is capable of registering.

With ambient sound levels at these very quiet conditions, the FERC sound level criteria of 55 Ldn (effectively 48.6 dB(A) at night) would represent an increase of 20 dB or more - a significant and adverse increase in noise above ambient levels at noise-sensitive receptors, and particularly at residences during night-time hours of 10 PM to 5 AM.

The Resource Report indicates that no noise ordinances or regulations are in effect in the vicinity of the compressor station study area. The NRC recommends that the Town of Nassau act on the objectives identified in the Town Comprehensive Plan and adopt noise control requirements for commercial or industrial development in a residential area, such as the proposed compressor station (Town Comprehensive Plan, pg. 61). Appropriate requirements of an ordinance for industrial or utility noise sources would require: establishment of actual ambient noise levels based on L90 metric measured with a Type 1 sound level meter at night time (10 PM to 5 AM) by an acoustical engineer or acoustician; meeting a sound level appropriate to protecting noise sensitive receptors from significant increases in noise above the documented ambient levels; meeting a maximum sound level at the property line of the noise source; and preclusion of prominent discreet tones. Compliance monitoring measurement criteria should be specified, including the measurement of sound frequencies in one-third octave bands and analysis to demonstrate the preclusion of prominent discreet tones.

Large gas turbine compressors may also create vibrations and infra-sound at frequencies below the threshold of hearing. While not considered audible sound, vibration and sound level pressures at low frequency can result in annoyance, sleep interference, and

potentially health effects. The analysis of project-induced vibrations and infra-sound generation due to compressor operations should be requested in project scoping, turbine manufacturer data should be provided, and analysis sufficient to demonstrate that vibrations and low-frequency infra-sound will not affect the surrounding community.

4. VISUAL AND AESTHETIC CONSIDERATIONS

The Compressor Station will be proposed to include some degree of outdoor lighting to provide safe work conditions during times of intermittent station attendance. Kinder Morgan personnel reported to NRC members at the April Open House meeting that the station will not be attended on a full-time basis, but will be remotely operated. While the project will in all likelihood propose to fully light the station even when un-attended for security purposes, this may not be necessary or appropriate.

A survey of night-time lighting conditions in the compressor station study corridor was undertaken by a member of the NRC to determine the nature of night-lighting, and to characterize the existing conditions experienced by residents of the community.

There are very few full-time outdoor lights that are operated in the community surrounding the compressor station study corridor within Nassau. There is one street light (with a notably dim bulb), located at the intersection of Clarks Chapel Road and Center Nassau Road. There are two "farm-light" fixtures in the area, one attached to a residence on Clarks Chapel Road east of County Route 15, and one on a barn on Slivko Road near Clarks Chapel Road. Otherwise, the area is lighted only intermittently by household lighting, and by passing cars which are infrequent during night-time hours. The area can be characterized as experiencing dark-sky conditions, with stars and planets readily observable on average nights with skies clear of clouds. Astronomical conditions are readily observed and appreciated in the community. Obtrusive lighting is rare, and dark conditions are encouraged by the community as reported by the Town of Nassau Comprehensive Plan (pg. 63-4).

The NRC suggests that since there will be no full-time employees in attendance at the station, full time lighting of the station yard is not essential for worker safety considerations - task lighting that can be turned on when needed to perform inspection or maintenance activities can be installed and operated on an as-needed basis, as is normal at similar facilities including electric utility substation sites, which operate automatically without attendance. For security or other nominal lighting needs, appropriate lighting standards should be required to minimize off-site lighting impacts. Lighting designed to illuminate areas within the station yard, avoid light trespass beyond station limits, and avoid up-lighting should be required. Lighting should be designed by a lighting engineer and detailed in an illumination plan to specifically avoid off-site lighting impacts by use of full cut-off lighting fixtures (to eliminate off-site light spread and glare), without drop-down optics that can spread light horizontally. Lighting that does not glare or obscure colors should be used to enhance security as needed. Spot lights should be discouraged, and only be used for task lighting as needed to accomplish maintenance.

5. SAFETY AND RELIABILITY

Resource Report 11 addresses pipeline safety and reliability matters. The report is incomplete, as it does not identify important safety features including location of sectionalizing valves, blow down valves, or system communications facilities. These facilities will need to be located on the pipeline and be separated from overhead high-voltage electric transmission lines, to avoid venting of gas directly beneath the electric conductors. Areas of additional lands needed for valve stations and access improvements have not been identified.

Communications facilities have not been identified in the Resource Reports, and there is contradictory information regarding whether sectionalizing valves will be manually or remotely operated. Remotely activated controls require system communications facilities. For reference, the Constitution Pipeline, recently authorized by FERC for the same routing corridor now proposed by Kinder Morgan for the Northeast Direct Supply line from Pennsylvania to the Town of Wright, in Schoharie County, New York, will install communications towers, each 100 feet tall, at sectionalizing valves located approximately every 7.5 to 10 miles (depending on population densities and pipeline class location) along the length of the 120 mile pipeline. The Resource Report for the Northeast Direct Project does not identify the type of communications system facilities needed for either the sectionalizing valve system or the proposed compressor station. For reference, the Kinder Morgan Chatham Compressor Station 254 has a communications tower exceeding 200 feet in height, with aviation hazard lights as required by the Federal Aviation Administration. Kinder Morgan personnel at the April 13 Open House were not able or willing to state whether the proposed compressor station would require similar tower-mounted communications facilities with FAA hazard lighting. The potential for large communications towers has not been reported in the Resource Reports for this project to date: this is a significant deficiency in identifying major project components, their potential locations, and characterizing the analysis that will be made of them as well as potential siting limitations and environmental impacts that will be assessed. The NRC recommends that scoping comments address the need to identify these facilities early in project review and that full consideration of siting and environmental issues be addressed.

For purposes of comparing the existing pipeline corridor and the proposed Transmission Line pipeline route, there are at least two buildings where people congregate located within the class location corridor of 660 feet from the pipeline - the Nassau Sportsman's Club on Boyce Road (located in the Town of Schodack a short distance east of the Nassau town boundary), and the church located at the intersection of North Nassau Road and County Route 18. There are no corresponding places of public assembly located along the existing Tennessee Gas Pipeline (Kinder Morgan) corridor in the Town of Nassau.

6. LAND USE

For purposes of agricultural operations and land management, the proposed Transmission Line corridor adds an underground impediment to land fitting and agricultural operations to the existing above-ground impediments including the electric transmission poles and buried counterpoise grounding facilities on that line. Location of the additional pipeline along the existing pipeline corridor will have less impact on farming operations, where farm operators are accustomed to working over the two existing pipelines in the Tennessee Gas Pipeline (Kinder Morgan) corridor.

7. CUMULATIVE IMPACTS

The Resource Reports do not acknowledge the recent previous disturbances along the National Grid electric transmission line related to maintenance activities undertaken by that utility company in the 2013-2014 timeframe. The residents along the transmission corridor and public roadways surrounding the corridor sustained an extensive and prolonged period of disturbance due to construction activity, noise and exhaust emissions of heavy construction equipment operations, deliveries and movement of heavy equipment that interfered with traffic and left mud and dust on roadways, and continuous deliveries and removal of oversized transmission poles and gravel for access road improvements. These impacts were associated with the maintenance rebuilding of a significant amount of the high-voltage electric transmission line through Rensselaer County towns of Stephentown, Nassau and Schodack.

Within the Town of Nassau, there are lingering aspects of the activities that remain unresolved, including damage to road infrastructure and disposal of creosote-treated wood pole sections at a roadside area.

In addition to these impacts on the residents of the project area, there were impacts on natural resources associated with this construction-maintenance activity, including significant amounts of vegetation clearing, ground disturbance, habitat disruptions, soil erosion and sedimentation and associated water quality impacts.

These impacts on the human and natural environment need to be quantified and addressed in a full cumulative impacts analysis.

By comparison, there has been no significant degree of construction or maintenance activity on the existing Tennessee Gas Pipeline (Kinder Morgan) 200 line corridor through the Towns of Nassau and Schodack since the looping line construction of the second pipeline installation that occurred in the 1989-90 timeframe over 20 years ago. Cumulative impact considerations of that historic construction are negligible in contrast to the recently-experienced disruptions on the electric transmission corridor.

Another potentially significant cumulative impact of the proposed development of a new pipeline corridor through the Town of Nassau is the increase in the numbers of properties and residences that are exposed to the risk of catastrophic incidents along pipeline corridors in the town. The two existing pipelines within the common corridor at the

southern end of the town represent a risk within the hazard area along that corridor. The operation of a third line at that existing pipeline corridor will not add any significant degree of exposure in terms of additional buildings or residences to the threat of catastrophic incidents, whereas the proposed new northern pipeline corridor adds thousands of acres of area and hundreds of residences to the total number of locations in the Town that will be exposed to the threat of catastrophic incidents.

G. RECOMMENDATIONS

1. The Town should go on the record with the Federal Energy Regulating Commission (FERC) as questioning the need for and opposing the construction of the proposed Northeast Energy Direct (NED) Project.

On page 60 of the Town of Nassau's Comprehensive Plan under Environmental Health/Sustainability the Plan states as an overall goal: "Protect Nassau's resources and public health and recognize and accommodate worldwide energy, natural resources and climate trends in the development of a sustainable community." The continued extraction and use of fossil fuels only serves to delay the necessary transition of our nation and the world to a sustainable, renewable energy market. The actual need for additional natural gas in the New England States can be met by other pipeline projects that are currently much further along in the FERC approval process. It can also be met by instituting simple conservation measures. One claim that has repeatedly been raised by NED opponents is that the real purpose of the proposed NED is to make significant amounts of natural gas available to foreign markets, where energy needs and potential profits are much higher. If this is true, then the NRC believes that the issuance of a Certificate of Public Convenience and Necessity for this project would be an inappropriate use of the federal power of condemnation. KMC has not established that there is an overwhelming need for the additional natural gas to benefit the public in New England.

2. If FERC proceeds with its reviews of the NED project, the Town should go on the record with the FERC as opposing the Northern route in favor of the Southern route because of significantly fewer impacts to the Town's natural resources.

The comparison of the impacts on the Town of Nassau's natural resources (please see pages X - Y) clearly shows that the Northern route would have far more detrimental impacts on the Town's natural resources than the Southern route. The Town of Nassau's Comprehensive Plan and all its development and zoning laws call for the following goals:

- " growth and development while protecting the rural, scenic, historic, aesthetic, economic, recreational and environmental qualities of the Town."
- "to preserve and protect the physical characteristics of soils, topography, vegetation, and water resources..."
- "to encourage the management of natural resources including land, plant life, minerals, surface waters, ground waters, soils, wildlife and aquatic life throughout the town ..."

The natural resources impacts will be significantly less along the Southern route and choosing this route is more in-line with the goals of the Town's Comprehensive Plan.

3. If FERC proceeds with its review of the NED project, regardless of which route, the compressor station should be located in an area other than one zoned for rural/residential. The NRC believes that a more appropriately zoned location is found along the Route 9 corridor.

The blue shaded area along the Northern route indicates where KMC is looking to place the 90,000 horsepower compressor station. (Please refer to MAP # N1& N2). Potentially the compressor station will be sited close to or within the Town of Nassau. According to KMC engineers, the actual site location can be several miles to either side of the suggested area. Our current zoning as well as the Town's Comprehensive Plan only allows for light industrial or light Commercial use. Locating the compressor station within the Town of Nassau (or along the Northern route in the Town of Schodack) is not compatible with the rural residential character of the Town. This is an industrial facility and should be sited in an area that is zoned for that purpose. The excessive noise during normal operation as well as "blow down" periods, the security lighting necessary to illuminate the facility, the need for direct and immediate access during emergency situations logically calls for the compressor station to be sited in an Commercial/ Industrial zoned area. Approximately 1 mile west of where the Northern route moves away from the existing Tennessee Gas Pipeline, there is an area in the Town of Schodack along Route 9 that is zoned for Commercial use. The Natural Resources Committee (NRC) believes this is a far more appropriate site to locate the compressor station.

4. The NRC recommends that the Town of Nassau act on the objectives identified in the Town Comprehensive Plan and adopt noise control requirements for commercial or industrial development in a residential area, such as the proposed compressor station (Town Comprehensive Plan, pg. 61).

Appropriate requirements of an ordinance for industrial or utility noise sources would require: establishment of actual ambient noise levels based on L90 metric measured with a Type 1 sound level meter at night time (10 PM to 5 AM) by an acoustical engineer or acoustician; meeting a sound level appropriate to protecting noise sensitive receptors from significant increases in noise above the documented ambient levels; meeting a maximum sound level at the property line of the noise source; and preclusion of prominent discreet tones. Compliance monitoring measurement criteria should be specified, including the measurement of sound frequencies in one-third octave bands and analysis to demonstrate the preclusion of prominent discreet tones.

5. The NRC suggests that the Town of Nassau also consider passing an ordinance to regulate and minimize excessive facility lighting when it will extend well beyond immediate property boundaries. Since there will be no full-time employees in attendance at the compressor station, full time lighting of the station yard is not essential for worker safety considerations - task lighting that can be turned on when needed to perform inspection or maintenance activities can be installed and operated on an as-needed basis, as is normal at similar facilities including electric utility substation sites,

which operate automatically without attendance. For security or other nominal lighting needs, appropriate lighting standards should be required to minimize off-site lighting impacts. Lighting designed to illuminate areas within the station yard, avoid light trespass beyond station limits, and avoid up-lighting should be required. Lighting should be designed by a lighting engineer and detailed in an illumination plan to specifically avoid off-site lighting impacts by use of full cut-off lighting fixtures (to eliminate off-site light spread and glare), without drop-down optics that can spread light horizontally. Lighting that does not glare or obscure colors should be used to enhance security as needed. Spot lights should be discouraged, and only be used for task lighting as needed to accomplish maintenance.