

**Durham-Newmarket
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13080**



**Final Environmental Study
(Categorical Exclusion)/
Section 4(f) Evaluation**

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Final Environmental Study
(*Categorical Exclusion*)/
Section 4(f) Evaluation

Introduction

In accordance with the National Environmental Policy Act of 1969 (42 USC 4332(2)(c)) as implemented at 23 CFR 771.117(d)(3), this Environmental Study has been prepared using a systematic, interdisciplinary approach to assess the engineering considerations and environmental effects of this Categorical Exclusion project.

This Environmental Study also includes a finding of *de minimis*¹ impact on Section 4(f) historic resources per the US Department of Transportation Act. Provisions under Section 6009(a) in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the latest transportation program reauthorization, provide for a finding of *de minimis* impact on historic properties if, “*the transportation program or project will have no adverse effect on the historic site...*” after consultation under Section 106 of the National Historic Preservation Act (NHPA). See the **Cultural Resources** section for more information

Existing Conditions/ Need

Originally laid out in ca. 1820, and formalized in the mid 1930s, NH Route 108 connects the communities of Plaistow and Rochester. It is a major north-south corridor in southeastern New Hampshire and is a critical link in the Seacoast Metropolitan Planning Organization (SMPO) bicycle network and the Seacoast Area Bicycle Routes (SABR) organizations (*Exhibits A & J*). The proposed project begins at approximately the Lamprey River Bridge in Newmarket and proceeds northerly approximately 5.7 km (3.5) miles to the southerly limit of the previously constructed Oyster River bridge project, north of the NH Route 108/ Durham Point Road intersection in Durham (*Exhibit B*). The primary intent of the project is to improve bicycle, pedestrian and vehicular safety along NH Route 108 in these towns (*Exhibit C*). The roadway currently consists of a single 3.6 m (12.0 ft) travel lane in each direction with little to no paved shoulders. NH Route 108 in the project area is a main thoroughfare between the towns of Durham and Newmarket. It is also one of the main southern approaches to the University of New Hampshire’s (UNH) Durham campus. The close proximity of NH Route 108 to UNH has made it a major route for bicycle commuters into Durham from the south (*Photos A & B*).

NH Route 108 is functionally classified as a rural, major collector roadway, meaning it provides a linkage between cities, larger towns and other traffic generators. The design of the roadway should be expected to provide relatively high travel speeds and minimum interference to through movements. The AASHTO design standards specify a cross section for this type of roadway as 3.6 m (12.0 ft) travel lanes with 2.4 m (8.0 ft) shoulders.

NH Route 108 is not only an important bicycle commuter route; it is also an integral portion of a system of scenic bicycle routes in the seacoast area. This portion of NH Route 108 is not currently listed as a State bicycle route, however the sections of NH Route 108 both north and south of the project area, as well as surrounding local roads are considered state bike routes (*Exhibit K*).

1 Black’s Law Dictionary (8th ed. 1999) defines *de minimis* as 1. Trifling, minimal. 2. (Of a fact or thing) so insignificant that a court may overlook it in deciding an issue or case. 3. *De minimis Non Curat Lex*, The law does not concern itself with trifles.

The importance of this section of roadway to the cycling community and the absence of adequate shoulders has led to a considerable safety hazard for bicyclists who travel through the area.

Currently, the shoulders along this section of roadway are not of sufficient width to safely accommodate bicyclists and pedestrians. By AASHTO guidelines, 1.2 m (4.0 ft) shoulders and wider are adequate for shared bicyclist and pedestrian use, however the AASHTO guidelines² recommend wider shoulders where possible. Upon completion of this project, it is expected that the safety concerns (no shoulders) would be reduced, and this section of roadway would be added to the seacoast bicycle route.

This section of NH Route 108 is one leg (Wildcat Route #5) of the University of New Hampshire (UNH) Wildcat Transit bus system that provides service to the entire project area. This particular route has been the most successful of those operated by Wildcat Transit. Service is provided year-round, with busses running hourly when UNH is in session, and less frequently during other times of the year. The bus stops within the project limits are all “on demand” stops meaning the bus only stops if someone is waiting at the stop or desires to get off. Currently there are eighteen (18) (nine (9) northbound and nine (9) southbound) signed Wildcat Transit stops within the project area, most of which are informal gravel pulloffs (*Photo I*).

In 2002, the Average Annual Daily Traffic (AADT) on this section of roadway ranged from 10,000 to 13,000 vehicles per day (vpd), with 5% trucks, and is expected to increase to a range of 16,000 to 20,000 vpd by the year 2025. Accident data during the period of January 1996 – December 2003 indicates that 182 accidents occurred within the project limits. One hundred six (106) of these were with other motor vehicles, twenty-seven (27) were with animals, and 122 occurred during clear and dry conditions. Forty-six (46) of these accidents resulted in injuries, 136 were property damage only accidents and zero (0) involved fatalities.

Deficiencies exist throughout the project corridor. They include the following:

1. For a majority of the project corridor, the pavement width is 7.2 m (24.0 ft) with little to no paved shoulders and no accommodation for bicyclists (*Photos A & B*).
2. The roadway has several substandard vertical curves for the posted speed limits: 48 kmh (30 mph) and 72 kmh (45 mph).
3. There is substandard intersection sight distance at seven (7) intersections along the project corridor, including Dame Road, Simons Lane (both ends), Stage Coach Road, Longmarsh Road, Laurel Lane (north end) and Durham Point Road.
4. Additional deficiencies at the Durham Point Road intersection include the current Y-configuration with two-way traffic on the narrow south leg, the 10% approach grade on the south leg and left turns from NH Route 108 that meet the warrant for a turn lane (*Photo G*).

² AASHTO Guide for the Development of Bicycle Facilities

5. The Bennett Road intersection has a substandard approach grade and angle from NH Route 108 (*Photo W*).
6. The Longmarsh Road intersection meets the warrant for a left turn bypass shoulder on NH Route 108.
7. The Stagecoach Road intersection marginally meets the warrant for a left turn lane from NH Route 108.
8. There are inadequate sidewalk facilities within the developed area in Newmarket and there is no connection between existing sidewalks on NH Route 108 and Durham Point Road.
9. There are informal, gravel Wildcat Transit bus stops (*Photo I*). Currently, there is a grade difference between the roadway pavement and the widened gravel area, which is a safety concern.

Proposed Action

The proposed improvements, from south to north, consist of the following (*Exhibit C*):

1. Bay Road to Dame Road (0.4 km (0.25 mi))
From Bay Road north to Dame Road in Newmarket, overlay and re-stripe the existing pavement to recreate the 3.3 m-1.2 m (11.0 ft-4.0 ft) typical section (3.3 m (11.0 ft) travel lanes with 1.2 m (4.0 ft) shoulders³). Construct a 1.5 m (5.0 ft) wide sidewalk along the east side of the roadway between Bay Road and Sanborn Avenue, and from the Getty Station to Dame Road (*Simulations B & C*).
2. Dame Road to Simons Lane South (0.5 km (0.3 mi))
Starting at Dame Road and continuing north to Simons Lane, rehabilitate the existing pavement and construct a 1.2 m (4.0 ft) wide shoulder and 1.5 m (5.0 ft) wide curbed sidewalk along both sides of the roadway. The roadway will be striped for a 3.3 m-1.2 m (11.0 ft-4.0 ft) typical section.
3. Simons Lane South to Stagecoach Road (0.6 km (0.4 mi))
Beginning at the south intersection with Simons Lane (*Photo D*), rehabilitate the existing pavement and construct 1.2 m (4.0 ft) shoulders for a 3.3 m-1.2 m (11.0 ft-4.0 ft) typical section. Construct a 1.5 m (5.0 ft) wide curbed sidewalk section along the east side of the roadway.

3 The AASHTO standard cross section for this type of roadway is 3.6 m (12.0 ft) travel lanes with 2.4 m (8.0 ft) shoulders. The NHDOT Assistant Commissioner will have to issue a formal design exception from AASHTO design standards for the construction of this reduced typical cross section.

At the intersection with Stagecoach Road (*Photo H*), construct a 85 m (280 ft) long, 3.0 m (10.0 ft) wide bypass shoulder along the west side of the roadway to accommodate the left turning traffic at this location.

4. Stagecoach Road to Bennett Road (2.2 km (1.4 mi))

Rehabilitate the existing pavement and construct 1.2 m (4.0 ft) shoulders for a 3.3 m-1.2 m (11.0 ft-4.0 ft) typical section. Work at this location (“the flats”) (*Photo R*) maintains the existing profile of the roadway to the extent possible so as not to exacerbate flooding concerns.

This area has a history of periodic flooding, which does not cause damage to the roadway, but is more of a “bathtub effect” of the mixing of two (2) watersheds (Lamprey and Oyster Rivers). See the *Floodplains/ Floodways* section for more information.

5. Bennett Road to Laurel Lane South (0.9 km (0.6 mi))

Rehabilitate the existing pavement and construct 1.2 m (4.0 ft) shoulders for a 3.3 m-1.2 m (11.0 ft-4.0 ft) typical section (*Simulation A*). Just north of Longmarsh Road (*Photo E*), shift the roadway alignment slightly west to reduce impacts to the Anderson residence (Parcel 82). Minor work is proposed on the Longmarsh Brook (Hamel Brook) Bridge, primarily consisting of coping and rail rehabilitation, as the existing structure is in good condition and has enough width to accommodate the proposed design (*Photo P*).

Improve the intersection of NH Route 108 and Bennett Road by reducing the pavement width at the intersection throat. The downgrade on Bennett Road approaching the intersection and the abrupt crest on Bennett Road will be perpetuated (*Photo W*). There was no local support for addressing the deficiencies on Bennett Road.

Construct a 3.0 m (10.0 ft) wide bypass shoulder opposite Longmarsh Road that would extend southerly for approximately 75 m (250 ft) to become a right turn deceleration shoulder for Bennett Road. Construct a similar bypass shoulder opposite Bennett Road.

6. Laurel Lane South to Durham Point Road (0.7 km (0.45 mi))

Rehabilitate the existing pavement and construct 1.2 m (4.0 ft) shoulders for a 3.3 m-1.2 m (11.0 ft-4.0 ft) typical section (*Simulation D*). Construct a suitable platform at the Laurel Lane (south) approach for cars exiting Laurel Lane (*Photo F*). North of Durham Point Road, the project matches into the southern end of the previously constructed Oyster River Bridge project.

Construct granite curbing and a grass panel with back curb at several locations to minimize impacts to contributing elements of the National Register Durham Historic District (*The Durham District*) (*Exhibit F*). Between the Laurel Lane intersections granite curbing is proposed along the west side of NH Route 108. On the opposite side of the roadway, impacts are similarly minimized with slope work in front of historic properties.

Between Laurel Lane North and Durham Point Road, construct granite curbing along the east side of NH Route 108 to minimize impacts. The alignment is also shifted slightly to the west here to further minimize impacts on the east side.

At the Durham Point Road intersection limit the south leg of the Y-intersection to one-way eastbound traffic. To accommodate the left turning traffic from Durham Point Road that will be required to use the north leg of the intersection, reconfigure the north leg of the intersection to intersect at a near 90 degree angle.

Construct a sidewalk along the east side of NH Route 108 from the Oyster River Bridge project, south to Durham Point Road, up the northern side of the triangle and across the south leg of Durham Point Road, continuing up the south side of the roadway to the limits of the project along Durham Point Road.

7. Replace existing deficient sections of guardrail throughout the project limits. Currently, there is cable guardrail that does not meet Federal crashworthiness requirements. All substandard sections will be replaced with beam guardrail, or eliminated where roadway slopes can be flattened to eliminate the need (*Photo J*).
8. Replace and/or extend numerous roadway cross culverts within the project limits. These culverts primarily carry intermittent streams and roadway drainage under NH Route 108 (*Photo K*).
9. Construct several stormwater treatment areas (likely swales). Potential sites are still being evaluated, however three (3) potential locations have been identified in Newmarket, and two at Parcels 53 and 54, within *The Durham District (Photo C)*.
10. Formalize and/or consolidate the informal Wildcat Transit bus stops

Alternatives to the Proposal

“No-Build”

The “No-Build” alternative is not considered feasible and prudent as it does not address the existing safety deficiencies along this portion of NH Route 108. The lack of paved shoulders, coupled with the projected increases in AADT (in 2002 varying between 10,000 and 13,000 vpd and projected to increase to between 16,000 and 20,000 vpd by the year 2025), would result in an unsafe roadway for vehicles, bicyclists, and pedestrians. Safety deficiencies at several intersections would not be addressed. In addition, the impacts associated with the proposed action are not of a magnitude to warrant the selection of this alternative.

Bypass Alignment Alternatives

Area-Wide Bypass Alternatives

Alignments that “completely” bypass this section of NH Route 108 are beyond the scope of this project. Although construction of any such alignment would avoid impacts to *The Durham District*, the Doe-Mooney-Dame-Stevens Farms Historic District (*The Farms District*), the Newmarket National Register Historic District (*The Newmarket District*), as well as individually eligible properties along the project corridor, there would be a need to acquire extensive amounts of new right-of-way (*Exhibits F-H*). Any area-wide bypass would also have far greater impacts on undeveloped properties, streams, wetlands, viewsheds, and would substantially increase project costs. Moreover, there would still be a need to complete some remedial improvements along the bypassed portion of NH Route 108. As such, area wide bypass alternatives were not selected.

Durham National Register Historic District Bypass

Although an alignment that bypasses *The Durham District* would remove traffic entirely from the District, the amount of new right-of-way required, including the acquisition of several residences, would likely raise serious public concern. This bypass would cause a reduction in open spaces and would impact natural resources with at least one (1) new crossing of the Oyster River, which is tidal water, additional wetland impacts, and the clearing of forested lands and associated wildlife habitat (*Exhibits E & F*). Moreover, there would still be a need to complete some remedial improvements along the bypassed portion of NH Route 108. Following completion of these improvements, ownership and all future maintenance responsibility of the bypassed portion of roadway would be turned over to the town of Durham, imposing an increased tax burden on the citizens of Durham. As such, this alternative was not selected.

Doe-Mooney-Dame-Stevens Farms Historic District Bypass

Although an alignment that bypasses *The Farms District* would remove traffic entirely from the District, the amount of new right-of-way required would likely raise serious public concern. This bypass would cause a reduction in open spaces and would impact natural resources with at least one (1) new crossing of Beaudette Brook, additional wetland impacts, and the clearing of forested lands and associated wildlife habitat (*Exhibits E & G*). Moreover, there would still be a need to complete some remedial improvements along the bypassed portion of NH Route 108. Following completion of these improvements, ownership and all future maintenance responsibility of the bypassed portion of roadway would be turned over to the town of Durham, imposing an increased tax burden on the citizens of Durham. As such, this alternative was not selected.

Project Wide On-Alignment Alternatives

3.6 m-2.4 m (12.0 ft-8.0 ft) Typical Section

AASHTO design standards require a minimum lane width of 3.6 m (12.0 ft) and a minimum shoulder width of 2.4 m (8.0 ft) for this section of NH Route 108. As part of the Environmental Assessment process for the Durham P-3856, RS-225(5) project in 1986, the Department evaluated the construction of this typical section from a point approximately 579 m (1,900 ft) south of Bennett Road, northerly to the limit of the Oyster River Bridge project, just north of the Durham Point Road intersection. This project would have corrected the lack of shoulders as well as horizontal and vertical alignment deficiencies along the project corridor. At a public hearing on January 7, 1986, the residents living along this section of NH Route 108 and Durham Point Road spoke in overwhelming opposition to the project, citing safety concerns (increased travel speeds), right-of-way involvement and involvement with contributing elements of *The Durham District*. As such, this alternative was not selected.

3.6 m-1.2 m (12.0 ft-4.0 ft) Typical Section

The construction of 3.6 m (12.0 ft) travel lanes with 1.2 m (4.0 ft) shoulders within un-developed portions of the project area, primarily in the "flats," was examined. While this alternative met the project purpose and need of providing safe shoulders for pedestrians and bicyclists and providing a safer roadway in general, there was still additional right-of-way required, and wetland and historic resource impacts were slightly greater than those for the construction of a reduced 3.3 m-1.2 m (11.0 ft-4.0 ft) typical section. Moreover, the narrower travel lanes as part of the proposed action can have a calming effect on traffic, encouraging reduced travel speeds. As such, this alternative was not selected.

Off Alignment Bicycle Path

During the early stages of preliminary design, the Lamprey River Local Advisory Committee (LRLAC) recommended the construction of an off-alignment bicycle path between Durham and Newmarket that follows the east side on NH Route 108. The construction of such a path would have required additional wetland impacts and far greater impacts to historical resources and other natural, undisturbed areas. Furthermore, it is widely felt that in order for bicycle accommodations to be utilized as a viable transportation alternative, it needs to be as efficient as possible. An off-alignment path would not be the most direct route between Durham and Newmarket, and would not be used as much as wider shoulders. It is likely that many bicyclists would remain in the NH Route 108 corridor.

Intersection Alternatives

Durham Point Road

2.4 m (8.0 ft) Bypass Shoulder

This alternative would have provided a 2.4 m (8.0 ft) bypass shoulder on the west side of NH Route 108 to allow vehicles the ability to pass those turning onto Durham Point Road. The volume of turning traffic meets the warrant for a full turn lane, however the chairman of the Durham Historic District Commission expressed a desire to limit the right-of-way impacts, and to keep traffic moving slowly through *The Durham District*. The Commission felt that a 2.4 m (8.0 ft) bypass shoulder would allow for faster travel speeds and, insofar as possible, the roadway width should be minimized to preserve the historic aesthetics of the area as the traveling public approaches downtown Durham from the south. Based on input from Town Officials, and comments at the Public Informational Meeting, there was limited support for this alternative. As such, it was not selected.

Left Turn Lane

This alternative would have provided a full 3.6 m (12.0 ft) left turn lane for vehicles turning onto Durham Point Road from NH Route 108. The volume of turning traffic meets the warrant for a turn lane, however the chairman of the Durham Historic District Commission expressed a desire to limit the right-of-way impacts, and to keep traffic moving slowly through *The Durham District*. The Commission also felt that, insofar as possible, lane widths should be minimized to preserve the historic aesthetics of area as the traveling public approaches downtown Durham from the south. This alternative was supported by several bicycle advocacy groups as the safest alternative for bicyclists, however, based on input from Town Officials, and other comments at the Public Informational Meeting, it was not selected.

Bennett Road

Southern Relocation #1

Relocating the Bennett Road intersection approximately 61 m (200 ft) south of the existing intersection to improve the approach grade and skew angle on Bennett Road was originally proposed by the Department. However, testimony at the Public Hearing did not support this design. Public Officials and the general public preferred to keep the existing skew and that moderate throat improvements would meet the safety concerns. (*Simulation E & Photo W*).

Southern Relocation #2

Relocating the Bennett Road/ NH Route 108 intersection further south (beyond the 61 m (200 ft) proposed) was evaluated and presented at the Public Informational Meeting. This alternative was not selected, as it would not have provided the same level of improved sight distance for vehicles exiting Bennett Road due to a crest on NH Route 108. In addition, the property and right-of-way impacts would

have been greater, resulting in more Section 106 historic resource impacts within *The Farms District*. As such, it was not selected.

Stagecoach Road (Full Left Turn Lane)

This alternative would have provided a full left turn lane for southbound vehicles turning left onto Stagecoach Road. The volume of turning traffic at this intersection marginally meets warrants for providing a left turn lane. The property and right-of-way impacts would have been greater than those required for the proposed action. The Durham Town Officials requested that the limited improvements be made for these reasons. As such, this alternative was not selected.

Evaluation of Environmental Effects

The effects of the project relative to the following social, economic, natural and cultural resources/issues have been reviewed. Resources/issues, which are not discussed in the body of the report, were investigated, however it was determined that no impacts would result. As such, these resources/issues are omitted from this environmental documentation. The resources and issues deemed applicable for this project are indicated in **bold** type.

Resources/Issues

	<u>Social/ Economic</u>	<u>Natural</u>	<u>Cultural</u>
Safety	Farmlands	Water Quality	Historical
Transportation Patterns	Community Services	Wetlands	Archaeological
Air Quality	Energy Needs	Surface Water	Stonewalls
Noise	Utilities	Groundwater	Aesthetics
Displacements	Environmental Justice	Floodplains	
Hazardous Materials	Construction Impacts	Wildlife	
Neighborhoods		Fisheries	
Business Impacts		Endangered Species	
Land Acquisition		Natural Communities	
Land Use		Wild & Scenic Rivers	
Tax Base		NH Designated Rivers	
Recreation		Forest Lands	
Public Lands		Coastal Zone	

Discussions of the effects on resources/issues in **bold** follow.

Safety/ Transportation Patterns

The intent of the proposed project, which includes the widening of NH Route 108 and the reconstruction/ realignment of several intersections, is to provide a bikeable community between Durham and Newmarket. Once completed, the project will improve the level of safety on this section of roadway

to vehicular traffic, and bicyclists and pedestrians by providing a widened shoulder, safer intersections and correcting deficiencies in the vertical and horizontal geometry of the roadway.

NH Route 108 is an important bicycle commuter route in the seacoast area, however this portion of roadway is not currently listed as a state bicycle route. Sections of NH Route 108 both north and south of the project area, as well as surrounding local roads are considered state bicycle routes (*Exhibits J & K*). The importance of this section of roadway to the cycling community and the absence of adequate shoulders has led to a considerable safety hazard for bicyclists who travel through the area. Currently, the shoulders along this section of roadway are not of sufficient width to safely accommodate bicyclists and pedestrians (*Photos A & B*). Upon completion of this project, design deficiencies and driver expectancy will be improved, which will result in a safer shared use of the roadway.

The posted speed limit within the project area varies from 48 kph (30 mph) to 72 kph (45 mph) and will not change as a result of this project. Accident data during the period of January 1996 – December 2003 indicates that 182 accidents occurred within the project limits. One hundred six (106) of these were with other motor vehicles, twenty-seven (27) were with animals, and 122 occurred during clear and dry conditions. Forty-six (46) of these accidents resulted in injuries, 136 were property damage only accidents and zero (0) involved fatalities. See **Existing Conditions/ Need** section for more information.

Each automobile accident has an associated expense and incurs a societal cost as it relates to increased insurance premiums, emergency response, clean-up, and material damage. According to the National Highway Traffic Safety Administration (NHTSA), the average fatal automobile accident has a societal cost of approximately \$3 million. The average “injury only” accident costs \$63,000, and the average property damage only accident costs \$2,300. In the year 2000 in New Hampshire alone, the economic cost of motor vehicle traffic accidents was approximately \$1.014 billion. For the accident study period (January 1996 – December 2003), the societal cost of accidents on this section of roadway was approximately \$3.2 million, using the estimators above.

Air Quality

This project is located in a part of the State that is classified as a “moderate” ozone non-attainment area pursuant to the Clean Air Act Amendments of 1990 (CAAA) and the revised 8-hour National Ambient Air Quality Standard (NAAQS) for ozone. It is included in the publication “FY 2005-2007 Conformity Determinations for Transportation Improvement Programs, Transportation Plans, and Regional Emissions Analysis of Transportation Projects in New Hampshire’s Nonattainment Areas,” November 23, 2004. The US Environmental Protection Agency (EPA) and the US Department of Transportation (USDOT) reviewed this report. The conformity determinations were found to be in conformance with the State Implementation Plan and the CAAA and were approved by the USDOT. The project has not been revised since completion of the conformity analysis.

The area is in attainment with respect to the NAAQS for all other criteria pollutants (CO, NO_x, VOCs, and PM₁₀). The proposed work is not considered a “Regionally Significant Project” as defined in the final Transportation Conformity rules (40 CFR 51.392) or in the rules adopted by the New Hampshire Department of Environmental Services in accordance with the interagency consultation provisions required by 40 CFR 51.402. When completed, the project will not result in significant air quality impacts

nor contribute to violations of the NAAQS. Consequently, the project has been determined to be exempt from the requirement that a conformity determination be made.

The nature of the proposed action, construction of shoulders and sidewalks on an existing road in essentially the same location and with no additional travel lanes, is a type of project that has been classified as “neutral” in the final transportation conformity rules. Under these rules, the USDOT and the EPA have agreed that neutral projects will not impact regional emissions and are exempt from conformity determinations. They have also agreed that these “neutral projects” do not require localized carbon monoxide impact analysis because of the minimal potential for adverse emissions impact. Therefore, it can be concluded that this project will not create new NAAQS violations, increase the frequency or severity of existing NAAQS violations, or delay attainment of the NAAQS.

Noise

In accordance with the *NHDOT Policy and Procedural Guidelines for the Assessment and Abatement of Highway Traffic Noise for Type I Highway Projects*, The Department will conduct noise impact assessments during the preliminary design phase of the highway project development process to assess noise impacts and determine the need, feasibility, and reasonableness of noise abatement measures for all Type I transportation projects. This project, with no proposed additional through-traffic lanes, is not a Type I highway project. Therefore, this project does not require a study to assess highway traffic noise impacts and does not require consideration of noise abatement measures.

Notwithstanding, an investigation of existing (2005) and future (2025) traffic noise levels was conducted. This portion of NH Route 108 has a mix of residential and commercial land use. The noise abatement criteria established by the FHWA are Leq 67 decibels (dBA) for residential receptors and Leq 72 dBA for commercial receptors. Noise impacts occur when traffic noise levels approach (within 1 decibel), equal, or exceed the abatement criteria.

Under existing conditions, noise levels range from 43 dBA to 64 dBA at receptor locations within the project area, with most locations experiencing noise levels from 55 dBA to 60 dBA. All traffic noise levels are below the noise abatement criteria and they will not noticeably change after the project is completed. By the year 2025, the anticipated traffic noise levels at these locations are expected to increase by 1 or 2 decibels due to increasing traffic volumes. Traffic noise levels will range from 44 dBA to 65 dBA throughout the project area, with most areas experiencing noise in the 56 dBA to 62 dBA range. Again, all levels will be below the noise abatement criteria and will not change as a result of the proposed improvements.

Construction activities may temporarily increase noise due to the use of heavy equipment. The noises generated during construction may exceed the FHWA criteria. However, these noise levels are expected to return to normal after the project is completed and no temporary noise abatement measures are included in the project.

Hazardous Materials/ Contaminated Properties

A field review conducted in January of 2005 did not reveal the visual presence of contaminated properties within the limits of the subject project. A database search of the Department of Environmental Services (DES) One Stop Environmental Sight Information Guide indicated that there are five (5) properties with potential contamination/hazardous waste issues within the immediate vicinity of the project area. Two (2) of these sites are in the town of Durham and three (3) are in Newmarket.

- Formerly owned by Ruth Chamberlin, this parcel located at 28 Newmarket Road in the town of Durham (Parcel 55), has undergone remediation for an on-premise use facility containing fuel oil, discovered on August 18, 1993. The file is closed, however cleanup costs associated with contamination from this site are permanently eligible for Oil Discharge and Disposal Cleanup Fund (ODDCF) reimbursement by NHDES.
- The Great Bay Animal Hospital/Kennel operates a facility located at 27 Newmarket Road in the town of Durham (Parcel 56). This property is being monitored and managed for control of “underground injection.” This project was initiated on November 17, 1993 and is still listed as open.
- The Lamprey River Bowling Lanes site is located at 22 North Main Street in the town of Newmarket (Parcel 135). This property has undergone remediation for a leaking underground storage tank discovered on May 8, 1995. The file is closed, however cleanup costs associated with contamination from this site are permanently eligible for ODDCF reimbursement.
- The Newmarket Getty site is located at 37 North Main Street in the Town of Newmarket (Parcel 112). This property has undergone remediation for a leaking underground storage tank discovered on September 29, 1993. The file is currently unassigned. Cleanup costs associated with contamination from this site are eligible for ODDCF reimbursement.
- Thomas Marquis owns a parcel located at 24 North Main Street in the Town of Newmarket (Parcel 134). This property has undergone remediation for an oil spill or release, which was discovered on December 17, 1997. The file is closed and the sites eligibility for ODDCF reimbursement is unknown.

An Initial Site Assessment (ISA) was completed on May 4, 2005 (*Exhibit N*).

Neighborhoods/ Business Impacts

The existing roadway was originally laid out in ca. 1820, and formalized in the mid 1930s with various improvements completed by NHDOT Maintenance personnel. The project area is typical of New Hampshire, containing a mix of residential, commercial and community properties (church) (*See Photos A, B & U*). The proposed improvements will improve the quality of life for residents by:

- Providing widened [1.2 m (4.0 ft) wide] paved shoulders. These shoulders will provide a safe area for pedestrians and bicyclists on this section of roadway.
- Reducing the travel lane width from 3.6 m (12.0 ft) to 3.3 m (11.0 ft), which should have a calming effect on traffic, encouraging slower driving speeds, thereby enhancing safety.
- Correcting intersection deficiencies at Durham Point Road, Bennett Road, Stagecoach Road and Longmarsh Road.

- Formalizing and/or consolidating the informal Wildcat bus stops.

There are several businesses within the limits of this project: they include The Great Bay Animal Hospital, Core Health Services, Inc., Mill Pond Trust, Inc., D.S.C. Rowing Center, a laundromat, Ace Hardware, Oyster River Real Estate Agency, and Getty Gas Station, among others (*Photo U*). There are no substantial changes to the roadway at these locations that would adversely affect business operations. Although individuals and businesses may experience temporary increases in noise and dust levels while the project is being constructed, they will be temporary and are anticipated to return to normal once the project is completed. At least one lane of traffic, and access to all properties will be maintained at all times during construction.

Land Acquisition/ Tax Base

The proposed project will require the acquisition of 1,603.9 m² (17,264.6 ft²) of land outside of the existing right-of-way, 10,400.0 m² (111,944.7 ft²) of permanent easements, and 8,769.9 m² (94,323.1 ft²) of temporary easements along the roadway to accommodate the work associated with this project (See **Property Impacts Table** below) (*Exhibit A*). With the incorporation of appropriate mitigation, including landscaping, and rebuilding stonewalls, the takings will not have a serious impact on these properties.

PROPERTY IMPACTS TABLE

Parcel #	Owner(s)	Parcel Size		Property Impacts					
				Acquisitions		Permanent Easements		Temporary Easements	
		Ha	Ac	m ²	ft ²	m ²	ft ²	m ²	ft ²
1	Solon Realty Company, LLC	0.3	0.85					4.0	43.1
2	Fieldsend, Forrest & Charlotte	0.2	0.41	24.2	260.5			29.9	321.8
3	Khounxay, Mark & Bay	0.1	0.17	21.6	232.5	462.2	4,975.1	26.0	279.9
4	Khounxay, Mark & Bay	0.1	0.23					34.6	372.8
5	Newmarket Community Church	1.4	3.40					59.0	635.1
6	Durand, Jacqueline	1.2	3.00			564.2	6,073.0	42.9	461.8
7	Wiernasz, Stanley & Mary	0.4	1.04			64.9	698.6	51.0	549.0
8	Phelps, James	1.0	2.50			38.7	416.6	46.1	496.2
9	Margaret A. Grochmal Realty Trust of 2000	1.1	2.80			26.6	286.3	37.8	406.9
10	Rasay, Stanlye & Joanne LaFleur	0.1	0.33					28.6	307.8
11	Cheney East Corporation	0.1	0.33					12.5	134.5
12	Wilson, John & Tracy	1.5	3.60					23.5	253.0
13	Cheney East Corporation	1.2	2.87					38.1	410.1
14	Colgan, John & Michelle	2.4	5.84			64.0	688.9	168.6	1,814.8
15	Gardner, Arthur & Gillian	2.4	6.01					11.1	119.5
16	Marquis, Roland & Dianne	2.5	6.30					6.8	73.2
18	Gordon & Aileen Byers Trust	1.8	4.50			82.2	884.8	187.2	2,015.0

PROPERTY IMPACTS TABLE (continued)

19	Tucker, Robert & Mathews, Marguerite	0.7	0.71			33.0	355.2	56.2	566.2
20	Wood, Craig & Deanna	1.5	3.82			24.0	258.3	14.3	153.9
21	Heisenberg, Jochen & Irene	1.0	2.46					38.9	418.7
22	Lathrop, Scott	0.8	1.90					40.5	435.9
23	Thompson, Robert & Lea	0.6	1.46					107.3	1,155.0
24	Pomerleau, Phyllis & Glen	0.9	2.30					335.3	3,609.1
25	James Dreher Realty Trust & Colleen Fuerst, Realty Trust	0.7	1.84					61.5	662.0
26	Winterbottom, Nancy	0.8	1.86			143.3	1,542.5	300.2	3,231.3
27	Ernest Cutter Realty Trust	4.2	10.50			397.9	4,283.0	505.6	5,442.2
28	James Dreher Realty Trust & Colleen Fuerst, Realty Trust	0.4	1.00			119.6	1,287.4	201.7	2,171.1
29	Walker, Judy	0.1	0.28			5.3	57.0	62.4	671.7
30	Laroche, Raymond & Dorothy	32.4	80.00			36.3	390.2		
31	Beaudet, Norman	24.3	60.00			153.0	1,646.9	703.6	7,573.5
32	Moriarty, Thomas, Timothy, Joseph, John, David, Michael & Mary Knott Trust	0.8	1.90			336.6	3,623.1	14.7	158.2
33	Heirs of Bertha Moriarty	17.4	43.00	246.3	2,651.2	1444.4	15,547.4	98.0	1,054.9
34	Smith, Wesley & Martha	0.6	1.55			97.0	1,044.1	61.9	666.3
35	University of New Hampshire							5.2	56.0
37	Schidlovsky, Michael & Karen	1.0	2.37			30.4	327.2		
38	Dutka, Michael & Denise Ann	1.2	3.03			177.0	1,905.2	21.2	228.2
39	Meadows, Dennis & MacDonald, Suzanne Gail	2.8	7.00			242.0	2,604.9	10.0	107.6
40	Meadows, Dennis & MacDonald, Suzanne Gail	1.3	3.30					7.5	80.7
41	Evelyn Robbins, Realty Trust	1.8	4.40			225.6	2,428.3		
48	Schnur, Fred & Karen	1.2	2.90			341.0	3,670.5		
52	Leighton, Charles	0.4	0.97			72.0	775.0	67.5	726.6
53	Mill Pond Center, Inc.	7.0	17.36	288.1	3,101.1	648.7	6,982.2	656.7	7,068.7
54	44 Newmarket Road, LLC	0.7	1.75	176.0	1,894.4	489.2	5,265.7	129.6	1,395.0
55	Mill Pond Trust	2.8	7.00			173.2	1,864.3	10.4	111.9
56	Great Bay Animal Hospital, LLC	1.2	2.93					8.9	95.8
58	Klaeson, Elizabeth	0.7	1.78					2.8	30.1
59	Greene, R. Douglas & Suzanne	0.6	1.50					41.0	441.3
63	Butler, Timothy & Eleanor	0.5	1.30					39.4	424.1
67	Gervasio, Karen & Sullivan, William	0.1	0.35					29.7	319.7
70	Leray, Nelson Jr. & Diane	0.7	1.73			75.4	811.6		

PROPERTY IMPACTS TABLE (continued)

71	Louis, Richard & Shea, Heidi	0.4	0.92			220.8	2,376.7		
72	Simos, Evangelos & Louisa	1.	4.00			23.3	250.8	35.7	384.3
73	Town of Durham	0.5	1.33					1.4	15.1
74	Smith, Wesley & Martha	0.5	1.15			24.0	258.3		
75	Arthur, Paul & Betty Lou	0.7	1.71					11.3	121.6
77	Frost, Benjamin & Catherine	1.2	3.08			18.3	197.0		
79	Lonsinger, Gary & Nancy	20.2	49.90			104.0	1,119.4		
80	Cataneo, Kathryn & David	0.4	1.00					23.2	249.7
82	Anderson, Mark & Diane	1.6	4.00	477.8	5,143.0	498.3	5,363.7	372.9	4,013.9
83	The Nature Conservancy	21.4	53.00			206.9	2,227.1	119.8	1,289.5
84	Bedard, Leo & Eva	85.9	212.0			130.3	1,402.5	135.4	1,457.4
85	The Nature Conservancy	35.9	97.6			1,009.2	10,862.9	325.4	3,502.6
86	EMRI Realty Trust. David M. Emery, Trustee	1.0	2.46			51.5	554.3		
87	Todd, Jeffery & Carolyn	2.8	6.80					539.2	5,803.9
88	Baker, Douglas & Elizabeth	2.9	7.20			183.8	1,978.4	73.1	786.8
90	Douglas Edmunds & Cynthia Edmunds Intervivos Rev. Trust	1.2	2.89	9.3	100.4			536.0	5,769.5
91	Harrod, Donald	0.8	1.99					313.1	3,370.2
92	Hartson, Troy	0.8	2.00			45.5	489.8	21.4	230.3
93	Pagnotta, Joseph & Nancy	1.1	2.75			235.6	2,536.0	429.7	4,625.3
94	Harriman, Stephen	0.4	1.06			39.0	419.8	265.4	2,856.7
95	Neil, Ralph & Jayne	1.0	2.40			181.6	1,954.7	32.4	348.8
96	Hardware House	0.2	0.57					37.5	403.6
97	The Friedberg Family Investment Trust	0.3	0.68			343.3	3,695.3	166.4	1,791.1
98	One Simons Lane Office Condominium Association	0.7	1.66			69.4	747.0	36.7	395.0
99	Bassett, Raymond & Margaret	1.3	3.20					81.8	880.5
100	Thorne, Edward & Doris	0.4	1.10			97.6	1,050.6		
101	The Sophie R. Homiak Realty Trust of 1998	0.3	0.69			11.6	124.9	0.8	8.6
102	Legault, David & Patricia	0.4	0.91					22.4	241.1
103	Wucher, Stuart & Donnalynn	0.2	0.57					9.3	100.1
104	Lang, Theodore & Sylvia	0.1	0.29					16.0	172.2
105	Axis Property Holdings, LLC	1.8	4.50	56.3	606.0			10.2	109.8
106	Beauchesne, Arthur	0.8	1.99	92.9	1,000.0			67.9	730.9
107	Arthur R. Beauchesne Trust 2001	0.2	0.46	12.4	133.5			175.9	1,893.4
108	Bassett, Daniel	0.2	0.41	52.5	565.1			15.2	163.9
109	Kruczek, Joseph	0.1	0.36	38.4	413.3			9.2	99.0

PROPERTY IMPACTS TABLE (continued)

110	Keller, Margurite	0.1	0.26	72.5	780.4			55.8	600.6
111	31-33 North Main Street Condominium Association	0.4	0.97	35.6	383.2			96.7	1,040.9
112	Watson NH, LLC	0.2	0.38					9.3	100.1
125	Arlene Moore Realty Trust 1997	0.1	0.25			75.9	817.0		
126	Moisan, Devan	0.1	0.31			384.7	4,140.9		
136	Pillar, Frank & Anita	0.2	0.54					158.0	1,700.7
Total(s):				1,603.9	17,264.6	10,400.0	111,944.7	8,762.9	94,323.1

The total estimated land area in the towns of Durham and Newmarket is approximately 98.4 km² (38.0 mi²). Total permanent impacts are approximately 0.012 km² (0.005 mi²), 0.012% of the total land area in these towns. As such, it is not anticipated that this project will cause a change in land use in the project area, nor is it expected to have an effect on the tax base of the towns of Durham and Newmarket. In addition, there will be no residential or business relocations required by the construction of this project.

Land Use/ Public Lands/ Community Services

NH Route 108 is both an important bicycle commuter route and also an integral portion of a system of scenic bicycle routes in the seacoast area. Upon completion of this project, it is expected that the safety concerns (no shoulders) would be reduced, and this section of roadway would be added to the seacoast bicycle route system. See the **Neighborhoods/ Business Impacts** Section for more information (*Exhibit D*).

This section of NH Route 108 is one leg (Wildcat Route #5) of the University of New Hampshire (UNH) Wildcat Transit bus system that provides service to the entire project area. This particular route has been the most successful of those operated by Wildcat Transit. Service is provided year-round, with busses running hourly when UNH is in session, and less frequently during other times of the year. The bus stops within the project limits are all “on demand” stops meaning the bus only stops if someone is waiting at the stop or desires to get off.

The Conservation Land Stewardship (CLS) Program is responsible for monitoring and protecting the conservation values of conservation easement lands in which the State of New Hampshire has invested. The proposed action has been reviewed by the Office of Energy & Planning, CLS Program Coordinator, and it was determined that there are no CLS parcels, local or state-held, in close proximity to the project area (*Exhibits R & X*).

Section 6(f) is an article of the Federal Land and Water Conservation Fund Act of 1964, which provides financial assistance for the acquisition and development of public lands to create parks and open spaces; protect wilderness, wetlands and refuges; preserve wildlife habitat; and enhance recreational opportunities under the Land and Water Conservation Fund (LWCF). Any land acquired or improved with these funds is subject to a body of federal regulations under the purview of the US Department of the Interior (USDOI). Pursuant to these regulations, any land subject to Section 6(f) cannot be “converted” to

another use for purposes inconsistent with the Act without the approval of the USDOJ and without being replaced with other land that is of equal use and value to the land proposed for conversion. Based upon a review of their LWCF files, the Department of Resources and Economic Development (DRED) has advised that there are no Section 6(f) parcels in the project area (*Exhibit S*).

Utilities

The proposed project requires the relocation of aerial utility lines and power poles and underground utilities. Disruption to service, if any, will be kept to an absolute minimum. The following utility companies have been identified within the project area:

	<u>SERVICE</u>	<u>LOCATION</u>
DURHAM:	Comcast (CATV)	Aerial
	Northern Utilities Natural Gas (Heat)	Underground
	NH Electrical Cooperative (Electric)	Aerial
	Public Service of New Hampshire (Electric),	Aerial
	AT&T Corporation (Telephone)	Aerial
	Verizon (Telephon)	Aerial
	Portsmouth Public Works Department (Water)	Underground
	Durham Public Works Department (Water & Sewer)	Underground
NEWMARKET:	Comcast (CATV)	Aerial
	Public Service of New Hampshire (Electric)	Aerial
	AT&T Corporation (Telephone)	Aerial
	Verizon (Telephone)	Aerial
	Newmarket Public Works Department (Water & Sewer)	Underground

Environmental Justice

Executive Order 12898, signed in 1994, requires that an environmental justice evaluation be conducted for all transportation projects that are undertaken, funded or approved by the Federal Highway Administration to avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, and social and economic effects on minority populations and low income populations. The environmental justice review for the proposed action indicates that there is a higher average percentage of elderly populations, at 9.3%, compared to the surrounding area, at 7.4% due to the proximity of subsidized apartment complexes for the elderly in the project vicinity.

The proposed project constitutes an “alteration” in accordance with the Americans with Disabilities Act Accessibility (ADA) Guidelines for Buildings and Facilities (ADAAG) and Title II of the ADA. As such, existing pedestrian paths, where they exist, within the project limits should be evaluated to ensure that minimum ADAAG technical requirements are met, to include curb ramps where pedestrian routes cross curbs. The law further specifies the modification of existing facilities (within the scope of work) to ensure compliance with minimum requirements. Consideration should also be given to the

installation or retrofitting of accessible pedestrian signals at pedestrian crossings within the project area (*Exhibit T*).

The proposed project includes the upgrading of pedestrian facilities. As such, improvements thereto will meet ADA guidelines. Furthermore, the incorporation of shoulders for pedestrians and bicyclists, and the improvements to bus stops will improve safety for elderly Americans.

Coastal Zone

The project is located within the coastal zone of NH. The Federal Coastal Zone Management Act (CZMA) requires Federal actions to be consistent with enforceable policies of the CZM programs enacted by the States. The enforceable policies of the CZM Program in NH include protection of coastal resources, recreation and public access, managing coastal development, coastal dependent uses, preservation of historic and cultural resources, and marine and estuarine research and education.

The NH Coastal Program is authorized under the CZMA to balance the preservation of coastal resources with the social and economic needs of this and succeeding generations. The NH Coastal Program creates and sustains partnerships with local, state and federal agencies as well as businesses and nonprofit groups to complete planning, restoration and education projects. The NH Coastal Program has determined that any project in the coastal zone that is authorized under the Army Corps State of NH Programmatic General Permit is consistent with the NH Coastal Program and does not require additional CZMA consistency review. As the project will comply with all applicable Federal and State regulatory requirements, and appropriate regulatory approvals will be obtained during final design, the project will be consistent with the enforceable CZM policies.

Surface Waters

There are several rivers and perennial streams within the project limits. These include the Lamprey River, Oyster River, Ellison Brook and Longmarsh (Hamel) Brook (*Photos L-O & S*). The Lamprey River begins in the Saddleback Mountains in Northwood and travels 29 km (47 mi) to Great Bay. It is a NH Designated River, as well as a Wild and Scenic River (See the **Wild and Scenic Rivers/ NH Designated Rivers** section for more information). The Oyster River is the primary source of drinking water for Durham and surrounding communities. The river begins in Barrington, and continues through portions of Nottingham, Lee, Madbury and Durham before the river empties into Little Bay.

In the middle of the project there is a 1.3 km (0.8 mi) section of roadway with a zero percent grade, known as the "flats," and the roadway elevation is approximately 0.3 m (1.0 ft) below the 100-year flood elevation (*Photo R*). The roadway in this area serves as a divide between the Lamprey River and Longmarsh Brook watersheds. The two watersheds co-mingle when the roadway is overtopped. See the **Floodplains/ Floodways** Section for more information.

Numerous culverts will be upgraded or replaced within the project limits as a result of this project (*Photo K*). Many of these culverts carry either perennial or intermittent streams under the jurisdiction of the NH Department of Environmental Services DES Wetlands Bureau and the US Army Corps of Engineers (ACOE) under NH Route 108. The proposed project may construct several stormwater

treatment areas (likely swales) to provide treatment of roadway runoff before it enters any receiving water. Potential sites are still being evaluated, however three (3) potential locations have been identified in Newmarket, and one at Parcel 53, within *The Durham District (Photo C)*.

Water Quality

Every two years the Federal Clean Water Act (CWA), as last reauthorized by the Water Quality Act of 1987, requires each state to submit a document typically called the "303(d) List," which is so named because it is a requirement of Section 303(d) of the CWA. The 303(d) List includes surface waters that are:

1. Impaired or threatened by a pollutant or pollutant(s).
2. Not expected to meet water quality standards within a reasonable time even after application of best available technology standards for point sources or best management practices for nonpoint sources.
3. Require development and implementation of a comprehensive water quality study (a Total Maximum Daily Load (TMDL) study), which is designed to meet water quality standards.

Lamprey River, Oyster River, Ellison Brook, Longmarsh Brook, and Hamel Brook are all within one mile of the project area, meaning that the project is subject to water quality regulations as these waters are listed as 303(d) waters. The impairments to these waterbodies are from two criteria pollutants: *Escherichia coli* and *Enterococcus*, both bacterial.

Highways do not typically generate these bacterial impairments. However, during construction the Department will be careful to identify and pursue any illicit connections to the storm sewer system.

Phase I of the National Pollutant Discharge Elimination System (NPDES Phase I) was designed to regulate stormwater runoff discharges on construction sites that disturb five (5) or more acres of property. In 1999 EPA expanded the NPDES Program by designating additional sources of storm water for regulation to protect water quality. This new, expanded program is called NPDES Phase II.

The newer Phase II regulations further regulate sources of nonpoint source pollution, the leading cause of water quality degradation in the United States. Phase II affects "small construction sites," or those that disturb greater than one (1) acre. The Phase II Construction General Permit requires that a Storm Water Pollution Prevention Plan (SWPPP) be prepared for each construction project disturbing more than one (1) acre. In order to protect all receiving waterbodies, the contractor will be required, as a contract provision, to prepare a SWPPP for this project prior to the commencement of construction activities. This plan will ensure that all exposed areas, where construction activities are ongoing, are stabilized using appropriate erosion control techniques. Drainage patterns will not change as a result of this project.

Wild and Scenic Rivers/ NH Designated Rivers

The National Wild and Scenic Rivers System was established in October of 1968, by The Wild and Scenic Rivers Act. Recognizing that our national policies and attitudes towards rivers were creating a crisis, the act states:

"...certain selected rivers, which with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations."

The idea behind the National System is not to halt use of a river; instead the goal is to preserve the character of a river. Uses compatible with the management goals of a particular river are allowed; change is expected to happen. However, development must ensure the river flows freely and protect its "outstandingly remarkable resources."

On November 12, 1996, and May 2, 2000, portions of the Lamprey River were designated as "wild and scenic." These segments are from the Bunker Pond Dam in Epping, to the confluence with the Piscassic River in the vicinity of the Durham-Newmarket town line (*Exhibit L*). The Lamprey River's shoreline, natural floodplain, and wetlands provide a range of wildlife habitats. Currently, the Lamprey has the largest quantity of anadromous fish in the Great Bay watershed, and it hosts substantial numbers of freshwater mussel species. In addition, the river's resources include archaeological sites of prehistoric and nineteenth century culture, which are representative of the early settlement of New Hampshire's seacoast region.

Similarly, the Lamprey River has been designated as a NH Designated River pursuant to RSA 483: Rivers Management and Protection Program. The program is designed to complement and reinforce existing state and federal water quality laws, and to ensure that instream flows are maintained along protected rivers, or segments thereof, in a manner that will enhance or not diminish the enjoyment of outstanding river characteristics. Further, the scenic beauty and recreational potential of such rivers shall be restored and maintained, and riparian interests shall be respected. The NH designated portion of the Lamprey River is from the Epping/Lee town line to the Durham/Newmarket town line. The Lamprey River Local Advisory Committee (LRLAC) is responsible to advise on management of the river, and development of a river management plan, among other things. As the proposed project lies within ¼-mile of the Lamprey River, the Department has coordinated with the committee.

The Department transmitted initial contact letters to the National Park Service (NPS), LRLAC and the DES Rivers Management and Protection Program to solicit input. Following this initial mailing, the Department met with representatives of these agencies at the December 17, 2003 Natural Resource Agency coordination meeting and in the field on July 2, 2003. Where appropriate, recommendations were included into the design of the project.

Wetlands/ Wetland Mitigation

Wetlands were delineated based on the standards of the Federal Manual for Delineation of Jurisdictional Wetlands (1987) and the DES Wetlands Bureau regulations. They were classified according to the Classification of Wetlands and Deepwater Habitats of the United States by Cowardin, et. al. The classification of wetlands within the project area include (*Photo Q*):

1. PEM1B: Palustrine, Emergent, Persistent, Saturated
2. PSS1B: Palustrine, Scrub-shrub, Broad-leaved Deciduous, Saturated
3. PSS/FO1C: Palustrine, Scrub-shrub/ Forested, Broad-leaved Deciduous, Seasonally Flooded
4. PEM/SS1B: Palustrine Emergent/ Scrub-shrub, Broad-leaved Deciduous, Saturated
5. PEM1C: Palustrine, Emergent, Persistent, Seasonally Flooded
6. PEM1E: Palustrine, Emergent, Persistent, Seasonally Flooded/ Saturated
7. PEM1/2E: Palustrine, Emergent, Persistent/ Non-persistent, Seasonally Flooded/ Saturated
8. L1AB4Hh: Lacustrine, Limnetic, Aquatic Bottom, Floating Vascular, Permanently Flooded, Diked/ Impounded
9. PSS1E: Palustrine, Scrub-shrub, Broad-leaved Deciduous, Seasonally Flooded/ Saturated
10. PFO/SS1B: Palustrine, Forested/ Scrub-shrub, Broad-leaved Deciduous, Saturated
11. PAB1E: Palustrine, Aquatic Bed, Algal, Seasonally Flooded/ Saturated
12. R2UB1H: Riverine, Lower Perennial, Cobble-gravel, Permanently Flooded
13. L1UBH: Lacustrine, Limnetic, Unconsolidated Bottom, Permanently Flooded

Work associated with the proposed project involves dredge and fill activities within areas under the jurisdiction of the DES Wetlands Bureau and the ACOE. Impacts include approximately 3,452 m² (37,161 ft²) (0.35 ha (0.85 ac)) of permanent impacts necessary for the placement of roadway fill in wetlands and the replacement and/or extension of culverts. The proposed project will incur impacts to wetlands whose principal functions are primarily wildlife habitat.

The proposed impacts meet the criteria established for a “Major” impact Wetlands and Non-site Specific Permit administered by the DES Wetlands Bureau, and an ACOE State Programmatic General Permit (SPGP). The project was reviewed by the ACOE, DES Wetlands Bureau, NH Fish and Game Department (NHF&G), USF&WS, US Environmental Protection Agency (EPA), and Federal Highway Administration (FHWA) at monthly Natural Resource Agency Coordination Meetings on December 18, 2002; December 17, 2003; May 18, 2005; February 20, 2008 and May 21, 2008 (scheduled).

At the December 18, 2002 Natural Resource Agency Coordination Meeting, the DES Wetlands Bureau requested that compensatory mitigation be provided for wetland impacts. EPA provided direction to the Department to focus on wildlife issues, specifically turtle mortality along the roadway, as the “flats” area contains valuable wildlife habitat. There was additional concern expressed to limit clearing to only that which is necessary to construct the project and to eliminate Japanese Knotweed, an invasive species, in the “flats.” To address these concerns, on July 17, 2003 the Department met with NHF&G, LRLAC and a Naturalist, David Carroll, with knowledge of this portion of roadway and Blandings Turtle to discuss potential mitigation options. Furthermore, the Department contacted the Durham and Newmarket Conservation Commissions and The Nature Conservancy (TNC) on May 17, 2004 inquiring if they had any interest in assisting the Department in our search for mitigation. Lastly, the Department reviewed the

document Freshwater Wetland Mitigation Inventory for 19 Coastal Communities (FWMI19CC), prepared by the NH Office of Energy and Planning (NHOEP) that outlines known wetland mitigation areas.

The Department is still evaluating the mitigation opportunities available in Durham. However, several measures are being proposed as part of design to reduce turtle mortality along the roadway, and eradicate invasive species. These mitigation measures include:

1. Maintaining as much vegetation as possible along the project corridor by limiting clearing to the proposed toe-of-slope.
2. Eradication of Japanese Knotweed (invasive species) at priority locations along the project corridor in the “flats” (*Photo T*).
3. Erecting turtle crossing signs on either side of the “flats” to alert motorists of the potential of encountering turtles in the roadway (*Photo X*).
4. Roughening roadway side slopes with railroad-type ballast in the “flats” to deter turtles from nesting in sandy roadway side slopes.

The pre-construction phase of a NHF&G/ Natural Resource Conservation Service (NRCS)/ TNC project, aimed at addressing wildlife and wildlife habitat, is currently underway in Durham. TNC recently purchased a tract of land within the project corridor (Parcel 85 – formerly owned by Powers) and transferred ownership to NHF&G for the construction of a wildlife enhancement area (*The Powers Project*) (*Exhibits O & P*). The wildlife enhancement area will provide habitat for multiple species through the construction of a small weir and the excavation of a littoral 10-foot deep pond. Targeted species include Black Duck, Blandings Turtle, Willow Flycatcher, Blue-winged Warbler, Ermine and Snowshoe Hare among others. The project partners indicated that approximately \$30,000 of match funds is needed to leverage Federal Watershed Reserve Program (WRP) funds at a ratio of 25/75. The Department is currently working with environmental regulatory agencies to mitigate wetland impacts by providing *The Powers Project* with the \$30,000 needed through a contribution from the State Highway Fund.

The Department also understands that, in the absence of an approved mitigation package funding may be required to the DES Aquatic Resource Mitigation (ARM) Fund. Based on the current estimated wetland impacts of 0.35 ha (0.85 ac), the ARM Fund contribution would be \$111,521.91.

Floodplains/ Floodways

The roadway elevation in the “flats” is approximately 0.3 m (1.0 ft) below the 100-year flood elevation (*Photo R*). Within the past 25 years, there have been approximately (4) times when floodwaters have overtopped the roadway here, causing minor damage and temporary closure of the road. The overtopping is more of a “bath tub” effect, with standing water. The roadway serves as a divide between the Lamprey River and Oyster River watersheds. The two watersheds co-mingle when the roadway is overtopped. Preliminary consideration was given to correct the flooding problem by raising the elevation of the roadway above the 100-year flood elevation, however it was not pursued further for several reasons, which include the complex hydraulics of the area, the costly hydraulic analysis that would have been required to insure that increased flooding would not have been caused elsewhere, the potential cost of the reconstructed roadway and any new structure(s) needed to pass the flows under NH Route 108, the

relatively infrequent flooding, and the minimal impact the flooding has on the roadway. As such, the roadway profile will not be changed by the construction of this project.

There is one bridge within the project limits, which carries NH Route 108 over Longmarsh (Hamel) Brook (*Photo P*). Again, due to the complex hydraulics in the area and the relatively infrequent flooding, the project will not alter the existing roadway profile and bridge structure.

Although fill will be required to be placed within the floodplain of the Lamprey River and Longmarsh Brook, it is not anticipated that flood levels would be altered by the construction of this project. The project has been designed to maintain the existing elevation of NH Route 108 so as not to affect existing flood levels. In a letter dated June 4, 2002 the State Flood Insurance Coordinator responded that, "there are A zones and floodway designations associated with the Oyster and Lamprey River [in the project area], however Route 108 does not appear to jeopardize the integrity of either Durham or Newmarket NFIP status (*Exhibits M & W*)." No mitigation was required.

Wildlife/ Fisheries/ Endangered Species/ Natural Communities

The proposed action has been reviewed by the USF&WS and the NH Natural Heritage Bureau (NHNHB) for the presence of federal or state, listed or proposed, threatened or endangered species, or other species of special or exemplary status.

NHNHB responded in a memo dated June 10, 2002 that they currently have record of one (1) sensitive animal species and one (1) sensitive plant species in the vicinity of the project area: Blandings Turtle (*Emydoidea blandingii*) and Water Marigold (*Megalodonta beckii*). The southern part of the project area is also within an area along the Lamprey River that is flagged for possible impacts on the state-endangered Brook Floater mussel (*Alasmidonta varicosa*) (the nearest documented population is ca. 14.5 km (9.0 mi) upstream of Moat Island). Both occurrences of Blandings Turtle, one in 1966 and the other in 1992, occurred outside the project limits. The Water Marigold record occurs on Moat Island. There will be no impacts to these species as a result of construction of this project. NHNHB further states in their memo that no impacts are expected from this project on known populations (*Exhibit V*).

Although NHNHB has no recorded occurrences of Blandings Turtle in the project limits, conducive habitat borders both sides of NH Route 108 in the area of the "flats." Recognizing this, the Department has sought to minimize the impacts to these areas through a reduction in the clearing limits and by targeting wetland mitigation to address the problem that the roadway poses to this and other turtle and wildlife species. See the **Wetlands/ Wetland Mitigation** section for more information.

In a memo dated July 2, 2002 USF&WS responded that, based on currently available information, no Federally-listed or proposed threatened or endangered species under the jurisdiction of the US Fish and Wildlife Service are known to occur in the project area. (*Exhibit U*).

Cultural Resources

The Department has coordinated with NHDHR and FHWA to locate and identify National Register of Historic Places listed and/or eligible properties within the area and has determined how they would be affected by the proposed project. The Department also established coordination with the Durham and Newmarket Historic District Commissions. A response was not received from the Newmarket Historic District Commission. Along with a resident of the area, the Durham Historic District Commission became a consulting party to the Section 106 process. The project was reviewed with NHDHR and FHWA at regularly scheduled Cultural Resource Agency Coordination Meetings on February 13, 2003; September 11, 2003; June 10, 2004; March 10, 2005; April 14, 2005; May 12, 2005; and October 11, 2007. Consulting parties were invited to review meetings that involved discussions of impacts and mitigation. A Memorandum of “No Adverse Effect” was signed on June 2, 2005 (*Exhibit Q*). The project area contains sites that are sensitive for historic resources (extant architectural) and archaeology. The proposed project will require the acquisition of land outside of the existing right-of-way, and permanent easements on historic properties to accommodate the work associated with this project (*Exhibit C*). See **Effects on Historic Resources** section below.

Description of Historic Resources

In the spring of 2003, architectural and archaeological investigation of resources along the project limits commenced for a determination of their eligibility for the National Register of Historic Places. As a result of these surveys, it was determined that individually eligible resources and three (3) separate historic districts are included in the project area. They are as described below:

Durham Historic District

The Durham Historic District (*The Durham District*) is listed in the National Register of Historic Places. It is located along Main Street and Newmarket Road (NH Route 108) in Durham, encompassing Main Street from Madbury Road, east to Newmarket Road, and south down Newmarket Lane to Laurel Lane. Also included is the Durham Point Road intersection and a portion of Durham Point Road (*Exhibit F*). *The Durham District* is comprised of approximately 35 architecturally and/or historically significant buildings that are representative of the growth of the Town of Durham, from its origins in the early seventeenth century to the height of its prosperity as a shipbuilding and trading center in the 1830’s. Subsequent development is exemplified in the district by about a dozen houses that were either of original construction in the late nineteenth and early twentieth century or were earlier structures that were altered at that time to accommodate the changing tastes of the Victorian era. Intrusions in *The Durham District* are minimal, detracting from its character only at the intersection of Main Street and Newmarket Road. The contributing elements and individually eligible properties in the District, within the project limits, are described below:

Parcel #	Current Owner(s)	Historic Name	Description
138	Burns, Stephen & Bodo, Andrea	Winborn Adams House	2 ½-story, wood frame, clapboarded, 4-bay, center hall plan house
137	Mohl, Bruce & Tucker, Marian	James Paul House	2-story, stone 5-bay, center hall plan house

136	Pillar, Frank & Anita	House	2 ½-story shingled house with porch
140	Town of Durham	None	None
139	Robert C. Congdon Revocable Trust	Palmer House	1 ½-story, clapboarded, gable-roofed, wood frame, 3-bay, center hall plan house
55	Mill Pond Trust	Fields	Fields
53	Mill Pond Center, Inc.	Fields	Fields
52	Leighton, Charles	The Red School House	1 ½-story, clapboarded, wood frame, gable-roofed, 5-bay, center hall plan house
69	Lenharth, William & Jane	Lenharth House	1 ½-story, clapboarded, wood frame, gable-roofed, 3-bay, center plan house
68	Matthew, Carlyon	Fitzgerald House	1-story, clapboarded, wood frame, gable-roofed, 3-bay, center hall plan house
67	Gervasio, Karen & Sullivan, William	Hersey Trust House #2	1 ½-story, clapboarded, wood frame, gable-roofed, 3-bay, center hall plan house
66	Hennessey, Christine & Henderson, Mark	Hersey Trust House #1	1 ½-story, clapboarded, wood frame, gable-roofed, 5-bay, center plan house
65	Polk, Marie	Polk House	1 ½-story, clapboarded, wood frame, gable-roofed, 3-bay
63	Butler, Timothy & Eleanor	Mark Willey House	2 ½-story, clapboarded, wood frame, gable-roofed, 5-bay, center hall plan house
62	Moriarty, Thomas Jr. & Barbara	Moriarty House	2 ½-story, clapboarded, with some aluminum siding, gable-roofed, 3-bay, sidehall entry plan
60	Rice, Jan & Fitzgerald-Rice, Catherine	Palmer House	1 ½-story, clapboarded, gable-roofed, wood frame, 3-bay, center hall plan house
59	Greene, R. Douglas & Suzanne	Heald House	1 ½-story, clapboarded, wood frame, gable-roofed, 5-bay, center hall plan house

Doe-Mooney-Dame-Stevens Farms Historic District

The Doe-Mooney-Dame-Stevens Farms Historic District (*The Farms District*) is eligible for listing in the National Register of Historic Places. The district is comprised of six (6) former or existing farms, five (5) of which have standing historic resources and all of which have archaeological resources. The boundaries of *The Farms District* are strongly influenced by topographical features within or close by the district (*Exhibit G*). Much of the district is within the Great Bay watershed and includes part of a knoll of land that rises from the east at Great Bay, the north from Oyster River, and the south from the Lamprey River. Historically, the low lands in the district were tilled and the rockier uplands used for pasture, a pattern that remains in evidence today. All of the historic buildings, burial grounds and cellar holes within the district were located on high ground. For many years, Newmarket Road (NH Route 108), the spine of the district, avoided the stretch of low land between Bennett and Moat Roads. It was not until ca. 1820 that this section of Newmarket Road was laid out. *The Farms District* is eligible for the register under Criterion A, in the area of Agriculture, a significant historical context in the Town of Durham. The contributing elements of the District are described below:

Parcel #	Current Owner(s)	Historic Name	Description
82	Anderson, Mark & Diane	Mooney Burial Ground	This cemetery is 15.2 m (50.0 ft) on each side and bounded with a granite block and split field boulder wall
33	Heirs of Bertha Moriarty	Moriarty House	2 ½-story, 5-bay, side gable-roofed, twin-chimney, center-entrance, vernacular Federal
31	Beaudet, Norman	Mooney-Beaudet Farm	2 ½-story, 5-bay, side-gable roofed, central chimney and entrance, Greek Revival-type
30	LaRoche, Raymond & Dorothy	Doe-LaRoche Farm	2 ½-story, 5-bay, side-gable roofed, center entrance
84	Bedard, Leo & Eva	Dame-Bedard Farm	1 ½-story, clapboarded, gable-roofed, wood frame, 3-bay, center hall plan house
27	Earnest Cutter Jr. Revocable Trust	Hale Stevens Farm	2 ½-story, 5-bay, side gable roofed, vernacular Italianate
85	The Nature Conservancy	Hale Stevens Farm	Farmland associated with Hale Stevens Farm (Parcel 27)
None	Unknown (outside project limits)	Fields	Fields associated with the Mooney-Beaudet Farm
None	Unknown (outside project limits)	Woods	Woods
83	Heirs of Bertha Moriarty	Fields	Fields
None	Unknown (outside survey limits)	Fields	Fields associated with the Doe-LaRoche Farm
None	Unknown (outside survey limits)	Doe Farm	Wooded with a burial ground
32	Heirs of Bertha Moriarty	Mooney-Beaudet Farm	Woods

Newmarket Industrial and Commercial Historic District and Extension

The Newmarket Industrial and Commercial National Register Historic District (*The Newmarket District*) is located around the Lamprey River, a tidal estuary of Great Bay (*Exhibit H*). The falls of the Lamprey River were documented to have been used for sawmills as early as the 1650's. This site became the center of the town of Newmarket, which was historically part of the town of Exeter. In 1822, the corporation known as the Newmarket Manufacturing Company was formed to develop the waterpower of the Lamprey River. Textile mills, worker housing and associated municipal and public buildings and meeting places transformed Newmarket into the prototypical mill town. *The Newmarket District* is reflective of this period.

The Newmarket District, listed in the National Register in 1980, is located just beyond the southern limits of the project area. In 1995, a northern extension of the district, which extends into the project area as far as Dame Road, was determined eligible for the Register. The preliminary investigations completed on the District extension, recommended somewhat diminished boundaries, stopping south of Dame Road to exclude the various early 20th century commercial and residential properties in that area, as they do not relate historically to the rest of the district and many have lost integrity. The National Register eligible

extension includes the continuous string of 19th century residences, including all the Newmarket Manufacturing Company duplexes, that front on both sides of North Main Street and were built in direct response to the town's industrial growth.

The contributing elements of *The Newmarket District* extension within the project area are described on the following page⁴:

Parcel #	Current Owner(s)	Historic Name	Description
121	Lepage, Phillip	Newmarket Mfg. Co. Housing	2 ½-story, side-gabled, shallow-pitched roof, 3-bay, Italianate duplex with rear ell
122	Lepage, Phillip	Newmarket Mfg. Co. Housing	2 ½-story, side-gabled, shallow-pitched roof, 3-bay, Italianate duplex with rear ell
123	Vongsay, Infeng	Newmarket Mfg. Co. Housing	2 ½-story, side-gabled, shallow-pitched roof, 3-bay, Italianate duplex with rear ell
124	McCall, Patricia & Moisan, David	North Side Primary School	2 ½-story, front-gabled roof, 3-bay, Greek Revival house; discontinued as school after 1924
125	Arlene Moore Revocable Trust 1997	Newmarket Mfg. Co. Housing	2 ½-story, side-gabled roof, 3-bay duplex
126	Moisan, Devan	Newmarket Mfg. Co. Housing	1 ½-story, high-posted, side-gabled roof, 3-bay, twin-chimney duplex;
127	McGuirk, Joann	Newmarket Mfg. Co. Housing	1 ½-story, high-posted, side-gabled roof, 3-bay, twin chimney duplex
128	Pope, Russell & Fortin, Audrey	Ellison House	2 ½-story, front-gabled roof, 2-bay sidehall Italianate house
129	Essley, Roger & Mary	<i>None</i>	2 ½-story, front-gabled roof, 3-bay vernacular Italianate house
130	Bowley, Matthew & Ashley, Marshall, Brian & Rebecca	<i>None</i>	2 ½-story, side-gabled roof, twin chimney, 3-bay, vernacular Italianate house and barn
131	Kruckek, Joseph & Carleen	School House No. 9	former school house; 1 ½-story, front-gabled roof, converted to dwelling ca. 1890
110	Keller, Margurite	A.I.T. Gilman House	1 ½-story, front-gabled roof, 2-bay sidehall Italianate house
111	31-33 North Main Street Condo. Association	Young House	1 ½-story, side-gabled roof, 5-bay, vernacular Federal house with Colonial Revival façade porch
112	Watson NH LLC	A. Pride House	2 ½-story, front-gabled roof, 3-bay, sidehall vernacular Italianate house converted to a service station
113	Hereford, Keith & Chase, Sara	<i>None</i>	1 ½-story, high-posted, 3-bay house; moved to this site in late 19 th c.

4 As the District extension has not undergone a formal National Register nomination for its inclusion in the listed *Newmarket District*, it is still considered an eligible extension. It is the extension that includes the southerly terminus of the project area.

114	Catlin, Peter	<i>None</i>	2 ½-story, side-gabled roof, 4-bay vernacular Italianate duplex; built from barn moved to this site
115	Talbot, Normand & Sandra	G.A. & W.D. Shute House	2 ½-story, side-gabled roof, 3-bay, vernacular Queen Anne
116	Lavender, Matthew	Demeritt House	2 ½-story, front-gabled roof, 2-bay, Greek Revival house
117	Getchell, L. Forbes	Captain Benjamin Smith House	1 ½-story, high-posted, side-gabled roof, 3-bay house with later Italianate and Queen Anne details
118	Russell, Brian & Smith, Live	<i>None</i>	1 ½-story, side-gabled roof, 6-bay duplex

Individually Eligible and Potentially Eligible Resources

In addition to the properties listed above, which are associated with National Register listed or eligible Districts, there are several properties that are either individually eligible or potentially eligible⁵ for the National Register of Historic Places. These resources are listed below:

Parcel #	Current Owner(s)	Historic Name	Description
Individually Eligible Properties			
99	Bassett, Raymond & Margaret	Bassett House	2 ½-story, side-gabled, shallow-pitched roof, 3-bay, Italianate duplex with rear ell
Potentially Eligible Properties⁵			
2	Fieldsend, Forrest & Charlotte	<i>None at this time</i>	2-story, side-gabled roof, 3-bay house and garage
95	Neil, Ralph & Jayne	<i>None at this time</i>	1 ½-story, 5-bay, high-posted cape; sawn scroll brackets on hip-roof entry porch
100	Thorne, Edward & Doris	Hettie Chapman House	2 ½-story, front-gabled roof, 3-bay sidehall Queen Anne house

Archaeological Resources

The project area is sensitive for Native American archaeology (*Exhibit D*). The Piscataqua region has a rich and varied archaeological record that reflects over 11,000 years of occupation by Native American peoples. Sites from all major time periods and cultures are present within the region, found in a variety of environmental settings that reflect the changing economic and adaptive strategies of Native people and changes in the local environment since the end of the Pleistocene. Habitation site locations are generally correlated with a number of specific environmental variables, notably including well-drained soils and proximity to fresh water. Artifacts reflecting more specialized activities may be found in many settings in the Piscataqua region.

⁵ Properties that are potentially eligible for the National Register of Historic Places have not yet undergone any formal determination of eligibility. If impacts to any of these three properties would be incurred by construction of this project, a formal determination would be required.

The Native American archaeological record has become intermingled with that of Euro-Americans, and Native artifacts many thousands of years old occur in association with European sites from the seventeenth through the nineteenth century.

An Archaeological Phase IA sensitivity survey was conducted in the spring of 2004. There were thirteen (13) areas identified as sensitive along NH Route 108 within and outside the project area. Prior to the commencement of construction related activities, all necessary remaining phases of archaeological investigation will be completed.

Effects on Historic Resources

Effects on historic resources were determined by NHDHR, FHWA and NHDOT based on the Section 106 review process established by the National Historic Preservation Act of 1966 and outlined at 36 CFR 800.9.

Effects on National Register listed and eligible districts and individually eligible properties are a result of construction of the proposed action, including widening, drainage improvements, alignment improvements and construction of sidewalks. It was determined at the May 12, 2005 Cultural Resources Agency Coordination Meeting, and reaffirmed at the October 11, 2007 Cultural Resource Agency Coordination Meeting, that the impacts would have “No Adverse Effect” on historical resources (*Exhibit Q*). Permanent easements and acquisitions (“impacts”) are as outlined below.

As can be seen on the following page in the **Permanent Impacts to Historic Resources Table**, impacts to *The Durham District* consist of 288.1 m² (3,101.1 ft²) of acquisitions and 893.9 m² (9,621.5 ft²) of permanent easements for a total 1,182.0 m² (12,722.6 ft²). Impacts to *The Farms District* consist of 724.1 m² (7,794.2 ft²) of acquisitions and 4,413.9 m² (47,510.3 ft²) of permanent easements for a total 5,138.0 m² (55,304.5 ft²). Impacts to the *Newmarket District* consist of 108.1 m² (1,163.6 ft²) of acquisitions and 384.7 m² (4,140.9 ft²) of permanent easements for a total 492.8 m² (5,304.5 ft²). Impacts to individually eligible and potentially eligible resources consist of 24.2 m² (260.5 ft²) of acquisitions and 279.2 m² (3,105.3 ft²) of permanent easements (*Exhibit C*).

In addition to the protection afforded them by Section 106 of the NHPA, historic resources are protected under Section 4(f) of the US Department of Transportation Act. New provisions under Section 6009 in the Safe Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the latest transportation program reauthorization, provide for a finding of *de minimis* impact on historic properties if, “*the transportation program or project will have no adverse effect on the historic site...*” after consultation under Section 106 of the NHPA. It was determined that the impacts by this Federal action on *The Durham District*, *The Farms District*, *The Newmarket District*, as well as individually-eligible resources would have *No Adverse Effect*. As such, FHWA made a finding of *de minimis* impact for this action (*Exhibit X*).

Mitigation of Historic Resource Impacts

It was agreed among FHWA, NHDHR and NHDOT that impacts to *The Durham District*, *The Farms District* and *The Newmarket District*, as well as to individually eligible and potentially eligible

PERMANENT IMPACTS TO HISTORIC RESOURCES TABLE

Parcel #	Owner(s)	Historic Parcel Name	Parcel Size		Acquisitions		Perm. Easements	
			Ha	Ac	m ²	ft ²	m ²	ft ²
Contributing Elements of the Durham Historic District								
52	Leighton, Charles H.	The Red School House	0.4	0.97			72.0	775.0
53	Mill Pond Center, Inc.	Fields	7.0	17.36	288.1	3,101.1	648.7	6,982.2
55	The Mill Pond Trust	Fields	2.8	7.00			173.2	1,864.3
Total impacts to <i>The Durham District</i>:					288.1	3,101.1	893.9	9,621.5

Contributing Elements of the Doe-Mooney-Dame-Stevens Farms Historic District								
27	Earnest Cuttter Jr. Cutter R.T.	Hale Stevens Farm	4.2	10.50			397.9	4,283.0
30	LaRoche, R. A. & D. A.	Doe-LaRoche Farm	32.4	80.00			36.3	390.2
31	Beaudet, Norman	Mooney-Beaudet Farm	24.3	60.00			153.0	1,646.9
32	Moriarty, Thomas, et. al.	Mooney-Beaudet Farm	0.8	1.90			336.6	3,623.1
33	Heirs of Bertha Moriarty	Moriarty House	17.4	43.00	246.3	2,651.2	1,444.4	15,547.4
34	Smith W. R. & M. R.	<i>None</i>	0.6	1.55			97.0	1,044.1
79	Lonsinger, Gary L. & Nancy L.	<i>None</i>	20.2	49.90			104.0	1,119.4
82	Anderson, Mark L. & Diane R.	Mooney Burial Ground	1.6	4.00	477.8	5,143.0	498.3	5,363.7
83	Heirs of Bertha Moriarty	Fields	21.4	53.00			206.9	2,227.1
84	Bedard, Leo & Eva	Dame-Bedard Farm	85.9	212.0			130.3	1,402.5
85	The Nature Conservancy	Hale Stevens Farm	35.9	97.60			1,009.2	10,862.9
Total impacts to <i>The Farms District</i>:					724.1	7,794.2	4,413.9	47,510.3

Contributing Elements of the Newmarket Industrial and Commercial Historic District and Extension								
110	Keller, Margurite	A.I.T. Gilman House	0.1	0.26	72.5	780.4		
111	31-33 N. Main St. Condo. Assn.	Young House	0.4	0.97	35.6	383.2		
126	Moisan, Devan	Newmarket Mfg. Co.	0.1	0.31			384.7	4,140.9
Total impacts to <i>The Newmarket District</i>:					108.1	1,163.6	384.7	4,140.9

Individually Eligible and Potentially Eligible Properties								
2	Fieldsend, Forrest & Charlotte M.	<i>None</i>	0.2	0.41	24.2	260.5		
95	Neil, Ralph C. & Jayne M.	<i>None</i>	1.0	2.40			181.6	1,954.7
100	Thorne, Edward H. & Doris I.	Hettie Chapman House	0.4	1.10			97.6	1,050.6
Total impacts to Individually Eligible and Potentially Eligible Properties:					24.2	260.5	279.2	3,105.3

resources, are unavoidable and that several measures will be implemented to mitigate for these impacts, which include:

1. *Mitigation through design.* The proposed action has taken into consideration the special nature of the resources along NH Route 108 in Durham and Newmarket by constructing a typical

cross section that is minor in scale, and that minimizes impacts to cultural resources (*Simulations A-E*).

2. Rebuilding stone walls project-wide. As part of design, the Department will rebuild stone walls impacted by construction, where feasible, practicable and constructible (*Photo V*).
3. Completing all necessary remaining phases of archaeological investigation throughout the project corridor prior to construction.
4. Updating *The Farms District* area form to include three (3) additional properties (Parcels 34, 82 and 80).

Construction Impacts

Construction of this project is anticipated to cause temporary increases in noise and dust levels within the project area. All standard measures will be employed to ensure such increases are minimized to the extent practicable and limited to the construction period.

The project contractor will be required to prepare, as a contract provision, a stormwater pollution prevention plan prior to the commencement of construction activities. Utilizing Best Management Practices (BMPs), this plan will protect the integrity of Oyster River, Lamprey River, Hamel Brook and associated wetlands in the project area throughout the construction period.

Standard pollution prevention measures will be employed to assure all negative impacts are avoided and/or minimized to the maximum extent practicable.

Access to all properties will be maintained throughout construction. Through traffic shall be maintained during construction, although traffic might need to run on gravel surfaces for short periods of time. Any temporary suspensions of through traffic will be held to an absolute minimum.

Coordination & Public Participation

Meetings were held periodically with various Federal, State and local agencies, as well as with the general public throughout the development of this project. Project review meetings were held on the following dates:

<u>Date</u>	<u>Topic</u>
November 19, 2002	Public Officials/ Public Informational Meeting
December 18, 2002	Natural Resource Agency Meeting
February 13, 2003	Cultural Resource Agency Meeting
September 11, 2003	Cultural Resource Agency Meeting
December 17, 2003	Natural Resource Agency Meeting
June 10, 2004	Cultural Resource Agency Meeting
March 23, 2004	Public Informational Meeting (Durham)
March 24, 2004	Public Informational Meeting (Newmarket)

March 10, 2005	Cultural Resource Agency Meeting
April 14, 2005	Cultural Resource Agency Meeting
May 12, 2005	Cultural Resource Agency Meeting
May 18, 2005	Natural Resource Agency Meeting
July 21, 2005	Public Hearing
September 26, 2007	Finding of Necessity
October 11, 2007	Cultural Resource Agency Meeting
May 21, 2008	Natural Resource Agency Meeting

Letters were sent to various Federal, State and local agencies, as well as the general public, requesting input on this project on the following dates:

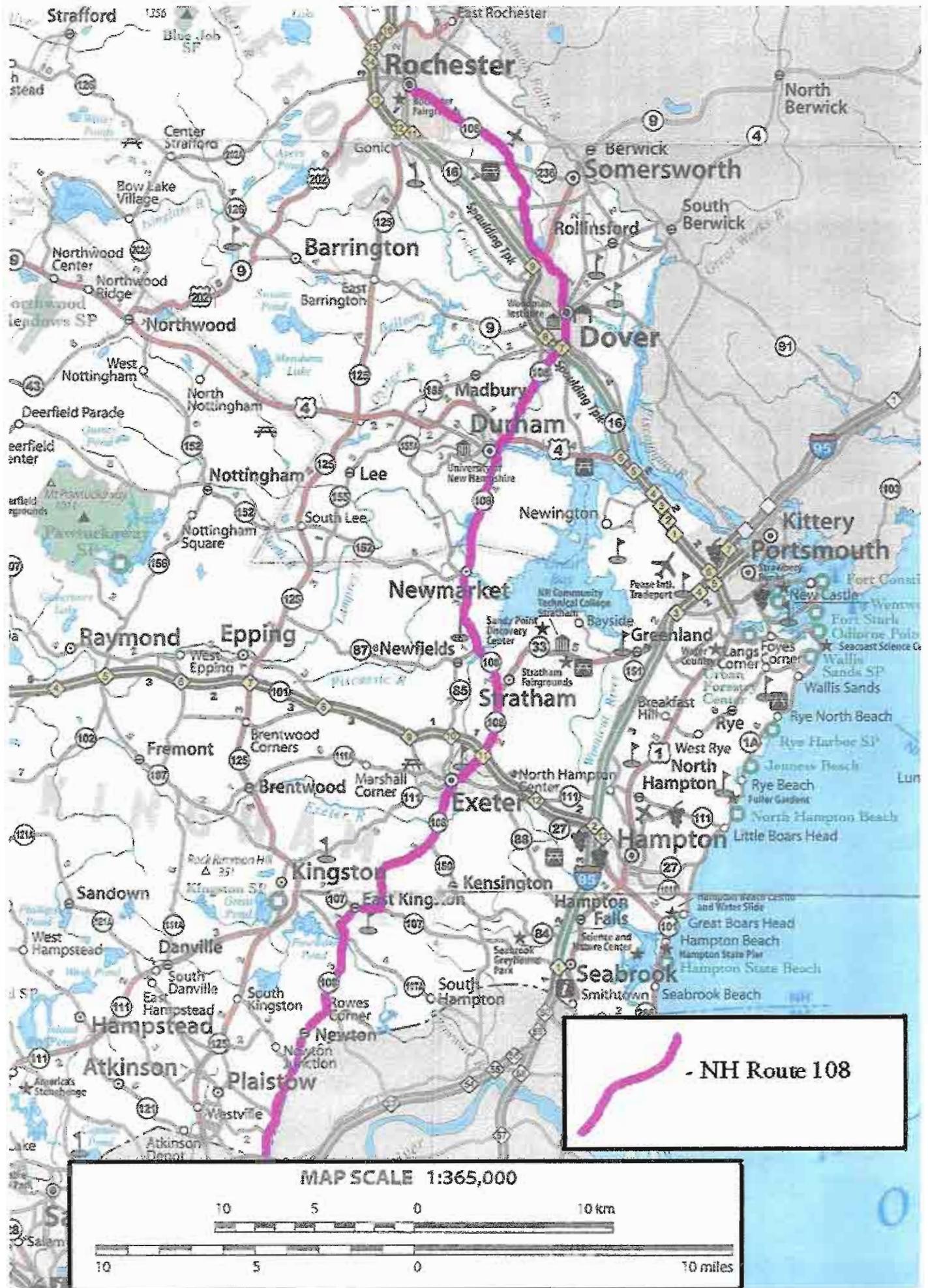
Agency / Organization	Contact	Date Sent	Date Received
Town of Durham			
Town Council	Malcolm Sandberg	5/31/2002	-
Town Administrator	Todd I. Selig	5/31/2002	-
Public Works Director	Michael Lynch	5/31/2002	6/26/2002
Town Planner	Jim Campbell	5/31/2002	-
Planning Board	Stephen Roberts	5/31/2002	-
Historic District Commission	Roger Jaques	5/31/2002	7/2/2002
Conservation Commission	Dwight Baldwin	5/31/2002	-
Emergency Management	Todd I. Selig	5/31/2002	6/10/2002
Town of Newmarket			
Town Council	Brian Hart	5/31/2002	-
Town Administrator	Alphonse R. Dixon	5/31/2002	-
Public Works Director	Richard M. Malasky	5/31/2002	-
Planning Board	Rose-Anne Kwaks	5/31/2002	-
Conservation Commission	Wilfred Hamel	5/31/2002	5/9/2002
Emergency Management	Candice Jarosz	5/31/2002	-
NHDOT Environmental Justice Review	Dave Chandler	4/28/2005	5/10/2005
Lamprey River Local Advisory Committee	Judith Spang	11/18/2002	7/2/2003
NHOEP, CLS Program	Steve Walker	5/31/2002	6/6/2002
NH DRED, LWCF	Torene Tango-Lowy	5/31/2002	7/1/2002
NH DRED, Trails Bureau	Bob Spoerl	5/31/2002	6/11/2002
NH Natural Heritage Bureau	Lionel Chute	5/31/2002	6/12/2002
NH Bureau of Emergency Management	George Musler	5/31/2002	6/4/2003
Strafford Regional Planning Commission	Cynthia Copeland	5/31/2002	6/13/2002
US Fish and Wildlife Service	Bill Neidermyer	5/31/2002	7/5/2002
NH Division of Historical Resources	Linda Wilson	5/31/2002	5/12/2005

A Public Hearing was held for this project on July 21, 2005. The Department has responded to all issues and questions from the hearing in the Report of the Commissioner (Exhibit Y). The major concerns included the Bennett Road intersection configuration and the Durham Point Road bypass shoulder. Where appropriate, relevant section of this document have been altered from what was contained in the Draft Categorical Exclusion to reflect changes in the Department's design.

Environmental Commitments:

The following environmental commitments have been made for this project.

1. Prior to the commencement of work, the contractor shall submit a Storm Water Pollution Prevention Plan (SWPPP) specific to this project. The plan shall be approved by the Department and implemented and monitored as noted. **(P 19) (Construction/ Environment)**
2. All standard measures shall be employed to minimize noise and dust levels during the construction period, primarily for the abutting receptors located adjacent to the project area. **(P 31) (Construction)**
3. Using the same design and workmanship and as much of the original material as possible, stonewalls impacted by construction project-wide shall be rebuilt where feasible, practicable and constructible. **(P 29) (Design/ Construction)**
4. All appropriate, remaining phases of archaeological investigation shall be completed throughout the project area. **(P 29) (Environment)**
5. The Department shall update *The Farms District* area form to include three (3) additional properties (Parcels 34, 82 and 80). **(P 29) (Environment)**
6. Compensatory wetland mitigation shall be provided for impacts associated with the proposed action. The Department shall continue to work with resource agencies and other appropriate entities to ensure that mitigation is acceptable to all parties. **(P 22) (Environment/ Design/ Construction/ Right-of-Way)**

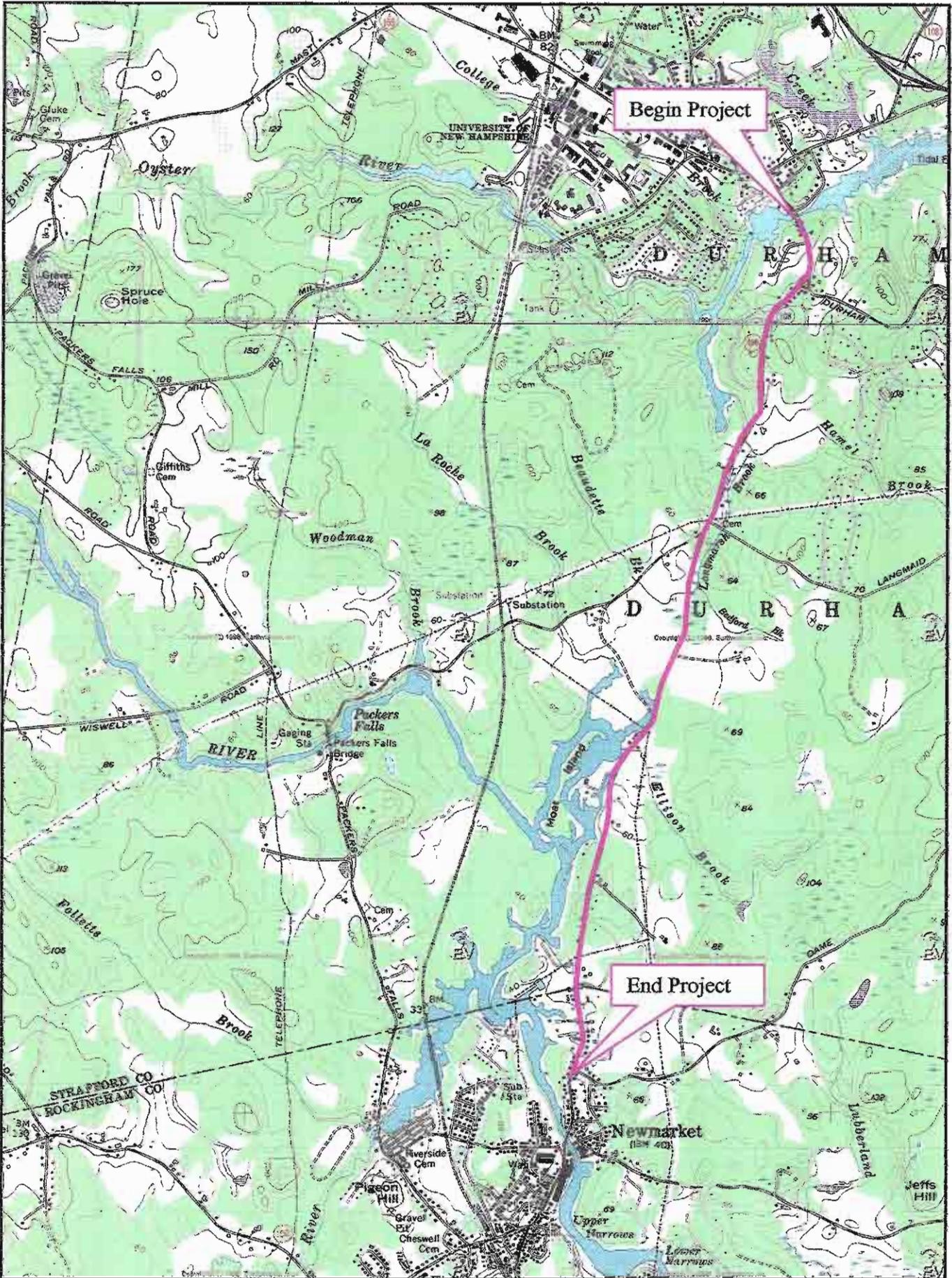


- NH Route 108

MAP SCALE 1:365,000

10 5 0 10 km

10 5 0 10 miles



Scale 1:24,000

Dover West, NH & Newmarket, NH Quadrangle

DURHAM-NEWMARKET, STP-TE-X-5133(009), 13080

EXHIBIT B

Exhibits

- LEGEND:**
- (NH)** Not Historic
 - (H)** Individually Eligible
 - (C)** Contributing in a District
 - (NC)** Non-Contributing/Not Eligible
 - (PH)** No Individual Study on Property
- Travel Way of Proposed Roadway
 - Shoulder of Proposed Roadway
 - Proposed Raised Traffic Island
 - Proposed Sidewalk
 - Access Points to Proposed Roadway (Drives, etc.)
 - Approximate Limit of Slope Work and Landscaping
 - Existing Pavement (Roadways, Drives, Sidewalks, etc.)
 - Existing Tree/Brush Line
 - Water (Rivers, Streams, Lakes, Ponds, Swamps, etc.)
 - Existing Building
 - Wetlands
 - Property Lines
 - Town Lines
 - Existing Easement Lines
 - Proposed Easement Lines
 - Existing R.O.W. (Right-of-Way)
 - Proposed R.O.W.



Newmarket Industrial and Commercial NR Historic District Extension

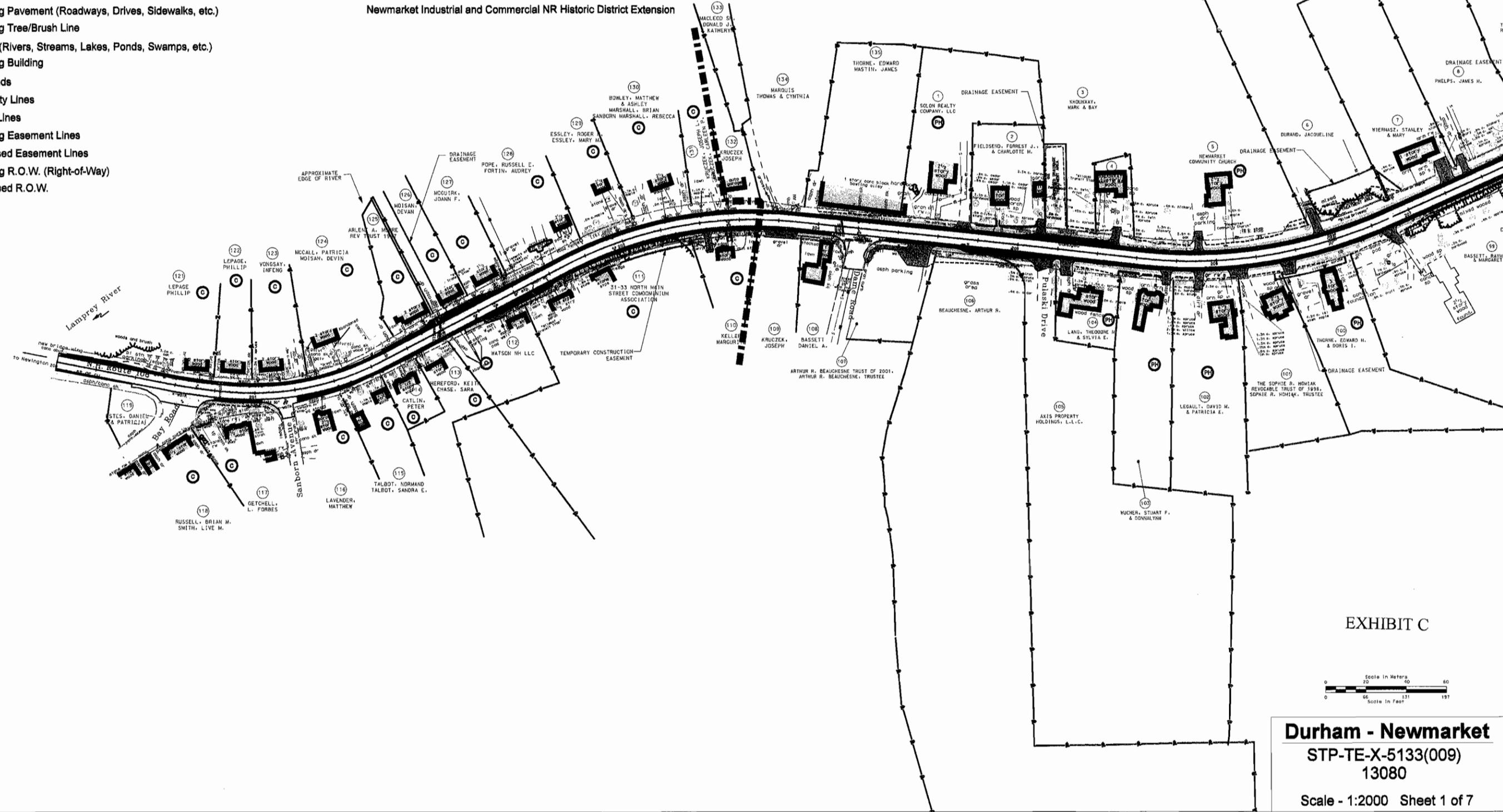
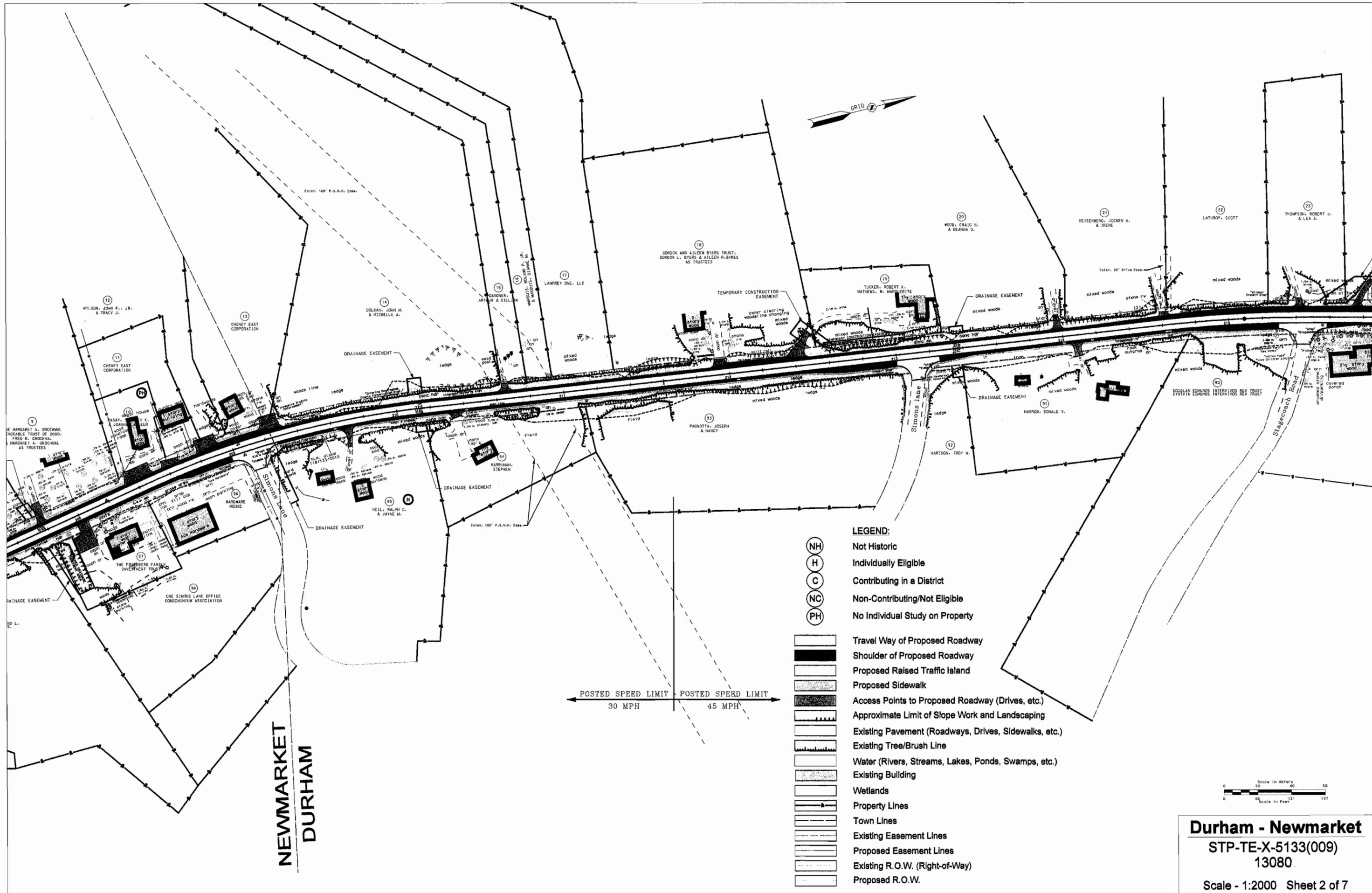


EXHIBIT C



Durham - Newmarket
 STP-TE-X-5133(009)
 13080
 Scale - 1:2000 Sheet 1 of 7

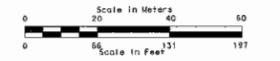


**NEWMARKET
DURHAM**



POSTED SPEED LIMIT 30 MPH | POSTED SPEED LIMIT 45 MPH

- LEGEND:**
- (NH) Not Historic
 - (H) Individually Eligible
 - (C) Contributing in a District
 - (NC) Non-Contributing/Not Eligible
 - (PH) No Individual Study on Property
- [Solid black bar] Travel Way of Proposed Roadway
 - [Hatched bar] Shoulder of Proposed Roadway
 - [Dotted bar] Proposed Raised Traffic Island
 - [Dashed bar] Proposed Sidewalk
 - [Thin solid bar] Access Points to Proposed Roadway (Drives, etc.)
 - [Wavy line] Approximate Limit of Slope Work and Landscaping
 - [Dotted line] Existing Pavement (Roadways, Drives, Sidewalks, etc.)
 - [Thick solid line] Existing Tree/Brush Line
 - [Wavy line with dots] Water (Rivers, Streams, Lakes, Ponds, Swamps, etc.)
 - [Stippled area] Existing Building
 - [Horizontal lines] Wetlands
 - [Thin solid line] Property Lines
 - [Dashed line] Town Lines
 - [Dotted line] Existing Easement Lines
 - [Dashed line] Proposed Easement Lines
 - [Dotted line] Existing R.O.W. (Right-of-Way)
 - [Dashed line] Proposed R.O.W.

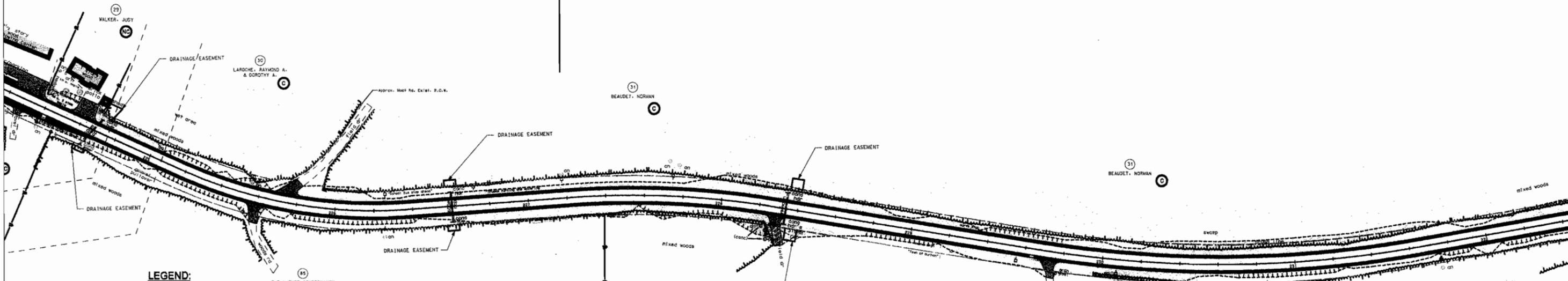


Durham - Newmarket
 STP-TE-X-5133(009)
 13080
 Scale - 1:2000 Sheet 2 of 7



LAMPREY RIVER
WATERSHED

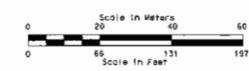
CABLE TRUST,
TRUSTEE &
CABLE TRUST,
TRUSTEE



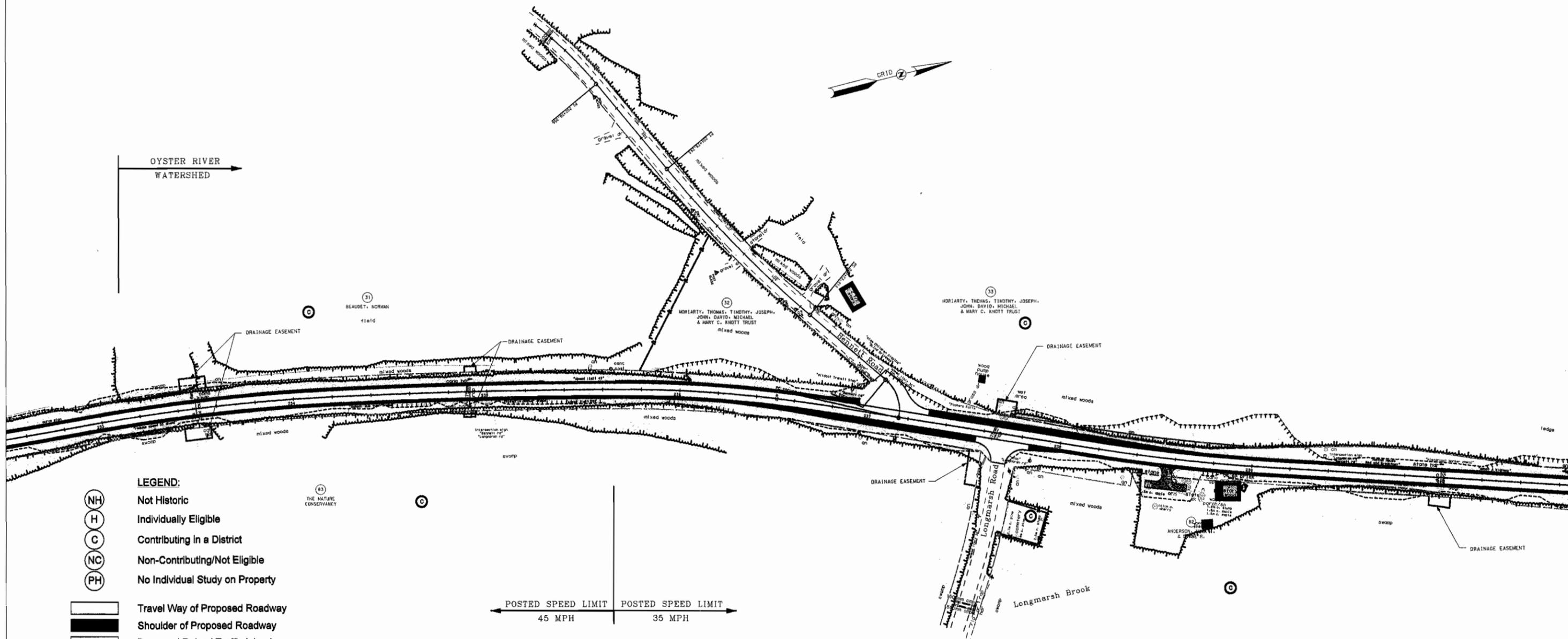
LEGEND:

- (NH) Not Historic
- (H) Individually Eligible
- (C) Contributing in a District
- (NC) Non-Contributing/Not Eligible
- (PH) No Individual Study on Property

- Travel Way of Proposed Roadway
- Shoulder of Proposed Roadway
- Proposed Raised Traffic Island
- Proposed Sidewalk
- Access Points to Proposed Roadway (Drives, etc.)
- Approximate Limit of Slope Work and Landscaping
- Existing Pavement (Roadways, Drives, Sidewalks, etc.)
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- Proposed Easement Lines
- Existing R.O.W. (Right-of-Way)
- Proposed R.O.W.

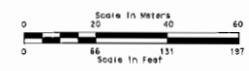
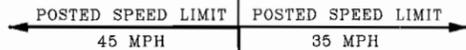


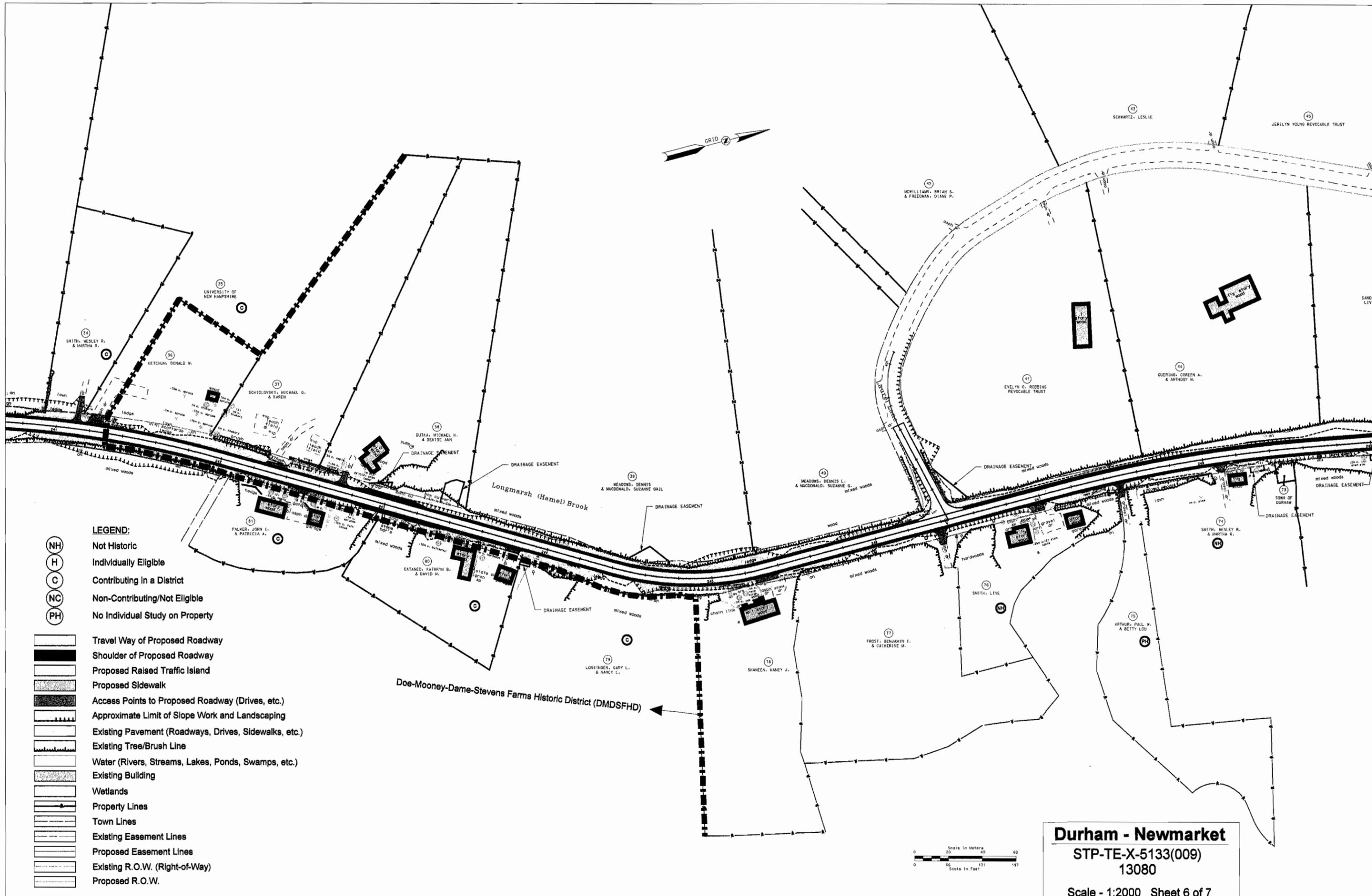
Durham - Newmarket
 STP-TE-X-5133(009)
 13080
 Scale - 1:2000 Sheet 4 of 7



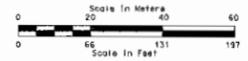
- LEGEND:**
- (NH) Not Historic
 - (H) Individually Eligible
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 - (NC) Non-Contributing/Not Eligible
 - (PH) No Individual Study on Property

- [Symbol] Travel Way of Proposed Roadway
- [Symbol] Shoulder of Proposed Roadway
- [Symbol] Proposed Raised Traffic Island
- [Symbol] Proposed Sidewalk
- [Symbol] Access Points to Proposed Roadway (Drives, etc.)
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- [Symbol] Proposed R.O.W.





- LEGEND:**
- (NH) Not Historic
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- [Symbol] Travel Way of Proposed Roadway
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 - [Symbol] Existing R.O.W. (Right-of-Way)
 - [Symbol] Proposed R.O.W.



Durham - Newmarket
 STP-TE-X-5133(009)
 13080
 Scale - 1:2000 Sheet 6 of 7



Strafford Regional Planning Commission

2 Ridge Street, Suite 4
Dover, New Hampshire 03820

SRPC

Tel: (603) 742-2523 Fax: (603) 742-7986
e-mail: srpc@strafford.org

Monday, June 10, 2002

Kevin T. Nyhan
Senior Environmental Manager
Bureau of Environment
NH Dept. of Transportation
1 Hazen Dr., Rm. 160
Concord, NH 03302-0483

RECEIVED
BUREAU OF ENVIRONMENT

JUN 13 2002

**N.H. DEPARTMENT OF
TRANSPORTATION**

Dear Mr. Nyhan:

This letter is in response to your request of 31 May 2002 for commentary on planned improvements to NH Route 108 in Durham and Newmarket [Durham-Newmarket, STP-TE-X-5133(009), 13080]. Below are comments from Strafford Regional Planning Commission (SRPC). The GIS data on which these comments are based are in some cases likely not the most recent available, but we believe this will not have an appreciable effect on the content of our comments. The comments are numbered to correspond to the numbered questions in your original letter, and your questions are repeated here for clarity:

1. *Are there any existing or proposed community or regional plans that might have a bearing on this project?*

Newmarket has recently been developing an Open Space Plan. Details of this plan may have a bearing on activities in the project corridor. Also, recent changes in public water supply sources for the Town may affect the improvements proposed in the project.

2. *Are there any natural or cultural resources of significance in the vicinity of the project? (prime wetlands, stonewalls, cemeteries, historical or archeological resources etc.)*

The most significant natural resources in the project vicinity are the wetlands. NH 108 is largely surrounded by wetlands recorded in the National Wetlands Inventory and the NH GRANIT Hydro GIS layer and indicated by Hydric A and Hydric B soils in the federal NRCS county soil surveys. Wetlands are very close to or abutting NH 108 through much of the project area, from approximately 0.4 mi north of Longmarsh Rd. in Durham south to Dame Rd. in Newmarket.

The northern portion of the project passes through the Durham Historic District, which is listed on the National Register of Historic Places. In addition, the Gen. John Sullivan House (23 Newmarket Rd.) is individually listed on the Register. Other

Barrington • Dover • Durham • Farmington • Lee • Madbury • Middleton • Milton • New Durham • Newmarket
Northwood • Nottingham • Rochester • Rollinsford • Somersworth • Strafford • Wakefield

EXHIBIT D

significant components in the district are the Town Pound and several historic markers. In regards to archeological resources, we suggest that you contact the NH Division of Historic Resources to determine if any sites may be in the project area.

3. *Are there any public parks, recreation areas or wildlife/waterfowl refuges in the vicinity of the project? Have Land & Water Conservation Funds been used in the project area?*

The NH GRANIT Conservation Lands GIS layer shows one parcel that could be impacted by the project. The ~92 ac "UNH MacDonald Lot" has direct access from NH 108 on the West at a point approximately 0.2 mi north of Longmarsh Rd. in Durham. It is categorized as a Level 2 Conservation Land: "Unofficial Conservation Land".

The project area is also in close proximity to the Lamprey River or its major inlets, from about 0.1 mi north of Moat Rd. to a point approximately 0.1 mi south of the northern intersection with Simon's Ln. in Durham. The Lamprey River is a federally designated Wild & Scenic River.

4. *Are there any locally significant water resources or related protection areas in the project vicinity (e.g.: public water supplies, wellhead protection areas, aquifer protection districts, etc.)?*

The project area lies within the boundaries of three (3) wellhead protection areas, one in Durham and two in Newmarket. The Durham protection area surrounds NH 108 from a point approximately 0.15 mi north of Moat Rd. south to a point about 0.14 mi south of the northern intersection with Simon's Ln. The two wellhead protection areas for Newmarket are essentially coincident, because the wells are very close together. Their combined areas surround NH 108 from approximately 0.11 mi south of the Town Line in Newmarket south to a point approximately 0.09 mi north of Dame Rd. In this case the project area passes through the very outer edge of these two wellhead protection areas. The Town of Newmarket should be consulted about the status of these two wells and their respective wellhead protection areas. Newmarket has recently switched main public water sources from two wells to the Lamprey River, and these wells may be among the two.

Although not passing through the protection area, the project area (NH 108) does come within 0.2 mi (on the East) of another wellhead protection area in Durham in an area of Hydric B soils and in the vicinity of the intersection with Stage Coach Rd.

5. *Are you aware of any existing or potential hazardous materials or contaminants in the vicinity of the project?*

The data available to us at this time indicate only the underground storage tanks of the Newmarket Getty gasoline station as a possible hazard.

6. *Do you have any concerns that you feel the Department should be aware of for this project?*

The Town of Durham has a local Historic District Commission (HDC) that reviews and approves all building activity within the historic district. It would be prudent for DOT to contact the HDC for comment.

7. *Will the proposed project have a significant effect upon the surrounding area? If so, please explain.*

The greatest potential for environmental impact would be from disturbance of wetlands. Road improvements can significantly increase siltation and chemical runoff. Also, alignment and profile alteration operations can change flow and storage patterns in surface and groundwater, which in turn can have negative secondary consequences.

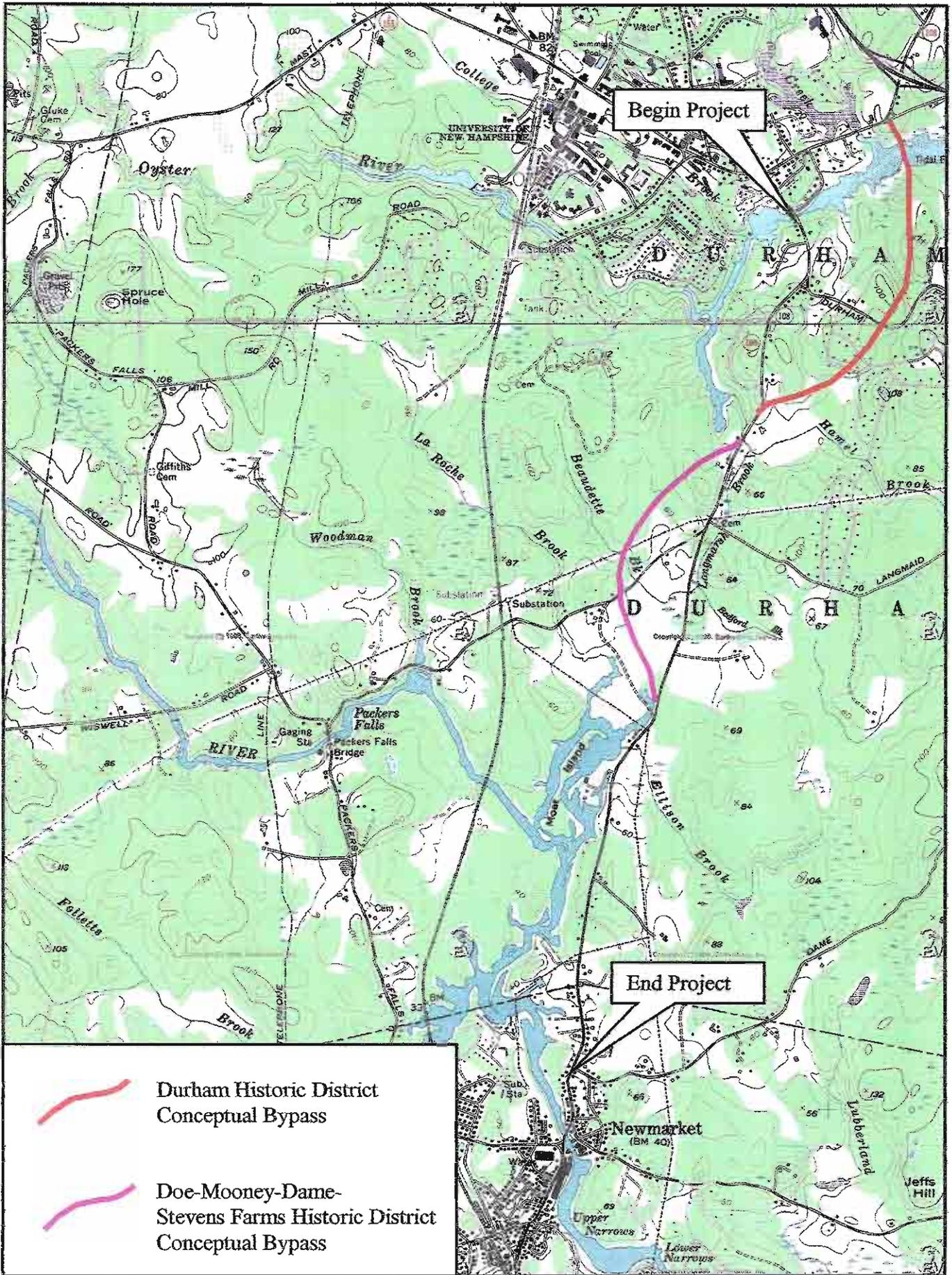
SRPC welcomes the opportunity to offer comment on DOT projects in our Planning Region and looks forward to providing similar and other services in the future.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas I. Crossman". The signature is fluid and cursive, with a large loop at the end.

Thomas I. Crossman
Sr. GIS Analyst

cc: Jim Campbell, Durham Town Planner
Clay Mitchell, Newmarket Town Planner
George Rief, Durham Commissioner
Bruce Bragdon, Durham Commissioner
Al Dixon, Newmarket Commissioner

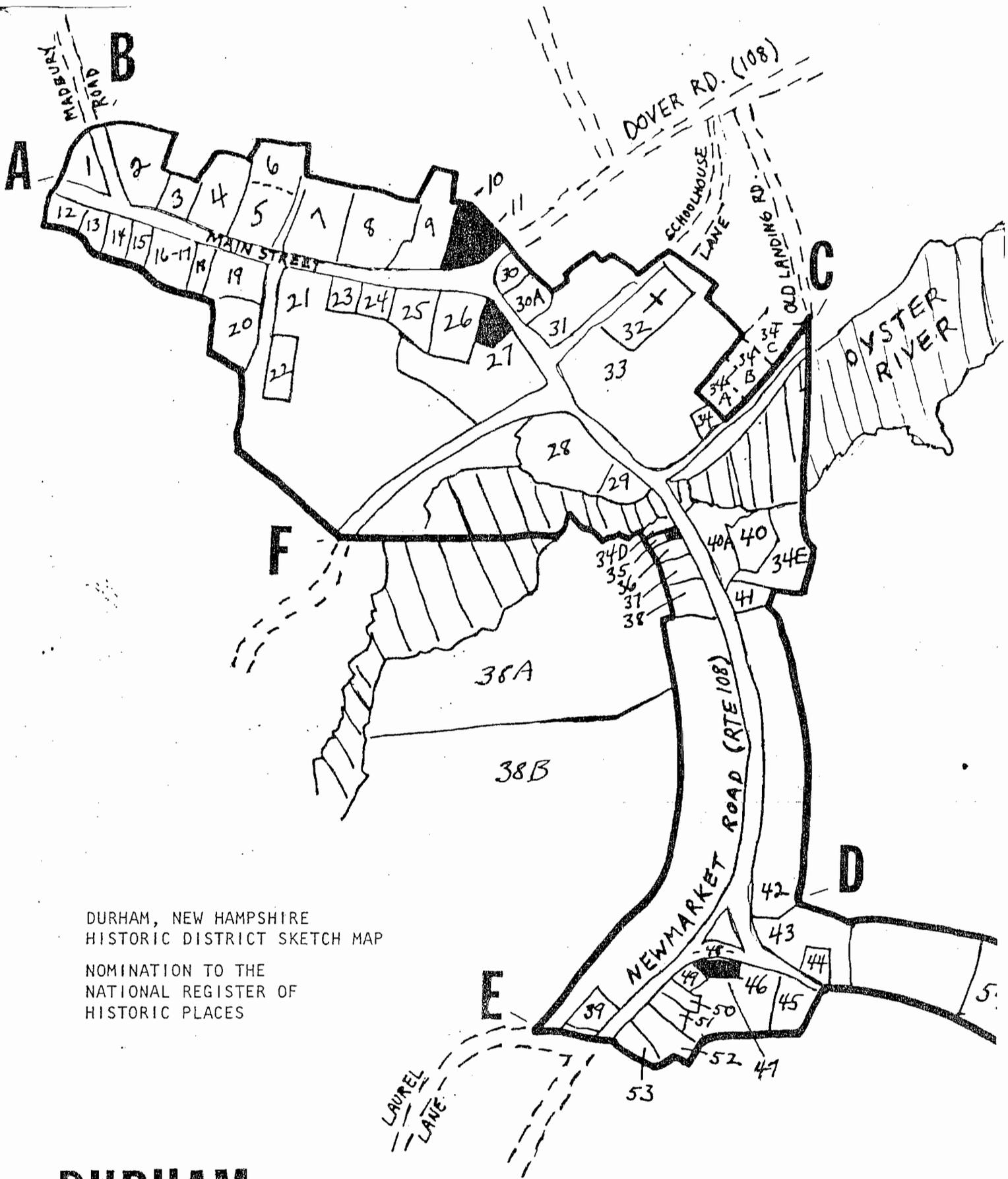


Scale 1:24,000

Dover West, NH & Newmarket, NH Quadrangle

DURHAM-NEWMARKET, STP-TE-X-5133(009), 13080

EXHIBIT E



DURHAM, NEW HAMPSHIRE
 HISTORIC DISTRICT SKETCH MAP
 NOMINATION TO THE
 NATIONAL REGISTER OF
 HISTORIC PLACES

DURHAM

HISTORIC DISTRICT

EXHIBIT F

INTRUSION

AREA FORM M
District

AREA NAME: Doe-Mooney-Dame-Stevens Farms Historic District

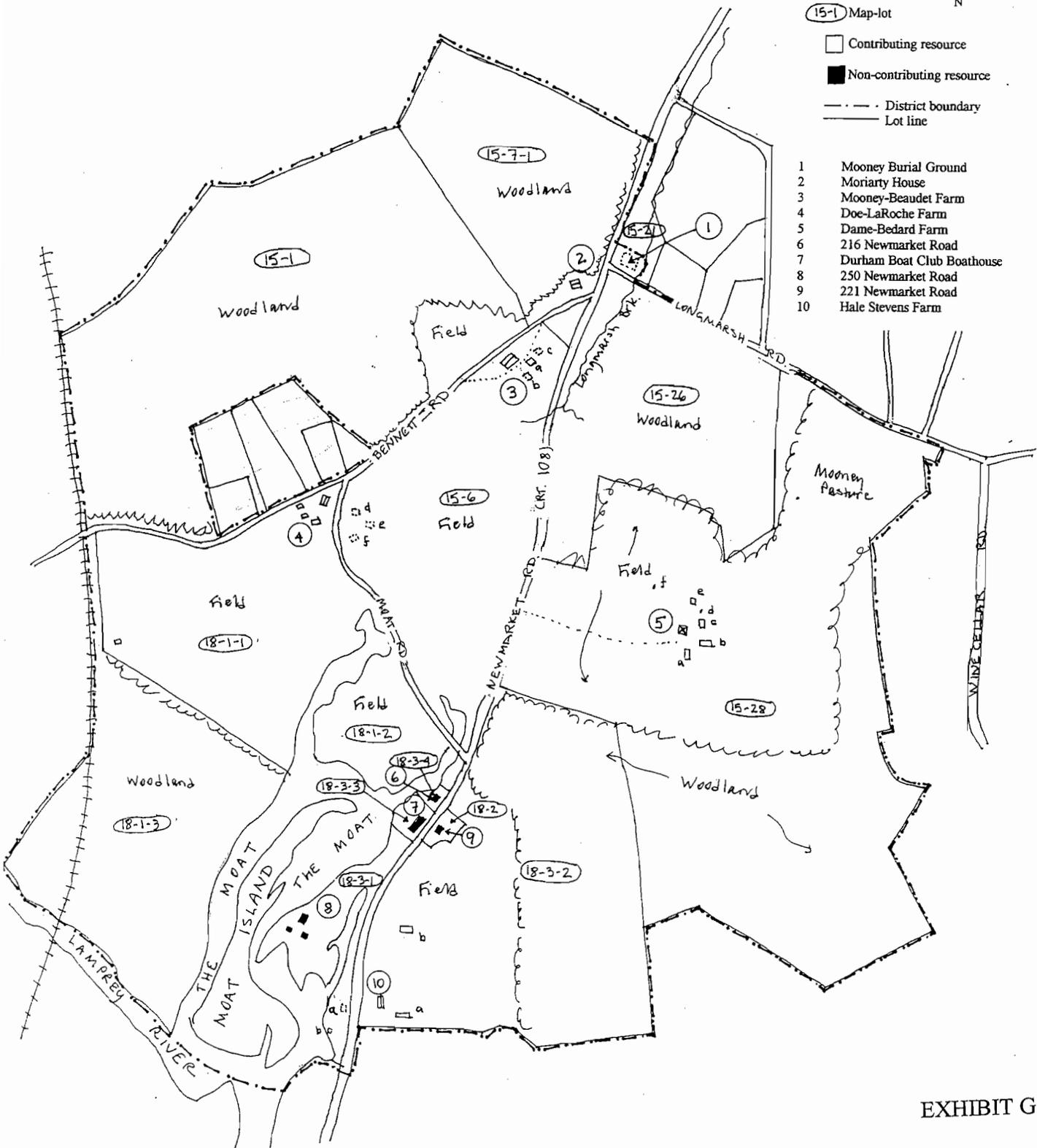
16. Historic District Sketch Map

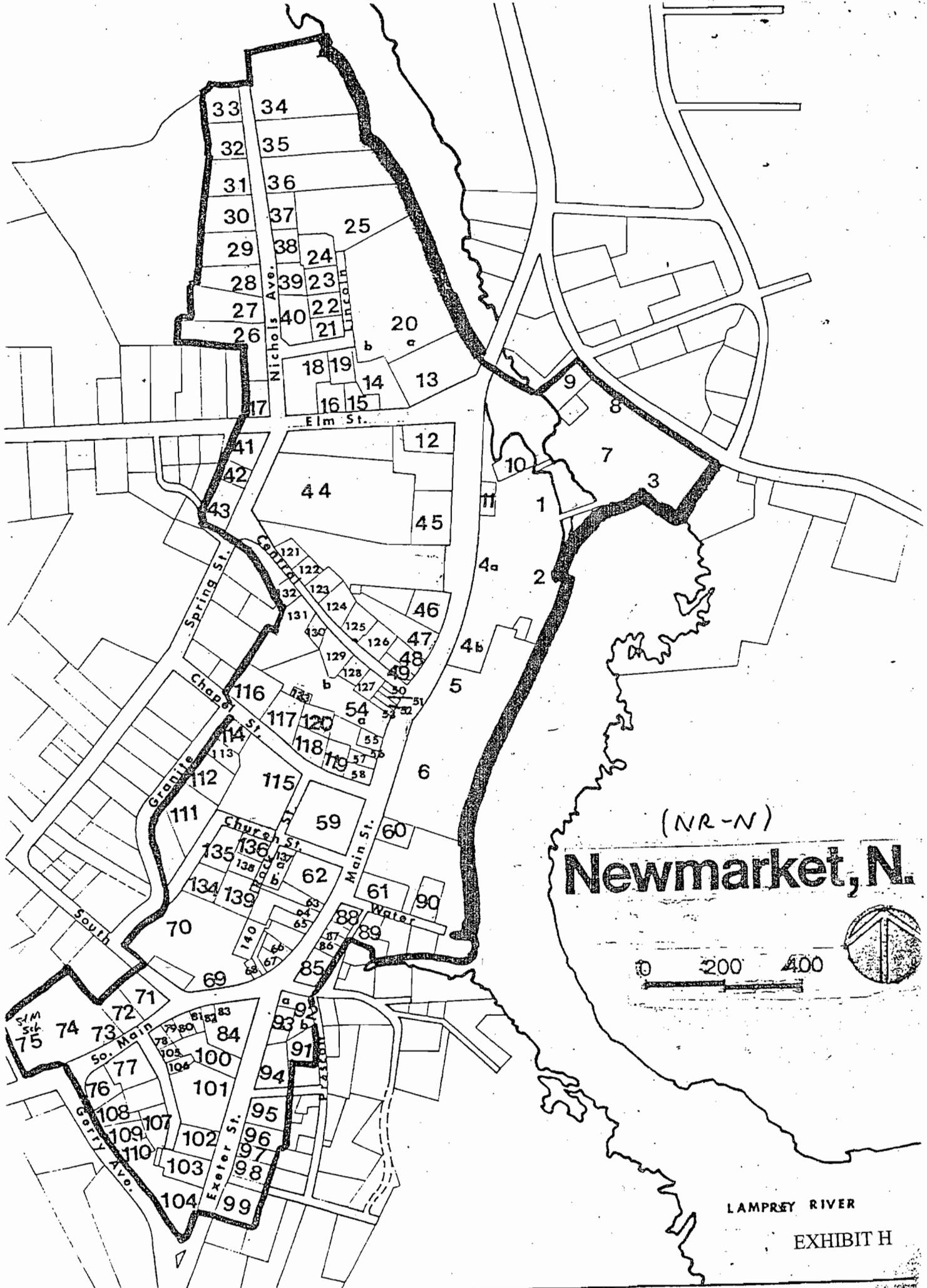
[WOODLAND OWNED BY UNH]

KEY TO MAP

- ① Property #
- ⊕ N
- ⑮-⑮ Map-lot
- Contributing resource
- Non-contributing resource
- - - District boundary
- Lot line

- 1 Mooney Burial Ground
- 2 Moriarty House
- 3 Mooney-Beaudet Farm
- 4 Doe-LaRoche Farm
- 5 Dame-Bedard Farm
- 6 216 Newmarket Road
- 7 Durham Boat Club Boathouse
- 8 250 Newmarket Road
- 9 221 Newmarket Road
- 10 Hale Stevens Farm





(NR-N)

Newmarket, N.



LAMPREY RIVER

EXHIBIT H

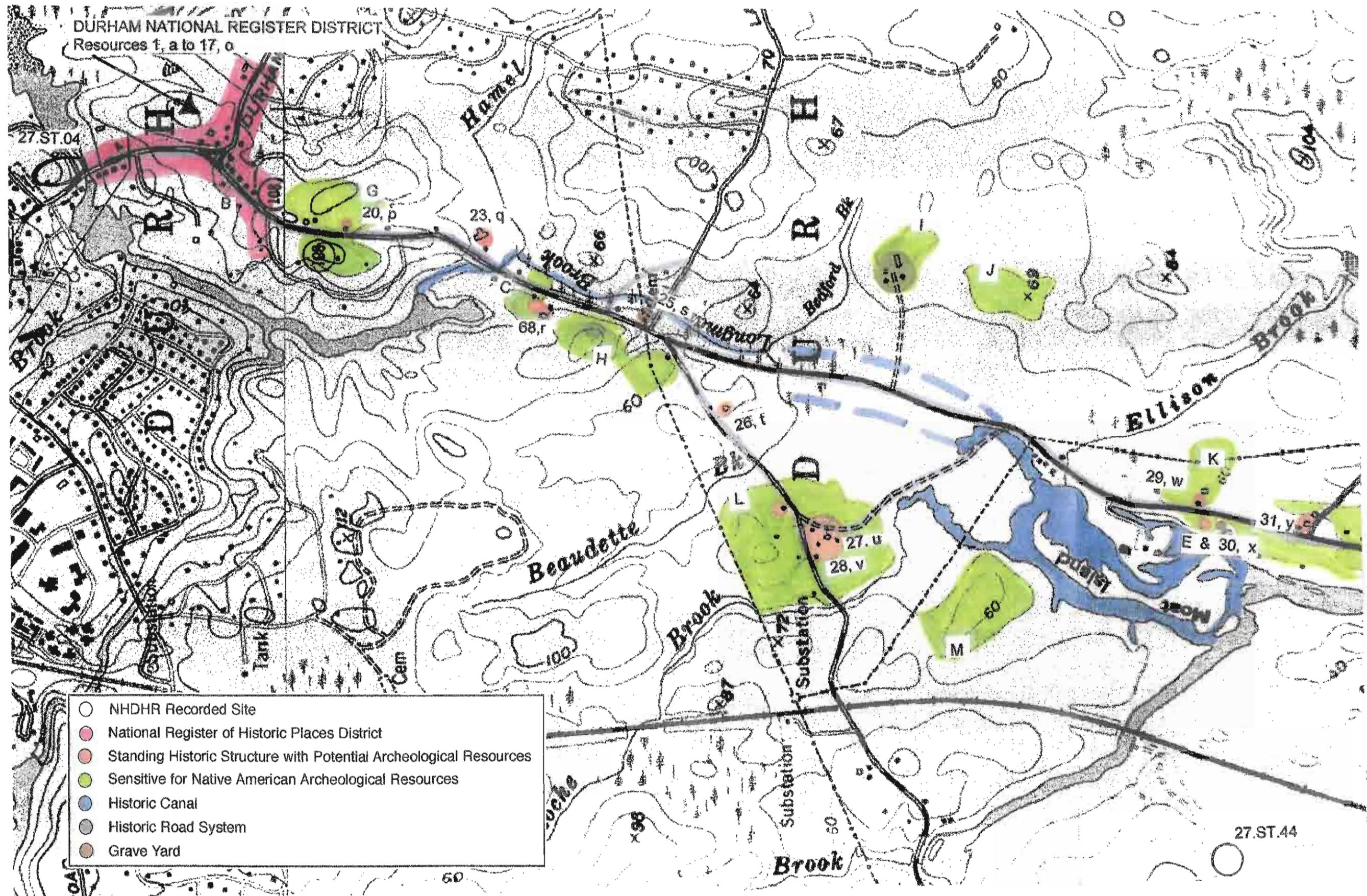


Figure 4. Archaeological Resources Depicted on USGS Quad, Dover West and Newmarket.

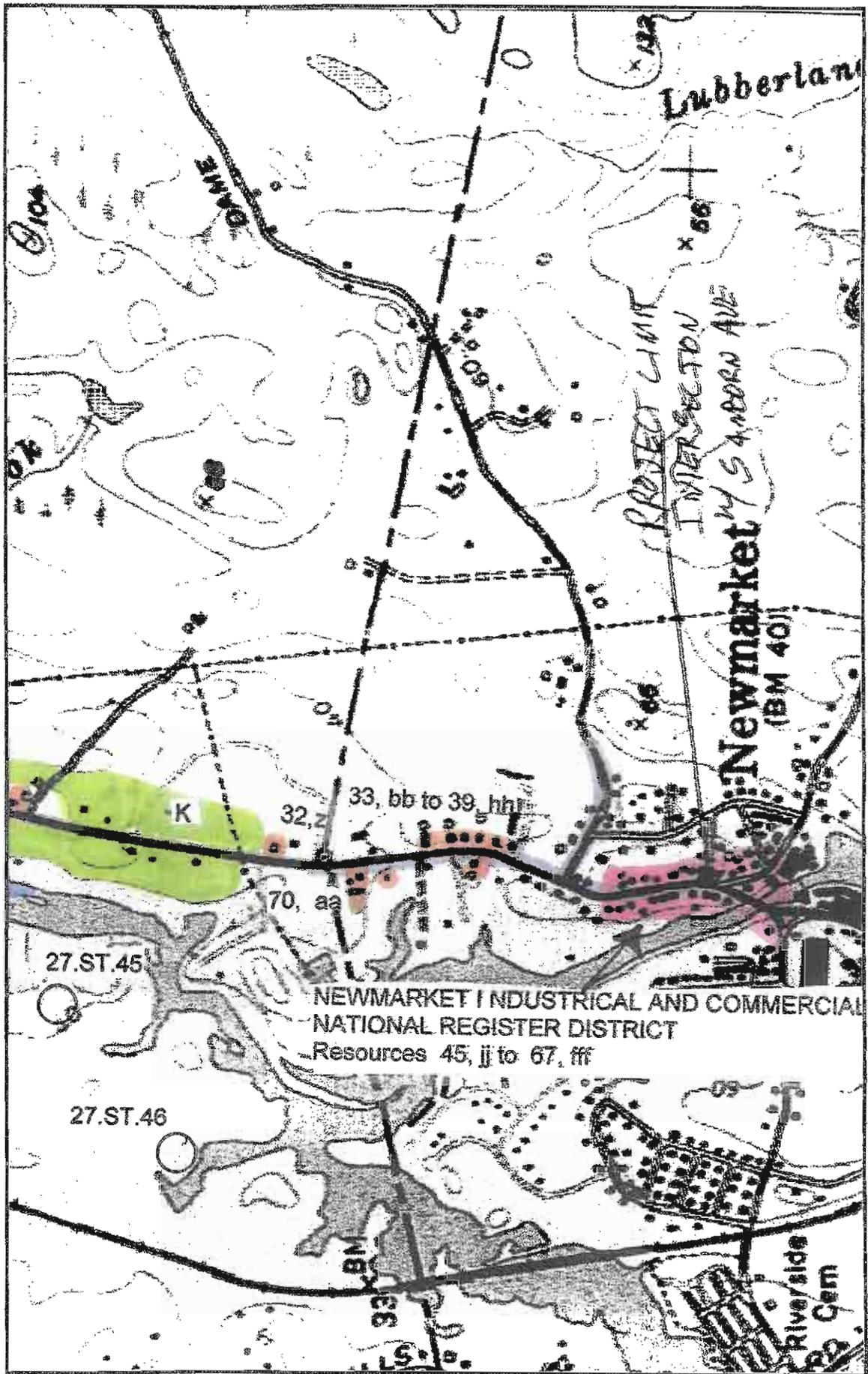
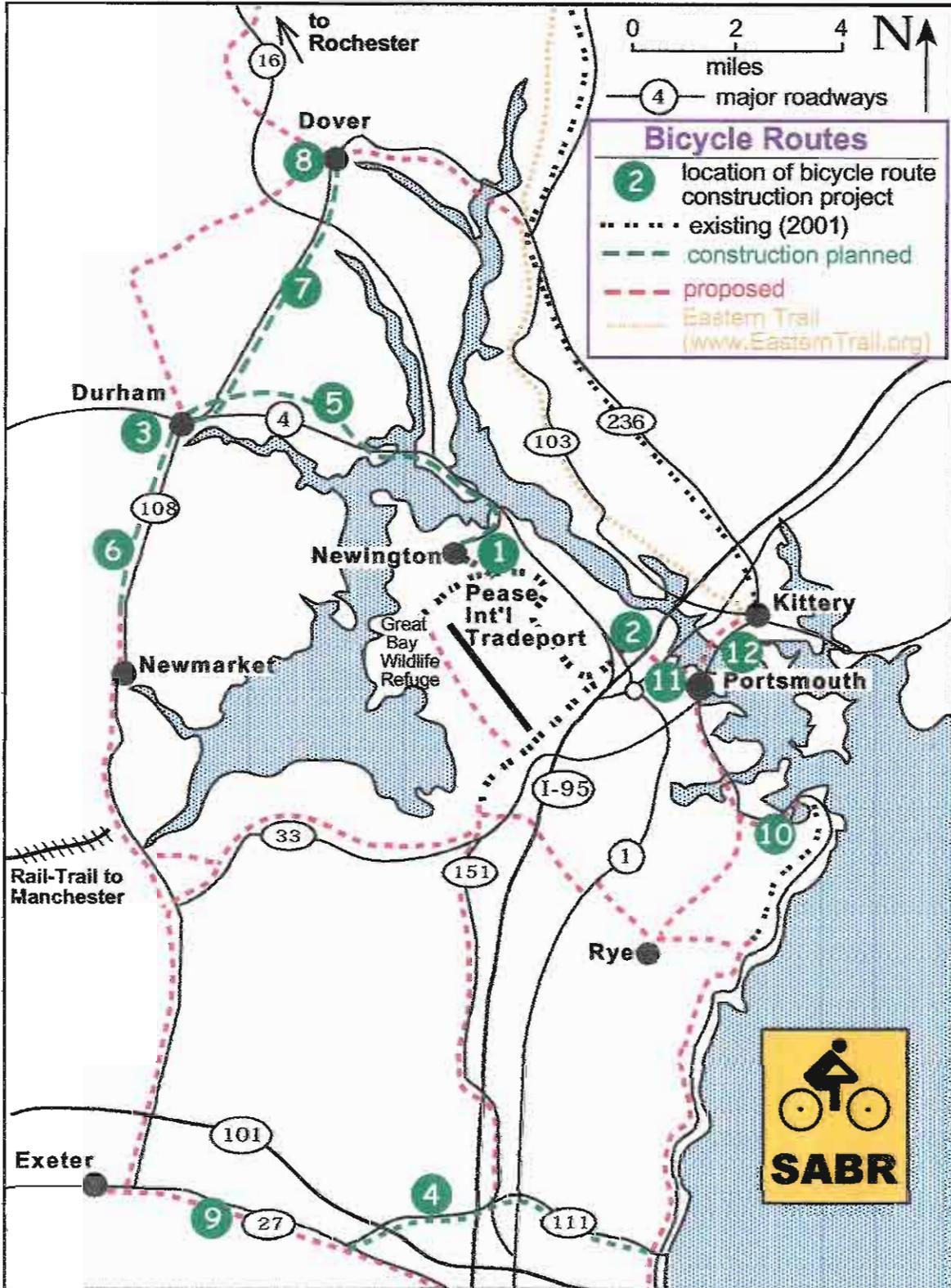


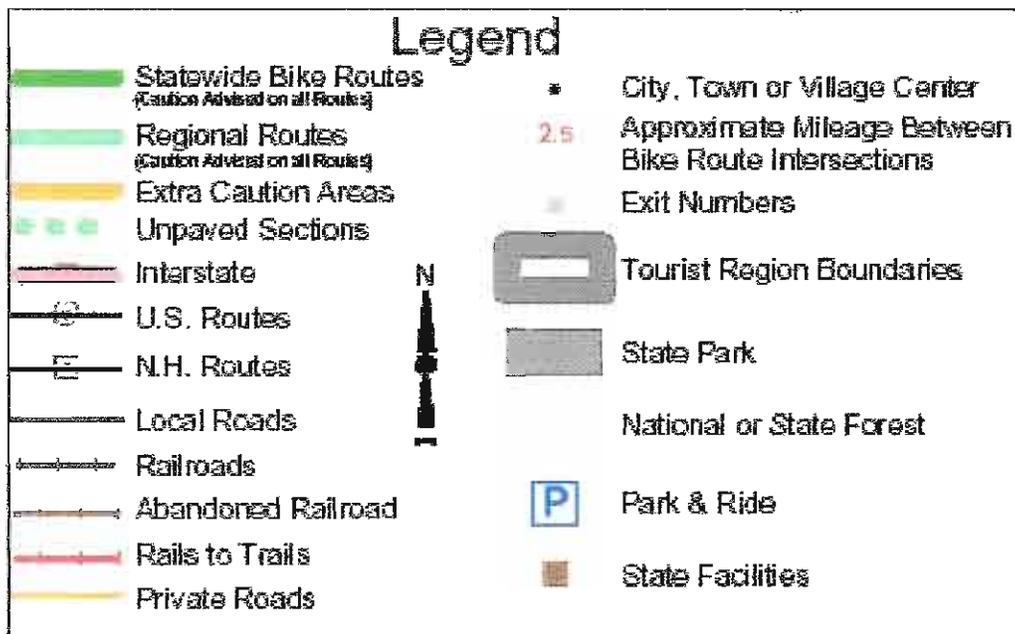
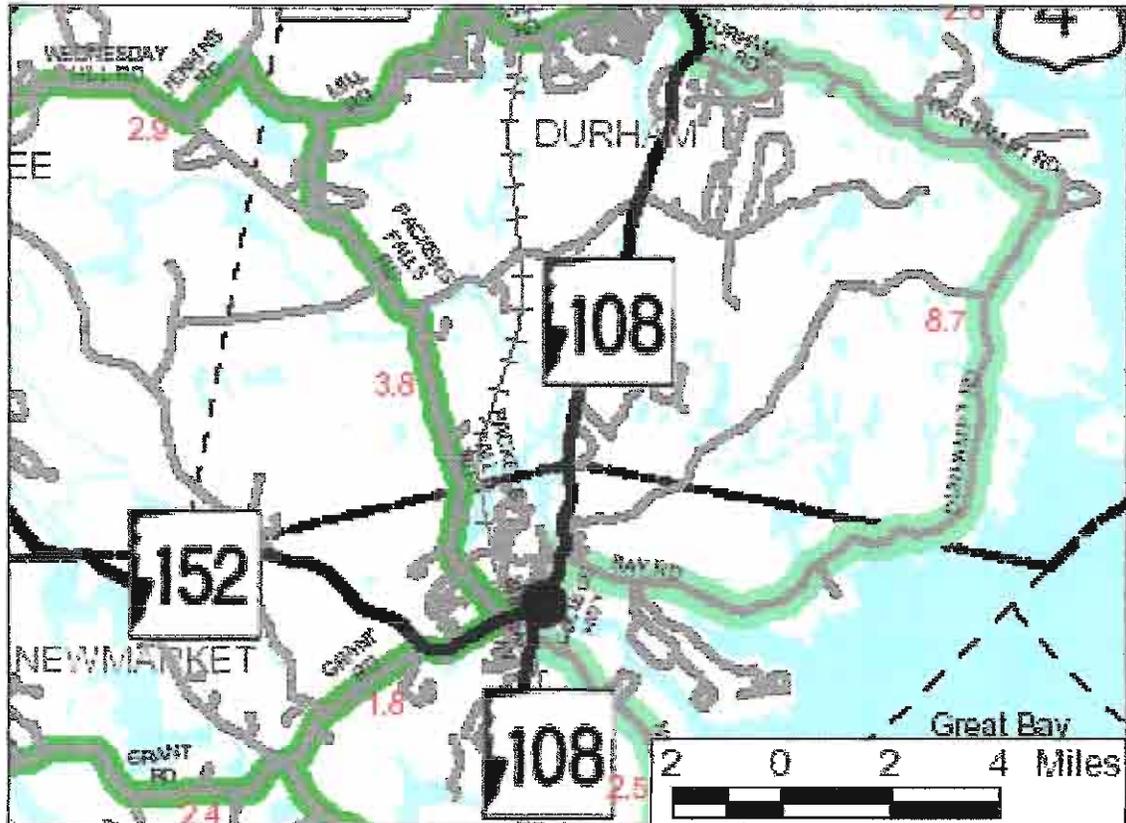
Figure 4 Archaeological Resources Depicted on USGS Quad, Dover West and Newmarket.

Seacoast/Great Bay Bicycle Transportation Network



SABR, PO Box 412, Durham, NH 03824 www.seacoastbikes.com

Seacoast Region State Bicycle Routes

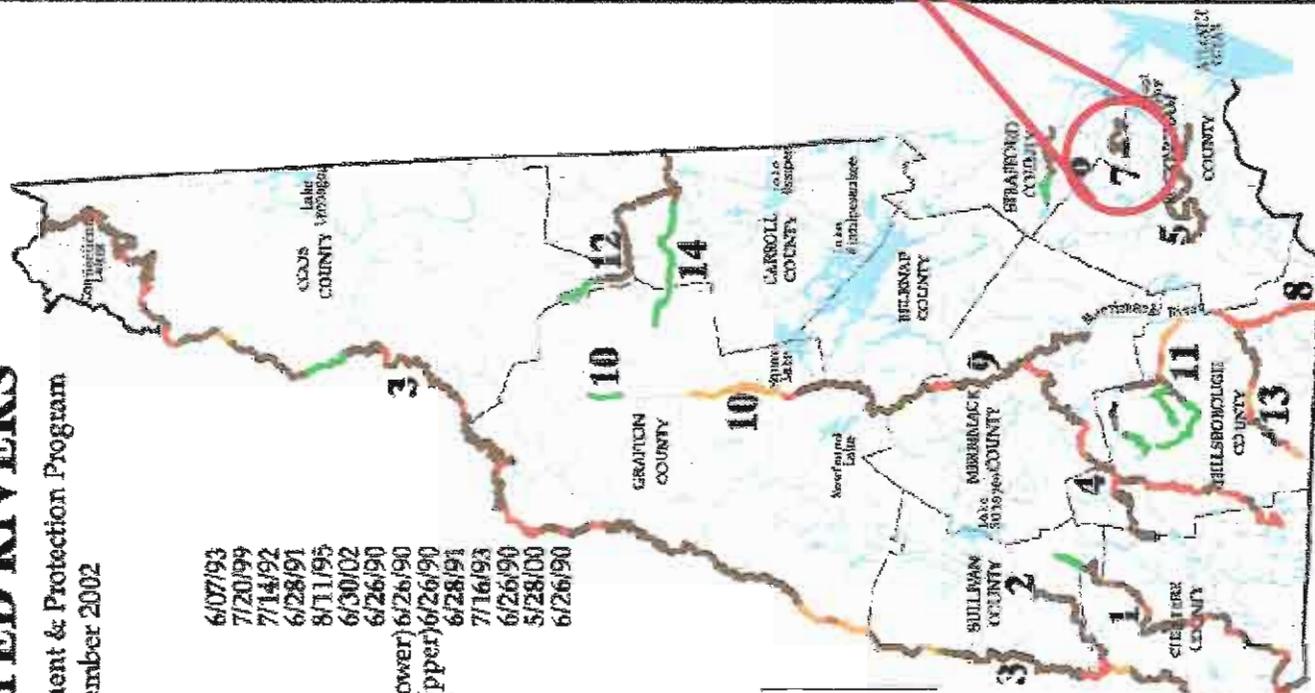


DESIGNATED RIVERS

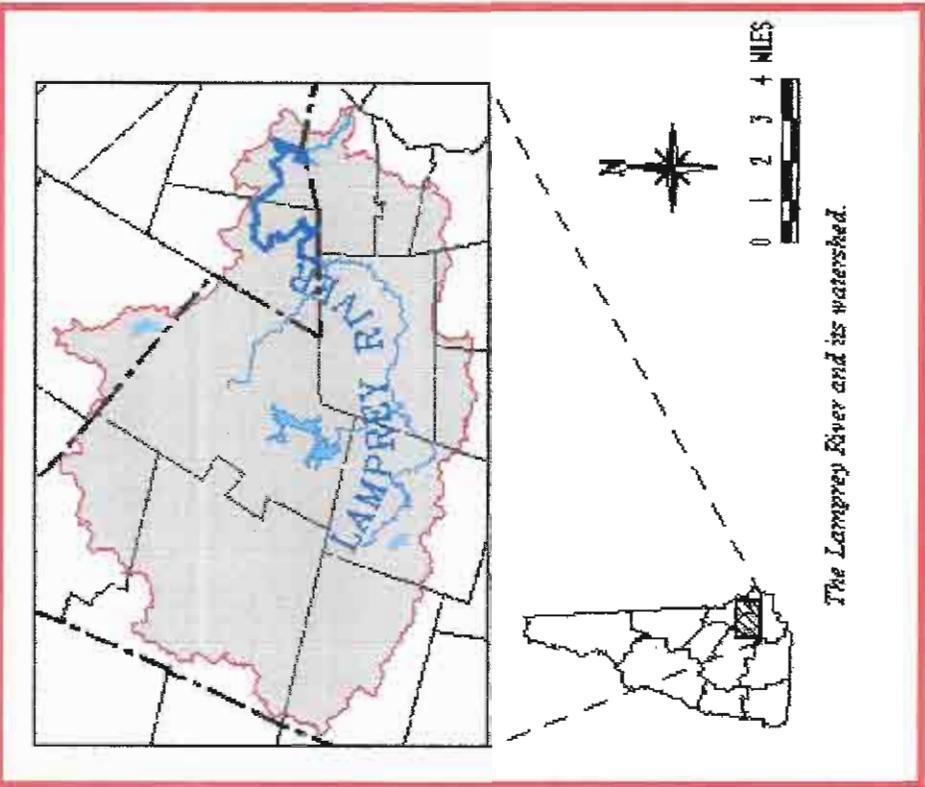
NH Rivers Management & Protection Program
September 2002

- | | <u>Designated Rivers</u> | |
|-----|--------------------------|---------|
| 1. | Ashuelot River | 6/07/93 |
| 2. | Cold River | 7/20/99 |
| 3. | Connecticut River | 7/14/92 |
| 4. | Contoocook River | 6/28/91 |
| 5. | Exeter River | 8/11/95 |
| 6. | Isinglass River | 6/30/02 |
| 7. | Lamprey River | 6/26/90 |
| 8. | Merrimack River (Lower) | 6/26/90 |
| 9. | Merrimack River (Upper) | 6/26/90 |
| 10. | Pemigewasset River | 6/28/91 |
| 11. | Piscataquog River | 7/16/93 |
| 12. | Saco River | 6/26/90 |
| 13. | Souhegan River | 5/28/00 |
| 14. | Swift River | 6/26/90 |

- RIVER CLASSIFICATION**
- COMMUNITY
 - RURAL COMMUNITY
 - RURAL
 - NATURAL



NHDES Watershed Management System



Designated Portion of the
Lamprey River (dark blue
above)

PANEL 0235E

FIRM
FLOOD INSURANCE RATE MAP
ROCKINGHAM COUNTY,
NEW HAMPSHIRE
(ALL JURISDICTIONS)

PANEL 235 OF 681

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

<u>COMMUNITY</u>	<u>NUMBER</u>	<u>PANEL</u>	<u>SUFFIX</u>
GREENLAND, TOWN OF	330210	0235	E
NEWINGTON, TOWN OF	330229	0235	E
NEWMARKET, TOWN OF	330136	0235	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



MAP NUMBER
33015C0235E

EFFECTIVE DATE
MAY 17, 2005

Federal Emergency Management Agency

FT

JOINS PANEL 0230

NE
E
0 FT

00 FT

3' 45"
70° 56' 15"

FLOOD HAZARD INFORMATION
IS NOT SHOWN ON THIS MAP
IN AREAS OUTSIDE OF
ROCKINGHAM COUNTY

STRAFFORD COUNTY
ROCKINGHAM COUNTY

NH. COLLEGE HWY

103

LAMPREY ST

BOARDMAN AV

SANBORN AV

HAW ST

MACCALLEN DAM

CENTRAL ST

CHAPPEL ST

CREIGHTON ST

LAMPREY RIVER

ZONE AE (EL. 7)

ZONE X

ZONE X

ZONE A

Lubberland Creek

ZONE X

ZONE AE (EL. 7)

ZONE X

SMITH GARRISON RD

SMITH GARRISON RD

ZONE X

BIRCH DR

CUSHING RD

DOE GARRISON RD

SMITH GARRISON RD

SMITH GARRISON RD

ZONE X

MOODY PT RD

MOODY PT RD

ZONE AE (EL. 7)

LAMPREY RIVER

ZONE AE (EL. 7)

ZONE A

NEW RD

ZONE X

BOSTON AND MAINE RAILROAD

BARBERRY COAST RD

BAY RD

BAY RD

CUSHING RD

LUBBERLAND RD

JOINS PANEL 0245

344,000 M

343,000 M

345,000 M

PANEL 0381D

FIRM
FLOOD INSURANCE RATE MAP
STRAFFORD COUNTY,
NEW HAMPSHIRE
(ALL JURISDICTIONS)

PANEL 381 OF 405

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

<u>COMMUNITY</u>	<u>NUMBER</u>	<u>PANEL</u>	<u>SUFFIX</u>
DURHAM, TOWN OF	330146	0381	D

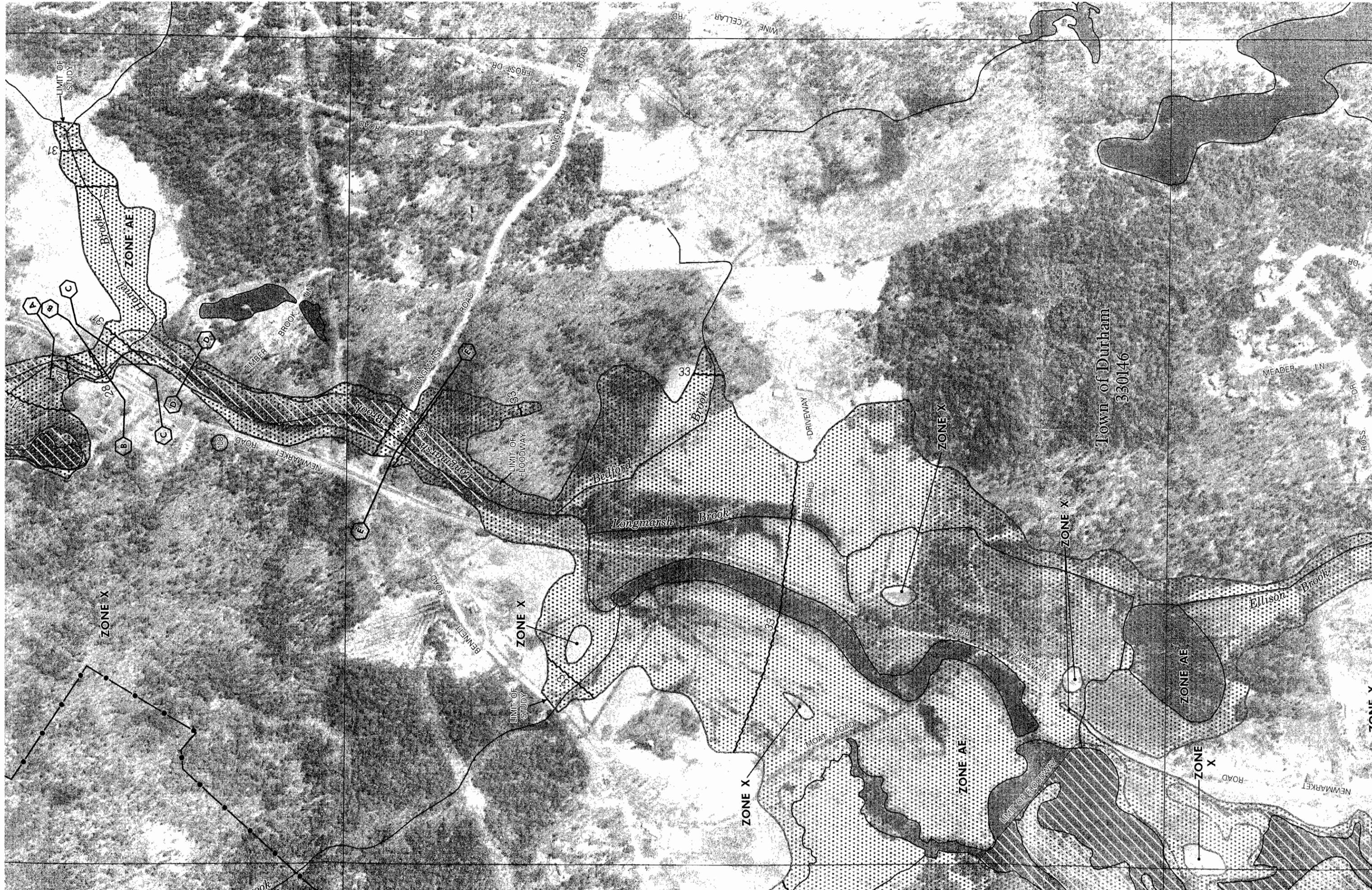
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



MAP NUMBER
33017C0381D

EFFECTIVE DATE
MAY 17, 2005

Federal Emergency Management Agency



70° 54' 22.5"
44° 07' 30"



4776⁰⁰⁰ M

4775⁰⁰⁰ M

JOINS PANEL 0385

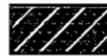
LEGEND



SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.



FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.



OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.



OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.



COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS



OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.



1% annual chance floodplain boundary



0.2% annual chance floodplain boundary



Floodway boundary



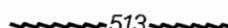
Zone D boundary



CBRS and OPA boundary



Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.



Base Flood Elevation line and value; elevation in feet*

(EL 987)

Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the National Geodetic Vertical Datum of 1929



Cross section line



Transect line

97° 07' 30", 32° 22' 30"

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere

4276⁰⁰⁰ M

1000-meter Universal Transverse Mercator grid values, zone 19

600000 FT

5000-foot grid ticks: New Hampshire State Plane coordinate system, (FIPZONE 2800), Transverse Mercator projection

DX5510 X

Bench mark (see explanation in Notes to Users section of this FIRM panel)

● M1.5

River Mile
MAP REPOSITORY

Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
MAY 17, 2005

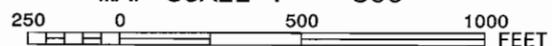
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.



MAP SCALE 1" = 500'



Initial Site Assessment (ISA) Checklist

Project Name: Durham-Newmarket
Federal Number: STP-TE-X-5133(009)
State Number: 13080

Date: May 4, 2005
Reviewer: Jonathan Evans

1. Project Features:

New ROW YES Excavation YES Relocate Utilities YES

2. Review of Existing Information (Check sources used)

DES Files

Sanborn Maps

Local Officials

Aerial Photos (list dates)

Fire Department

Chain of title

Land Owners/ Interview

Does the review of existing information indicate the presence or potential presence of hazardous or contaminated material? (If yes, identify, locate and explain.) Yes. There are five (5) properties within the project area that are listed with the Department of Environmental Services One Stop Data Retrieval System as having a history of contamination. They are:

- Ruth Chamberlin owns a parcel located at 28 Newmarket Road in the town of Durham NH. This property has undergone remediation for an on-premise use facility containing fuel oil, discovered on 8/18/93. The file is closed, however cleanup costs associated with contamination from this site are permanently eligible for Oil Discharge and Disposal Cleanup Fund (ODDCF) reimbursement.
- The Great Bay Animal Hospital/Kennel operates a facility located at 27 Newmarket Road in the town of Durham, NH. This property is being monitored and managed for control of underground injection. This project was initiated on 11/17/93 and is still open.
- The Lamprey River Bowling Lanes site is located at 22 North Main Street in the town of Newmarket, NH. This property has undergone remediation for a leaking underground storage tank discovered on 5/8/95. The file is closed, however cleanup costs associated with contamination from this site are permanently eligible for ODDCF reimbursement.
- The Newmarket Getty site is located at 37 North Main Street in the town of Newmarket, NH. This property has undergone remediation for a leaking underground storage tank discovered on 9/29/93. The file is currently unassigned. Cleanup costs associated with contamination from this site are eligible for ODDCF reimbursement.

- Thomas Marquis owns a parcel located at 24 North Main Street in the Town of Newmarket. This property has undergone remediation for an oil spill or release which was discovered on 12/17/97. The file is closed and the sites eligibility for ODDCF reimbursement is unknown.

3. **Field Review of Project Area (attach photos, if taken)** A field evaluation was conducted on January 4, 2005. There was no visual evidence of contamination in the project area

A. **Setting (Undeveloped, Rural, Urban)** Mixed

B. **Land Uses (Industrial, Commercial, Residential, Agricultural, Forested)**

Current predominant land uses Mixed (Forested/Commercial/Residential)

Previous predominant land uses Mixed

Associated land uses Mixed

Adjacent land uses Mixed

C. **Storage Structures (Observed or Suspected)**

Underground Tanks

Drums

Surface Tanks

Basins

Transformers

Landfills

Sumps

Other

Ponds

D. **Contamination**

Surface Staining

Vegetation Damage

Oil Sheen

Dead Fauna

Odors

Other

None

E. Potential Asbestos Containing Materials*

Buildings

Serpentine

Sprayed-on Fireproofing

Pipe Wrap

Acoustical Plaster

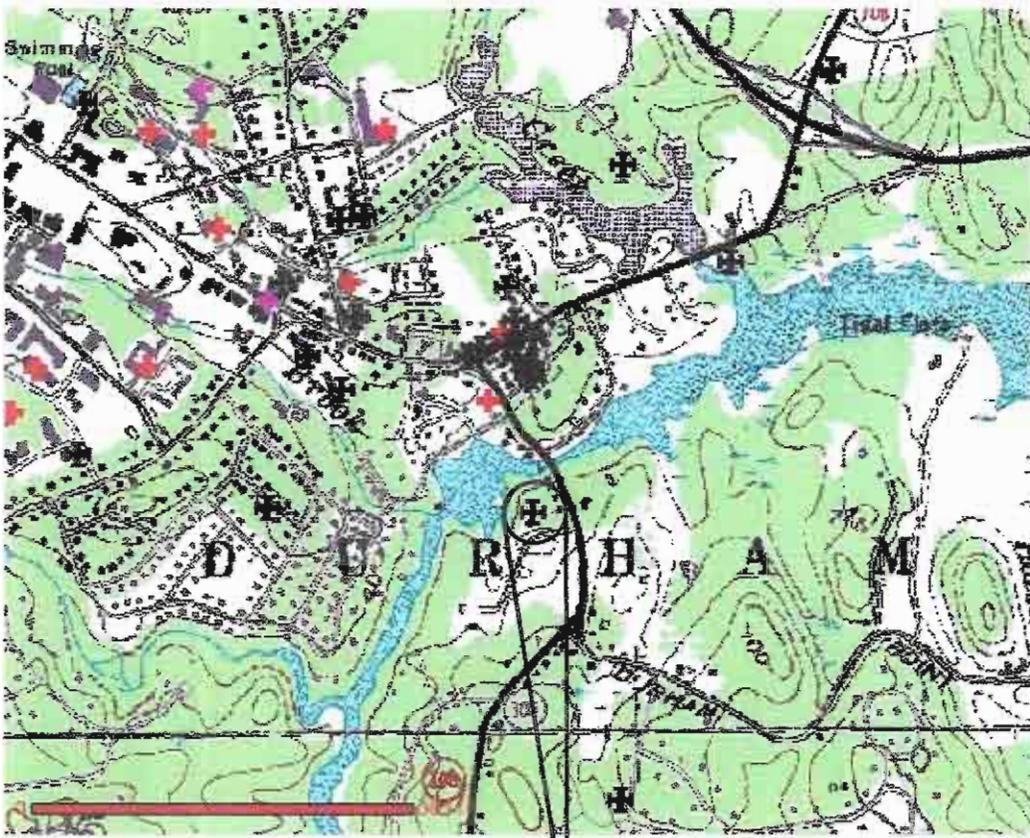
Friable Tape

Fill Material

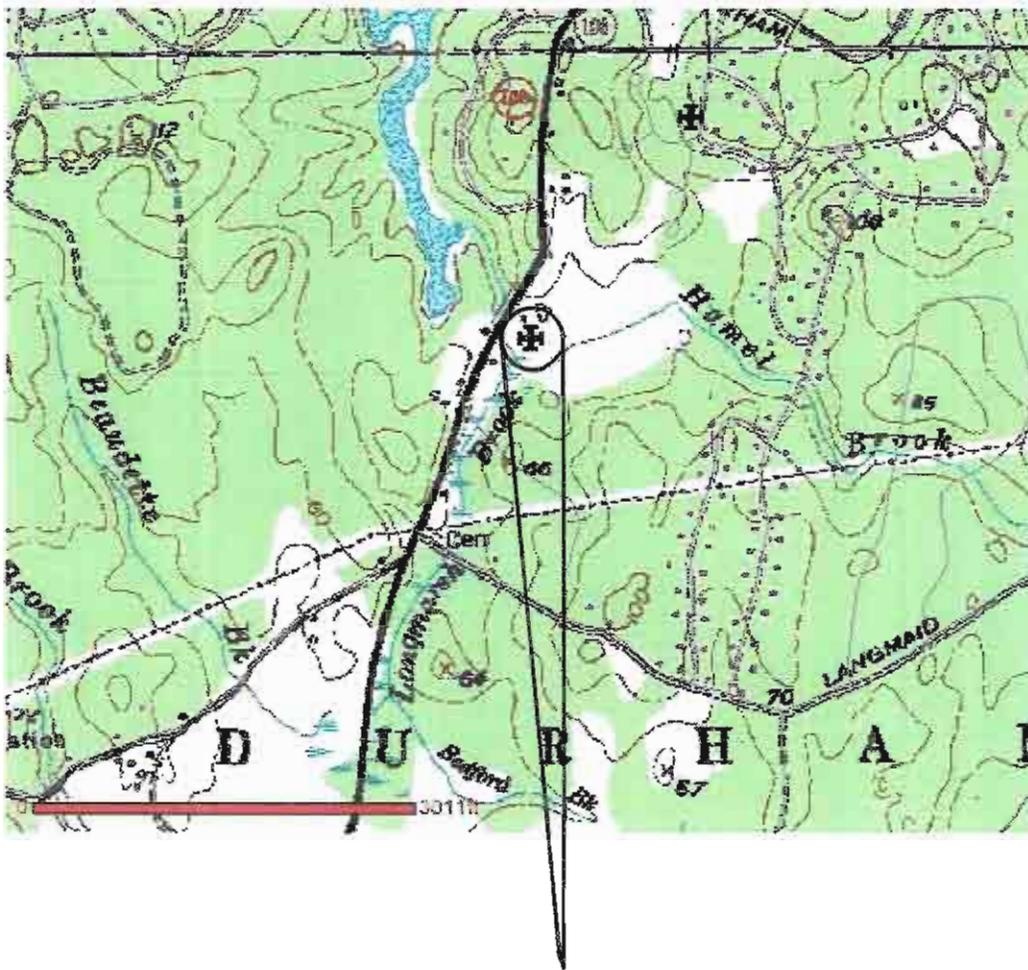
None

Does the field review indicate the presence or potential presence of hazardous or contaminated materials? (If yes, identify, locate and explain.) No.

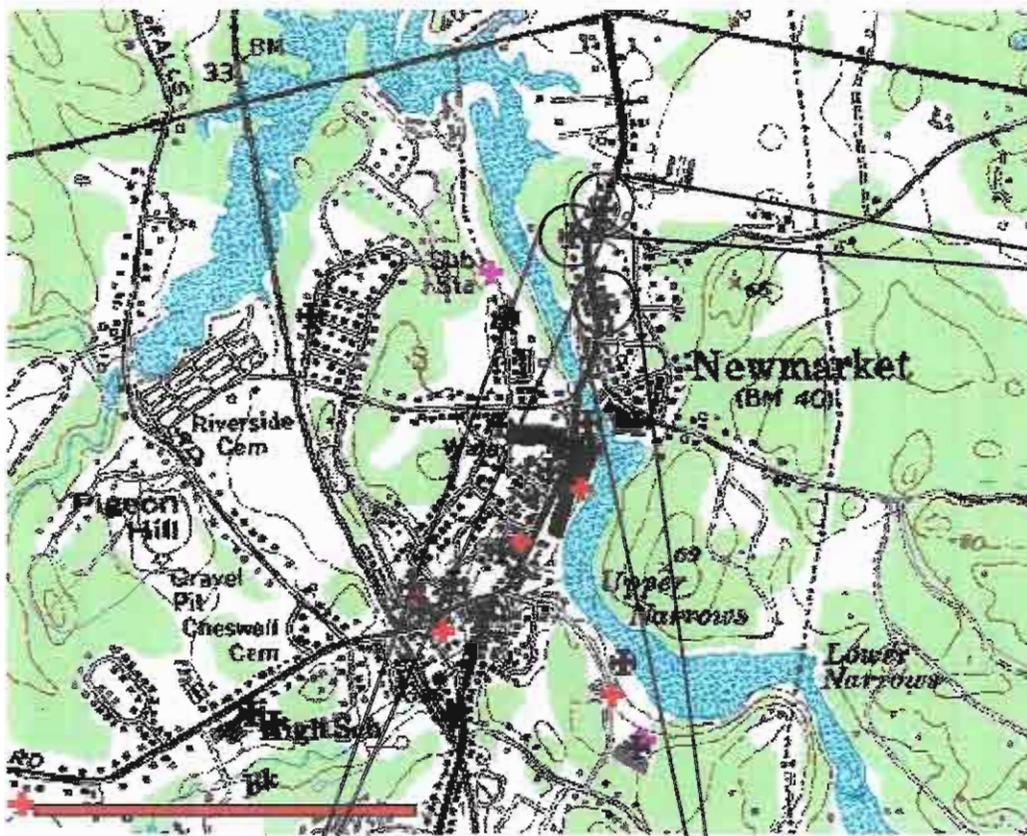
- *The Bureau of Right-of-Way should be notified when buildings possibly containing asbestos are to be taken or moved.*



#16402
RUTH CHAMBERLIN
OPUF - CLOSED



#16396
GREAT BAY ANIMAL HOSPITAL/KENNEL
U.I.C. - REGISTRATION



#4362
LAMPREY RIVER
BOWLING LANES
LUST- CLOSED
* PERMANENTLY
ELIGIBLE FOR
ODDCF
REIMBURSEMENT *

#17261
THOMAS MARQUIS
SPILL/RLS - CLOSED

#4363
NEWMARKET GETTY
LUST- UNASSIGNED
* ELIGIBLE FOR ODDCF
REIMBURSEMENT *

**STATE of NEW HAMPSHIRE
NEW HAMPSHIRE FISH AND GAME**

MANAGEMENT OPERATIONS PLANNING REPORT

PROPERTY - Powers tract of Great Bay National Estuarine Research Reserve

TOWN - Durham **ACRES:** 92.4 acres **ESTIMATED REENTRY** – single entry

DATE OF PROJECT – 2006-7 (subject to permit approvals)

PROJECT DESCRIPTION - A wetland restoration project to be accomplished by means of two small water control structures and a small excavation approximately 0.2 acres in size.

LAND USE/COORDINATION/REVIEW - Land use is wildlife management within the Great Bay National Estuarine Research Reserve. Project coordination by the New Hampshire Fish & Game Department (NHF&G) personnel with input & review from; Department of Transportation (DOT), Department of Environmental Services (DES), NH Division of Historic Resources (NHHR), Great Bay Resource Protection Partnership (GBRPP), Natural Resources Conservation Service (NRCS), and The Nature Conservancy (TNC).

NON-GAME SPECIES - Blanding's Turtle

NHI SITE: RARE SPECIES AND EXEMPLARY NATURAL COMMUNITIES - None reported from NH Natural Heritage Bureau (NHNHB). A new population of *Sparganium eurycarpum*, Giant Bur-reed, State Threatened discovered in 2004. The population is growing around the edge of a "deep" open water portion of a drainage ditch within the abandoned pasture/wetland. TNC has determined the proposed water control structures will have no affect on this population and may extend its potential habitat.

HISTORY - The Powers tract has a long history of farming with the last agricultural activity being the drained field used to pasture Belted Galloway cattle prior to acquisition. TNC acquired the property in May 2003 on behalf of the GBRPP with funds provided by the National Oceanic and Atmospheric Administration (NOAA). TNC transferred ownership of this tract to NHF&G in December 2003 with the condition the property remain within the federally designated Great Bay National Estuarine Research Reserve a NOAA acquisition grant requirement.

As part of the acquisition process, Exeter Environmental Associates completed A Phase 1 Environmental Site Assessment Report. The assessment revealed no evidence of any recognized environmental condition in connection with the property. As part of the proposed DOT Route 108 widening, a Determination of Eligibility study found the Powers property to be part of an extensive area of farms that is eligible for listing as a Historic District on the National Historic Register of Historic Places. The justification is the area's long and significant association with early settlement and agricultural pursuits in the town of Durham.

Since transfer to NHF&G, the Department has restored an upland area of sandy soil by removing two small outbuildings and a concrete slab. No other management has taken place to date. In 2004, the NRCS designated cost share funding through its Wetland Restoration Program ("WRP") to complete the management activities outlined in this report. In December 2004, we shared our plans to restore this wetland to its natural condition with DOT. The proposed Route 108 widening is likely to directly impact the Powers property and an additional 55 acre NHF&G Wildlife Management Area located to the north.

LOCATION -

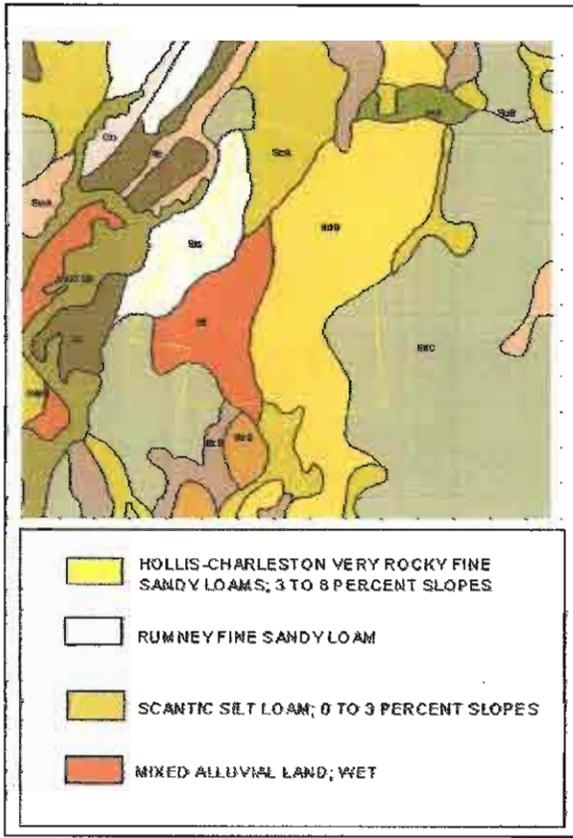


The proposed activity will take place in Management Unit 2 shown above.

MANAGEMENT UNIT AREA - Approximately 9.3 acres

WATER/SOILS CONTROLS - Existing farm utility roads will access the area of excavation without impacting the mixed alluvial poorly drained soil adjacent to the project.

SOIL/SITE -



There are four soil types located on the Powers property. However, the soil in the area of the proposed project is homogeneously classed as “Mixed Alluvial Land; Wet”. This soil type underscores the Management Unit’s natural wet state commonly found at the bottom of streams, wetlands, or rivers. This soil type is moderately well drained to very poorly drained.

Management Unit 2 is reverting into a shallow emergent marsh. The vegetation within this abandoned field is a combination of wetland sedges and pasture grasses, and patches are exposed bare mud. The drainage ditches are filling in naturally and backing up small pools of water on the field. Alders, sedges, rushes, and red maple are common vegetation types associated with “Mixed Alluvial Land & Wet soils”. The most common species growing in the Management Unit are Reed Canary Grass (*Phalaris arundinacea*) and (*Juncus effusus*). The wetter area of the field and the ditch edges are occupied by wetland plants including Cattail (*Typha angustifolia*) and Canada Blue-joint (*Calamagrostis canadensis*).

MANAGEMENT OBJECTIVE - Restore the existing low wet field back to a natural wetland condition in Management Unit 2. This Management Unit contains Ellison Brook which bisects the area. Historically the realignment of Ellison Brook to the Lamprey River by ditching reclaimed the wetland as field. These ditches were dug perpendicular to the brook to drain the field and direct water towards this central brook (Ellison Brook). The Powers property sits on the watershed divide between the Oyster and the Lamprey watershed. The low level topography in this area is often flooded during the spring thaw and heavy rains. The ditches in the field are beginning to plug naturally and the field is naturally reverting to a shallow, open, emergent marsh. The goal of this project is to expedite this naturally occurring infilling by installing two small water control structures to convert approximately 9.3 acres of seasonally flooded wetland to year round shallow water. Installation of water control structures will create a shallow water condition at levels suitable for providing waterfowl habitat for dabbling/feeding, particularly Black Duck & Wood Ducks. A small area of excavation is also planned to provide additional over-wintering habitat for turtles, particularly the Blanding’s turtle (*Emydoidea blandingii*), which has been documented in the area. Blanding’s need shallow water with soft muddy bottoms and aquatic vegetation for which this site is particularly suited. Although specific target groups for this restoration are waterfowl and turtles, the project will provide wetland habitat for a wide range of other plant and wildlife species.

MANAGEMENT PRESCRIPTION - Install two wooden water control structures to plug existing drainage ditches in Management Unit 2 for wetland restoration and excavate an area approximately 0.2 acres to a depth of 10 feet to enhance winter turtle habitat.

ALTERNATIVE PRESCRIPTIONS -

1.) Do nothing in Management Unit 2.

The drainage ditches we propose to plug are infilling naturally. Addition of two water control structures would expedite the process, and more importantly give us control of water depth. This is important for wildlife since feeding turtles and waterfowl need shallow water depth to support appropriate vegetation. Water control structures are also important to avoid exacerbating the occasional flooding of Route 108 that takes place currently. DOT has determined it is not economically feasible to address this issue as part of the road widening. Such flooding is rare but proximity of this wetland to the road means to do nothing, as a management action is likely to result in increased flooding of the major transportation corridor between Newmarket and Durham.

A 1.2 acre section of the Powers property is composed of extremely sandy soil (fill) providing valuable turtle nesting habitat, along with the emergent marsh as available feeding habitat. The only component of habitat not available on this property, due to fragmentation, is over-wintering habitat forcing turtles using the area to migrate off the property across highway Rte 108 to a very uncertain faith. The negative impact of not completing the proposed excavation is the lost opportunity to establish a complete & functional habitat condition in the area.

WILDLIFE IMPACT - The Powers property is part of the 4,100 acre Crommet Creek Conservation Area, a focus of significant wildlife activity in the region as identified by the GBRPP. This Conservation Area consists of 48% protected land in an area of the state seeing rapid development, both residential and commercial. A network of wetlands characterizes the Crommet Creek area. Rehabilitation of the wetland on the Powers property would reestablish functioning wetlands to the larger complex connected via Ellison Brook by beaver impounded wetlands off of Dame Road in the Crommet Creek watershed. The purpose of this management action is wetland restoration specifically to enhance wildlife habitat.

RECREATION/VISUAL IMPACT - This property has only been in public trust for just over a year. The project's wildlife benefits should allow for more wildlife viewing and hunting opportunities for the public.

ROADS/TRAILS - The Powers property has approximately 2,300 ft of frontage on Rte. 108 in Durham. It has two main access points off Rte. 108: a gated entrance at the southern end of the property and an old woods road at the northern end of the property. No additional roads or trails would be created to complete this proposed wetland restoration. Old farm access roads still exist and will be the access to the proposed excavation area without impacting the mixed alluvial/wet soil area.

The Recommended Voluntary Forest Management Practices for New Hampshire: This operation will meet the criteria set forth in The Recommended Voluntary Forest Management Practices for New Hampshire.

DATE	PROJECT ADMINISTRATOR
-------------	------------------------------

DATE	APPROVED, WATERFOWL BIOLOGIST
-------------	--------------------------------------

DATE	APPROVED, REGIONAL FORESTER
-------------	------------------------------------

DATE	APPROVED, FISH GAME HABITAT BIOLOGIST
-------------	--

TCM 3/89 attachments



New Hampshire Fish and Game Department

Region 3

225 Main Street, Durham, NH 03824-4732
(603) 868-1095
Headquarters: 11 Hazen Drive, Concord, NH 03301
(603) 271-3421

FAX (603) 868-3305
TDD Access: Relay NH 1-800-735-2964
Web site: www.wildlife.state.nh.us

Lee E. Perry
Executive Director

Kevin Nyan
Senior Environmental Manager
NH Department of Transportation
PO Box 483, 7 Hazen Drive
Concord, NH 03302-0483

16 May 2005

Dear Kevin:

Thank you for your invitation to attend the resource agencies' review of mitigation for the Route 108 widening project, it is unfortunate we are unable to join you. However, we would like to emphasize our strong support for the proposed mitigation funding of the wetland restoration on the Powers property. This project is detailed in the planning report enclosed. NH Department of Transportation's financial assistance is crucial to the successful accomplishment of this undertaking. In 2004, the Natural Resource Conservation Service designated cost share funding for the Powers restoration through its Wetland Restoration Program for which we need to raise an estimated \$40,000 non-Federal match. Fish and Game has very limited in-house funding and currently we have not identified a partner other than DOT to assist with match.

This proposed wetland restoration has multiple ecological and public benefits. However, the primary goal is to provide habitat for waterfowl and turtle species, particularly Blanding's turtles (*Emydoidea blandingii*). We look forward to coordinating the amphibian portion of pre and post restoration wildlife monitoring with Kim Babbitt at the University of New Hampshire.

We look forward to the opportunity of partnering with you to support this multi-species habitat enhancement. In addition to the project planning report, enclosed is a copy of the topographic survey from which engineering plans for the water control structures are being developed. If you have any questions please feel free to contact me at (603) 778-0015 or rachel@greatbay.org.

Sincerely,

Rachel Stevens

Land Stewardship Coordinator
Great Bay National Estuarine Research Reserve
New Hampshire Fish and Game Department

Cc: Peter Wellenberger, Manager Great Bay NERR
Ed Robinson, Waterfowl Biologist

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MAY 17 2005

NH DEPARTMENT OF
TRANSPORTATION

Conserving New Hampshire's wildlife and their habitats since 1865.

EXHIBIT P



CAROL A. MURRAY, P.E.
COMMISSIONER

Durham-Newmarket
STP-TE-X-5133(009)
13080
Page 1

No Adverse Effect Memo

Pursuant to meetings and discussions on February 12 and September 11, 2003; June 10, 2004; and March 10, April 14, and May 12, 2005, and for the purpose of compliance with regulations of the National Historic Preservation Act and the Advisory Council on Historic Preservation's *Procedures for the Protection of Historic Properties* (36 CFR 800), the NH Division of Historical Resources (NHDHR) and the NH Division of the Federal Highway Administration (FHWA) have coordinated the identification and evaluation of historical and archaeological resources with plans to construct four-foot wide bicycle shoulders along NH Route 108 between the Oyster River Bridge in Durham and Dame Road and Sanborn Avenue in Newmarket, New Hampshire.

Based on a review pursuant to 36 CFR 800.4, we determined that the following properties, which are listed on, eligible for, or potentially eligible for the National Register of Historic Places, will be affected by this project:

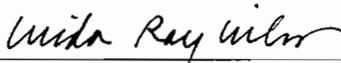
- Contributing properties to the Durham Historic District, listed on the National Register of Historic Places (parcels 52, 53, 55);
- Doe-Mooney-Dame-Stevens Farms Historic District, Durham, a National Register eligible district (parcels 27, 85, 30, 31, 84, 83, 32, 33, 82, 34, and 79);
- Extension to the Newmarket Industrial and Commercial Historic District, including 27 and 31 North Main Street (NWM0009 and NWM0008), contributing eligible properties (parcels 111, 110, 126);
- Harry Bassett House, 3 North Main St., Newmarket (NWM0004), an individually eligible property (parcel 99);
- Magusiak House, 18 North Main St., Newmarket (NWM0005), a potentially eligible property (parcel 2);
- 313 Newmarket Road, Durham (DUR0014), a potentially eligible property (parcel 95); and
- 7 North Main Street, Newmarket, a potentially eligible property (parcel 100).

Applying the criteria of effect at 36 CFR 800.5, because of the minimization of the project's effect through design and the reconstruction of affected stone walls along NH Route 108, we mutually agreed that the widening of the shoulders would not have an adverse effect on these properties. NHDOT agrees to complete the three remaining determinations of eligibility referred to as "potentially eligible" properties above and revise the Doe-Mooney-Dame-Stevens Farms Historic District to include historic property numbers DUR0011, DUR0012, and DUR0013 with their associated parcels (parcels 79, 34, and 82). It will also complete all necessary phases of archaeological investigations.

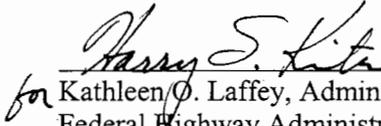
EXHIBIT Q

Durham-Newmarket
STP-TE-X-5133(009)
13080
Page 2

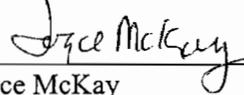
In accordance with the Advisory Council's regulations, we will continue to consult, as appropriate, as this project proceeds.



Linda Wilson, Deputy
State Historic Preservation Officer


for _____
Kathleen O. Laffey, Administrator
Federal Highway Administration

Concurred with by the NH Department of Transportation

Date: June 2, 2005 By: 

Joyce McKay
Cultural Resources Manager

c.c. NHDHR
FHWA
S:\PROJECTS\DESIGN\13080\Cultural\memo.doc

Kevin Nyhan

From: Peter Helm [phelm@osp.state.nh.us]
Sent: Thursday, June 06, 2002 9:47 AM
To: Knyhan@dot.state.nh.us
Subject: Durham-Newmarket 13080

I have reviewed your memo dated 5/31/02 received here on 6/4/02 concerning the proposed safety improvements along Route 108 in Durham and Newmarket.

Based on our review, there are no Land Conservation Investment Program parcels, local or state-held, in close proximity to this project. If you need more information, please let me know.

Pete Helm, Coordinator
NH Land Conservation Investment Program

State of New Hampshire
INTER-DEPARTMENT COMMUNICATION

To: Kevin T. Nyhan, Sr. Environmental Manager

CC:

From: ^{TU} Torene Tango-Lowy, LWCF Program Assistant
Dept. of Resources and Economic Development – Div. of Parks and Recreation
Office of Recreation Services

Date: June 28, 2002

Subject: Durham-Newmarket, 13080

This communication is in response to your memo dated May 31, 2002, regarding the safety improvement along a section of NH Route 108 in the towns of Durham and Newmarket. Upon review of the Land and Water Conservation Fund (LWCF) files, there are no Section 6(f) properties located within the proposed project location that concerns this office.

Unless changes to the proposed project occur, no further approval is required from this office. Feel free to contact me at 271-3556 should you have any questions.

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JUL 01 2002

**N.H. DEPARTMENT OF
TRANSPORTATION**

EXHIBIT S

TO: CHRIS *W. Butler* 5/22/05

J. Butler
copy to V. Chase (Row)
project file: 13080

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
INTER-OFFICE COMMUNICATION

DATE: May 10, 2005

FROM: David Chandler, Chief of Labor Compliance

FROM TO: Kevin T. Nyhan, Senior Environmental Manager, Bureau of Environment

RE: Environmental Justice Population Analysis, Project: Durham-Newmarket, STP-TE-X-5133(009), 13080

FILE:

The attached analysis and recommendations are provided pursuant to Title VI of the Civil Rights Act of 1964 and Executive Order 12898. The intent of these statutes is to ensure fair and full participation and the equal receipt of benefits under Federally-assisted programs. Your efforts in carrying out the recommendations stated herein will minimize the potential for disproportionate impact on protected groups (EJ Populations).

The table entitled "EJ Population Analysis" is a comparison of protected groups identified within the project and surrounding areas; this analysis should be used by project personnel to determine whether or not adverse impacts (if any) have a disproportionate affect on the identified EJ populations. Where disproportionate impacts exist, project personnel should seek to avoid, mitigate, or minimize impacts. Additional information regarding specific outreach measures where appropriate has been provided.

If you have questions regarding this analysis, please contact me @ 271-2467.

encls: EJ Population Analysis

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NH DEPARTMENT OF
TRANSPORTATION

**EJ Population Analysis for Project Durham-Newmarket,
STP-TE-X-5133(009), 13080**

STUDY AREA	AVG% Elderly Population	AVG % Minority Population	AVG % Low-income Population	AVG% Disabled Population
Impacted Area (US Census Tract #801, Block Groups 1 and 2	9.3%	.8%	.7%	12.4%
Surrounding Area	7.4%	4.9%	14.75%	13.7%
REMARKS: * The population percentage identified is meaningfully greater than the surrounding area and constitutes an EJ population. Characteristics of this particular study area indicate that targeted outreach efforts to solicit public participation should be taken.				

Impacted Area: The impacted area was defined by the population within Census Tract , Block Groups .

Surrounding Area: All Block Groups immediately adjacent to the impacted area.

EJ Population: A population of people protected under Title VI within the impacted area that is meaningfully greater than the surrounding population.

Special Considerations: This project constitutes an “alteration” in accordance with the ADAAG and Title II of the Americans with Disabilities Act. Accordingly, existing pedestrian paths, where they exist, within the project limits should be evaluated to ensure that minimum ADAAG technical requirements are met, to include curb ramps where pedestrian routes cross curbs; law specifies the modification of existing facilities (within the scope of work) to ensure compliance with minimum requirements. Consideration should also be given to the installation or retrofitting of accessible pedestrian signals at pedestrian crossings within the project area.

Outreach Recommendations: Subsidized Apartment complexes for the elderly have been located at the following addresses in the vicinity of the project area. Notice of public information meetings should be sent to these locations: Bagdad Wood, 38 Madbury Road, Durham, NH 03824-2037; Church Hill Apartments, Church Hill Road, Durham, NH 03824; Newmarket House, 9 Granite Street, Newmarket, NH 03857-1635.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Field Office
70 Commercial Street, Suite 300
Concord, New Hampshire 03301-5087

RE: Durham-Newmarket, STP-TE-X-5133(009), 13080

July 2, 2002

Kevin T. Nyhan
Department of Transportation
John O. Morton Building
1 Hazen Drive
P.O. Box 483
Concord, NH 03302-0483

Dear Mr. Nyhan:

This responds to your May 31, 2002 letter requesting information on the presence of federally-listed and proposed, endangered or threatened species in relation to the proposed safety improvements to be constructed along a section of NH Route 108 in the towns of Durham and Newmarket, New Hampshire. The proposed section of NH Route 108 is from the Oyster River Bridge in Durham to the intersection with Sanborn Avenue in Newmarket. Our comments are provided in accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

Based on information currently available to us, no federally-listed or proposed threatened or endangered species under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area. Preparation of a Biological Assessment or further consultation with us under Section 7 of the Endangered Species Act is not required. Should project plans change, or additional information on listed or proposed species becomes available, this determination may be reconsidered.

Thank you for your cooperation. Please contact me at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Philip A. Morrison
Fish and Wildlife Biologist
New England Field Office

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JUL 05 2002

**N.H. DEPARTMENT OF
TRANSPORTATION**



STATE OF NEW HAMPSHIRE
DEPARTMENT of RESOURCES and ECONOMIC DEVELOPMENT
DIVISION of FORESTS and LANDS
172 Pembroke Road P.O. Box 1856 Concord, New Hampshire 03302-1856

GEORGE M. BALD
Commissioner

June 10, 2002

603-271-2214
FAX: 603-271-6488
www.nhdfl.org

PHILIP A. BRYCE
Director

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JUN 12 2002

N.H. DEPARTMENT OF
TRANSPORTATION

Kevin T Nyhan
Bureau of Environment
Départment of Transportation

Dear Mr. Nyhan,

This letter is in response to your request for information on sensitive species and natural communities at a road improvements project on NH Route 108 in Durham and Newmarket, NH. I have searched our database for records near the project area identified in your letter of May 31, 2002. We currently have a record of one sensitive animal species (at two locations) and one sensitive plant in the vicinity of the project area: Blanding's turtle (*Emydoidea blandingii*) and water marigold (*Megalodonta beckii*). I have enclosed a summary of our records for these occurrences for your information. We also have a historical record of marsh horsetail (*Equisetum palustre*). Historical records are not of themselves a concern from the viewpoint of NH Natural Heritage. When we have other, current, records in the area, however, we include mention of historical records so that if a field survey is conducted the surveyor could be alert to the possibility that the species could be present. For the same reason, I am providing information on a current record of blunt-lobed woodsia (*Woodsia obtusa*). It is in a location that will clearly not be impacted, but there may be other undocumented plants on the side of the river near the work site.

The southern part of the work area is also within an area along the Lamprey River that is flagged for possible impacts on the state-endangered brook floater (*Alasmidonta varicosa*) mussel (the nearest documented population is ca. nine miles upstream of Moat Island).

Water Marigold is an aquatic species that is considered to be rare or uncommon in NH, with 4 occurrences reported in the last 20 years. Blunt-lobed woodsia is a fern state-listed as threatened, that typically grows on ledges and terraces. Marsh Horsetail is also state-listed as threatened, with 3 occurrences reported in the last 20 years. It occurs on river or streambanks, marshes, and wet meadows. Water marigold would be threatened by changes in water level or increased input of sediments and pollutants in stormwater runoff. The fern would be threatened by direct destruction of the plants. The horsetail would be threatened by changes in local hydrology.

In spite of the number of possibilities mentioned, we do not expect there to be any impacts from this project on the known populations. The aquatic plant would presumably not be affected, the fern is not likely to occur right next to the road, and the horsetail has not been recently documented in this vicinity. However, if significant widening of the road, or the operation of

Forest Protection (603) 271-2217
Forest Management (603) 271-3456



Land Management (603) 271-3456
Community Forestry (603) 271-3457

Natural Heritage Inventory (603) 271-3623

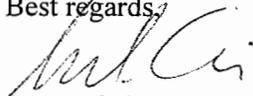
construction equipment, would affect wet areas on the roadside, a survey of such areas would help ensure that the species we have identified as possibly being present would not be affected.

The N.H. Fish and Game Department has legal authority over animals in New Hampshire. You need to contact John Kanter, NHF&G at (603) 271-2462 for interpretation and more information on Blanding's turtles and brook floaters relative to your proposed project.

Please note that our data can tell you only of *known* occurrences of rare species or natural communities in a given area. The Heritage database contains information gathered by qualified biologists and reported to our office. Since many areas have never been surveyed or have only received cursory inventories, other sensitive species may be present but not discovered or reported to our office. For some purposes, including legal requirements for state wetland permits, reports from the Natural Heritage Inventory database are sufficient. However, an on-site survey would provide better information on what species and communities are indeed present.

I hope this information is helpful to you. For more information on Heritage data please visit our website at www.dred.state.nh.us/forlands/formgt/nhiweb/ or call us at 271-3623.

Best regards,



Sara J. Cairns
Data Manager/Biologist, Natural Heritage Inventory

cc: John Kanter

New Hampshire Natural Heritage Inventory - Animal Record

Blanding's Turtle*Emydoidea blandingii***Legal Status**

Federal: Not listed
 State: Not listed

Conservation Status

Global: Apparently secure but with cause for concern
 State: Rare or uncommon

Description at this Location

Conservation Rank: Historical records only - current condition unknown.
 Comments on Rank

Detailed Description: 1966: 1 SPECIMEN SEEN BASKING.

General Area:

Location

Survey Site Name: MILL POND
 Conservation Land:

County: Strafford
 Town(s): Durham
 Size:

USGS quad(s): Dover West (4307028)
 Lat, Long: 430747N, 0705516W
 Elevation: 10'

Precision: Within (but not necessarily restricted to) the area indicated on the map. (Dot # 20)

Directions: DURHAM. MILL POND. OYSTER RIVER, JUST WEST OF RTE 108, DURHAM.

Dates documented

First observation: 1966

Last observation: 1966

New Hampshire Natural Heritage Inventory - Animal Record

Blanding's Turtle*Emydoidea blandingii***Legal Status**

Federal: Not listed
 State: Not listed

Conservation Status

Global: Apparently secure but with cause for concern
 State: Rare or uncommon

Description at this Location

Conservation Rank: Not ranked
 Comments on Rank

Detailed Description: 1992: Two young turtles observed, trapped in the fish ladder.

General Area: 1992: Lamprey River fish ladder, riverine habitat.

Comments: (Management comments): 1992: Accidental trappings and deaths of turtles in this fish ladder indicate a need for a look into the matter, with the hope of eliminating the risk to turtles.

Location

Survey Site Name: LAMPREY RIVER FISH LADDER
 Conservation Land:

County: Rockingham

USGS quad(s): Newmarket (4307018)

Town(s): Newmarket

Lat, Long: 430452N, 0705605W

Size:

Elevation: 20'

Precision: Within (but not necessarily restricted to) the area indicated on the map. (Dot # 157)

Directions: 2001: From Rte 108 in Newmarket, go just beyond Bay Road to the Lamprey River Dam with the Lamprey Fish Ladder.

Dates documented

First observation: 1992-10

Last observation: 1992-10

RAARP. 2001. NH Reptile and Amphibian Reporting Program (RAARP). Copies of hard-copy reporting forms up to 2001.

New Hampshire Natural Heritage Inventory - Plant Record

Water Marigold*Megalodonta beckii***Legal Status**

Federal: Not listed
State: Not listed

Conservation Status

Global: Apparently secure but with cause for concern
State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank

Detailed Description: ABUNDANT IN AN OLD CHANNEL. ASSOCIATED SPECIES INCLUDE UTRICULARIA SPP., WOLFFIA COLUMBIANA, NUPHAR VARIEGATA, AS WELL AS CLETHRA AND CEPHALANTHUS SHRUBS.

General Area: IN BACKWATER, CALM AREAS AROUND ISLAND.

Comments: DIFFICULT TO SPOT UNLESS IT IS PRODUCING THE EMERGENT LEAVES ASSOCIATED WITH FLOWERING (LATE SUMMER).

Location

Survey Site Name: MOAT ISLAND
Conservation Land:

County: Strafford
Town(s): Durham
Size:

USGS quad(s): Newmarket (4307018)
Lat, Long: 430608N, 0705554W
Elevation: 30'

Precision: Within (but not necessarily restricted to) the area indicated on the map. (Dot # 106)

Directions: ROUTE 108 NORTH FROM NEWMARKET. ISLAND IS CANOE ACCESSIBLE FROM WHERE ELLISON BROOK CROSSES UNDER ROUTE 108, AT DURHAM BOAT CLUB. OCCURENCE IS ON NORTH END OF ISLAND AND WESTERN SIDE OF ISLAND.

Dates documented

First observation: 1994-08-15 Last observation: 1994-08-15

Sperduto, D. & G.E. Crow. 1994. A Vegetation Assessment of the Lamprey River Corridor in Epping, Lee, Durham and Newmarket, New Hampshire. The National Park Service. Boston, MA. 94 pp.

New Hampshire Natural Heritage Inventory - Plant Record

Marsh Horsetail*Equisetum palustre***Legal Status**

Federal: Not listed
 State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
 State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Historical records only - current condition unknown.
 Comments on Rank

Detailed Description: 1973: HERBARIUM SPECIMEN (#55,628) OF CHAPMAN AT NHA.

General Area: FULL SUN, SANDY SOIL.

Comments: GENERALLY WITHOUT EVIDENCE OF FERTILE STEMS ON GROUND BENEATH.

Location

Survey Site Name: ORCHARD DRIVE
 Conservation Land:

County: Strafford USGS quad(s): Newmarket (4307018)
 Town(s): Durham Lat, Long: 430621N, 0705546W
 Size: Elevation: 30'

Precision: Known only to place name or USGS quad. (Dot # 8)

Directions: DURHAM. ALONG SIDE OF ORCHARD DRIVE.

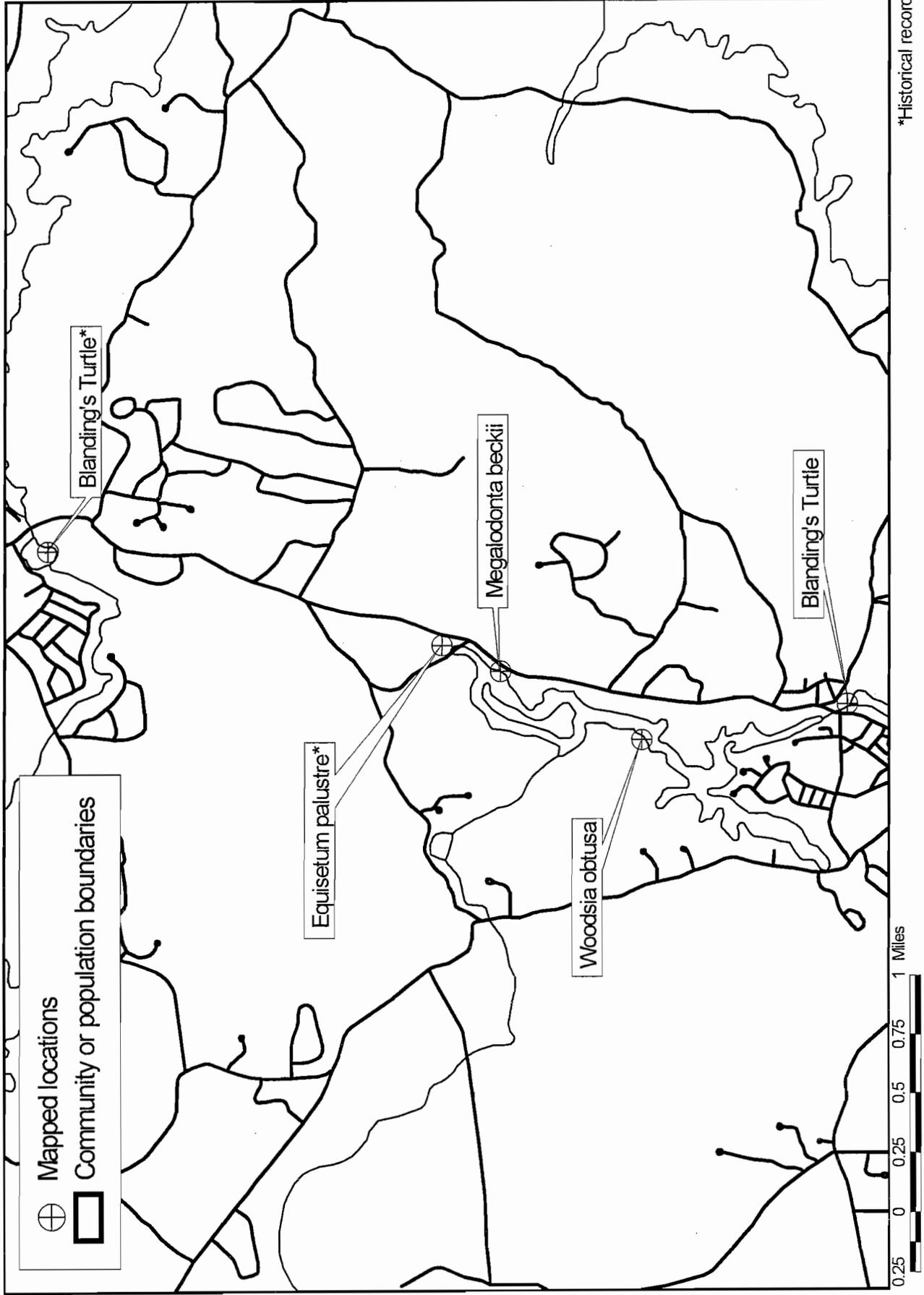
Dates documented

First observation: 1973 Last observation: 1973-05-23



Known locations of rare species and exemplary natural communities

Note: Mapped locations are not always exact. Occurrences that are not in the vicinity of the project are not shown.



Kevin N. copy

J.M.
KTN



Memo

11/14/02

To: Christopher M. Wasz, P.E.
Project Manager
NHDOT

From: George Musler
NFIP Coordinator

13000

Date: November 12, 2002

Subj: Durham-New Hampshire STP-TE-X-5133(009)

cc: Carol Ogilvie
George Hatch

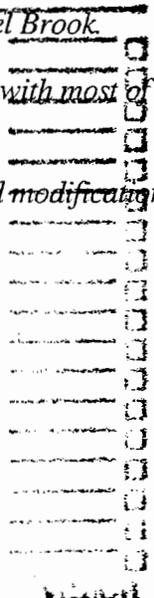
I will not be able to attend the November hearing on the subject so I offer the following for the record:

From Durham to Newmarket, the road, (Route 108), weaves in and out of the 100 year flood zones, and for the most part, the program proposed should not create a problem.

I will be remiss if I did not caution about the area where the road crosses Hamel Brook.

According to the Firm Map Panel 4, there is a regulatory flood way associated with most of the brook and that flood way is involved in the crossing.

When you develop a final plan for this project keep that in mind and try to avoid modifications which could cause a rise in the regulatory floodway level.



GTM/wjf

3/1/02
CAH

**STATE OF NEW HAMPSHIRE
EXECUTIVE DEPARTMENT**



JEANNE SHAHEEN
Governor

Office of Emergency Management
State Office Park South
107 Pleasant Street
Concord, New Hampshire 03301-3809
603-271-2231
1-800-852-3792
FAX 603-225-7341



DONALD P. BLISS
Acting Director

**STATE OF NEW HAMPSHIRE
INTER-DEPARTMENT COMMUNICATION**

TO:	Kevin T. Nyhan, DOT Senior Environmental Manager	DATE:	June 4, 2002
FROM:	George T. Musler State Flood Insurance Coordinator	OFFICE:	NHOEM
SUBJECT:	DURHAM-NEWMARKET STP-TE-X-5133 (009), 13080		

There are A zones and floodway designations associated with the Oyster and Lamprey River, however Route 108 does not appear to jeopardize the integrity of either Durham or Newmarket NFIP status.

As always, keep to local authorities abreast of what is going on.

GTM/pt

cc: Ms. Carol Ogilvie, NHOSP
Mr. George Hatch, FEMA, Region I
Mr. Todd Selig, Town Administrator, Durham, NH
Mr. Alphonse Dixon, Town Administrator, Newmarket, NH

RECEIVED
BUREAU OF ENVIRONMENT

JUN 10 2002

**N.H. DEPARTMENT OF
TRANSPORTATION**

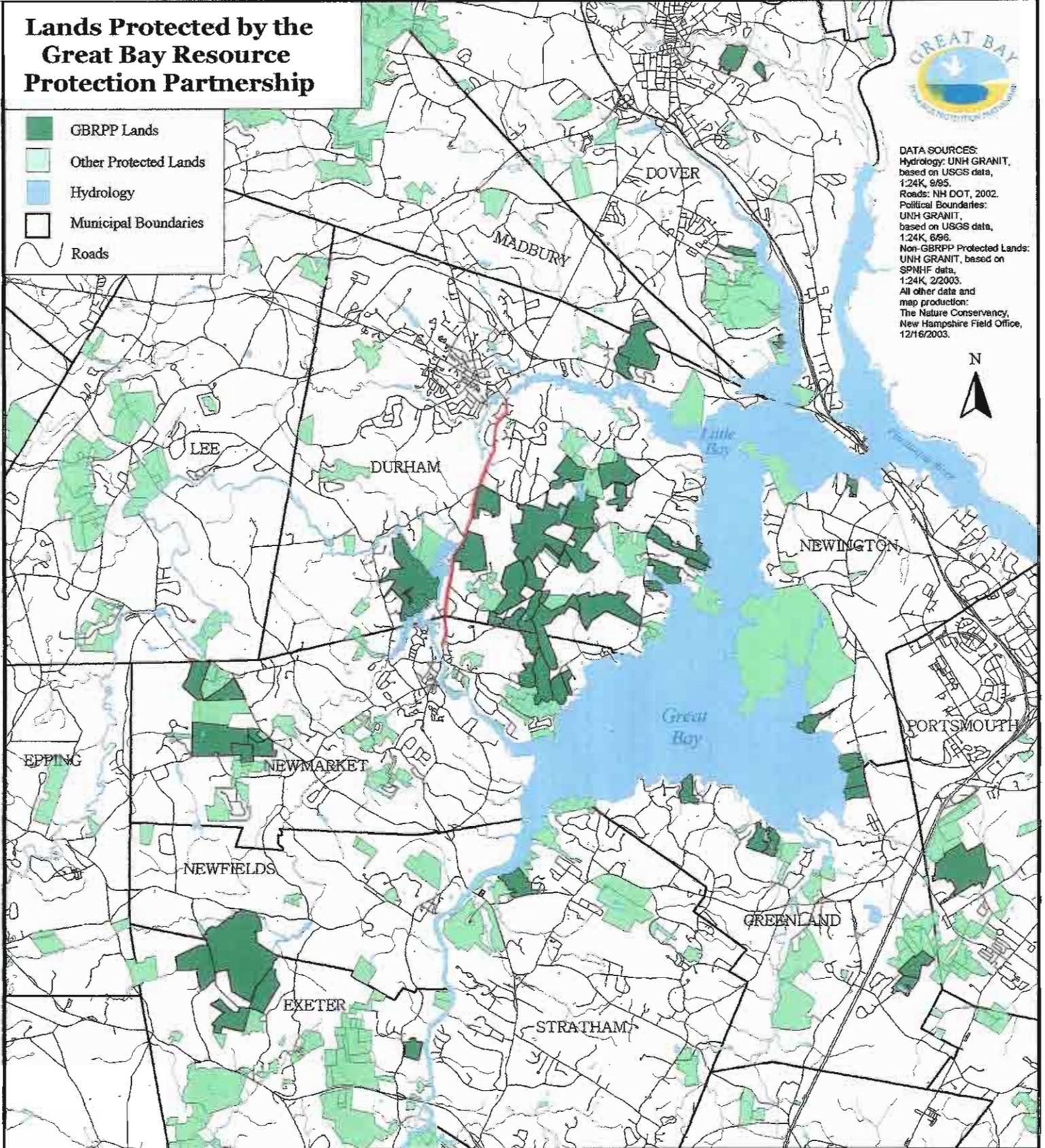
EXHIBIT W2

Lands Protected by the Great Bay Resource Protection Partnership



- GBRPP Lands
- Other Protected Lands
- Hydrology
- Municipal Boundaries
- Roads

DATA SOURCES:
 Hydrology: UNH GRANIT, based on USGS data, 1:24K, 9/95.
 Roads: NH DOT, 2002.
 Political Boundaries: UNH GRANIT, based on USGS data, 1:24K, 6/96.
 Non-GBRPP Protected Lands: UNH GRANIT, based on SPNHF data, 1:24K, 2/2003.
 All other data and map production: The Nature Conservancy, New Hampshire Field Office, 12/16/2003.



Project Area

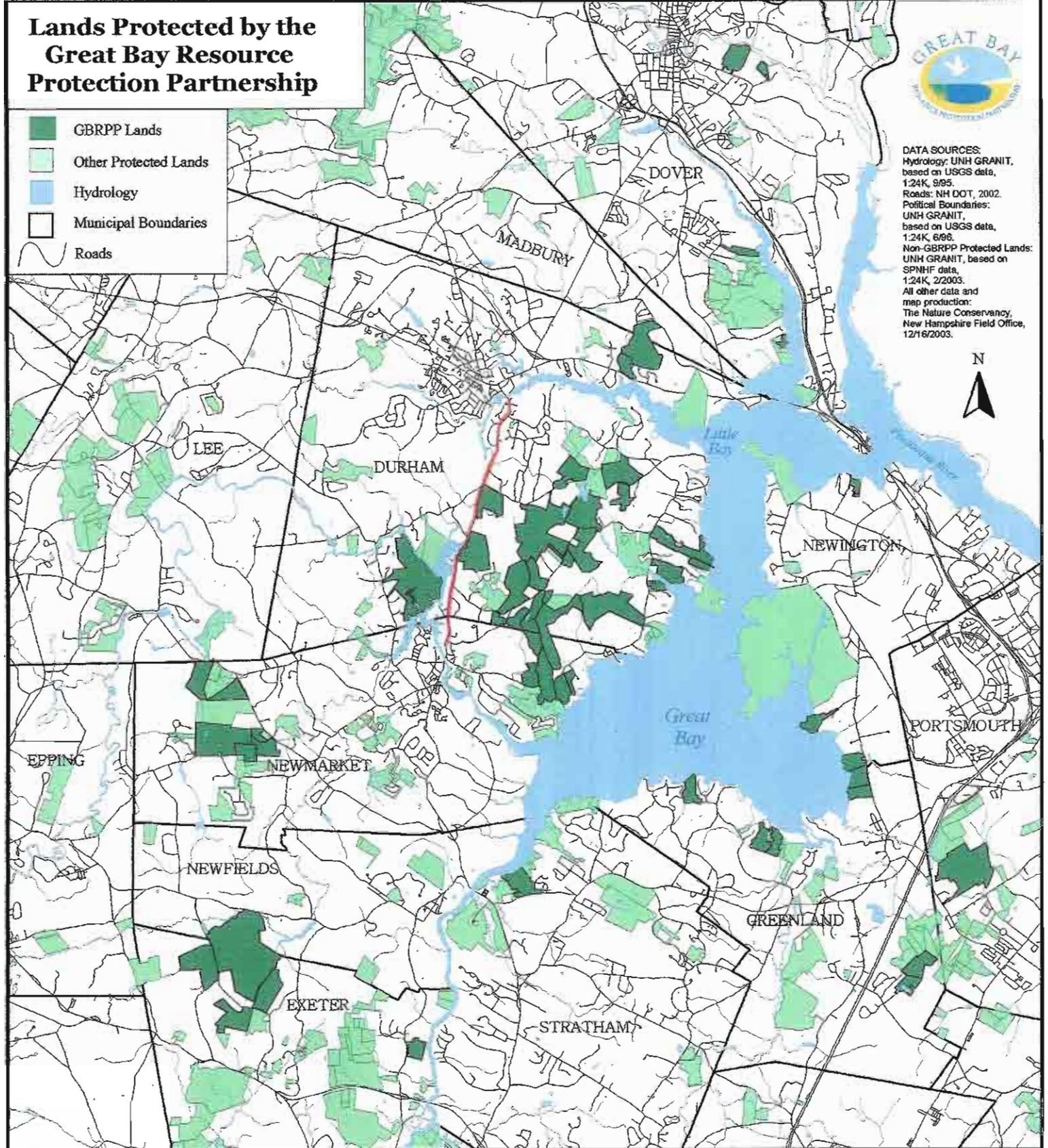
Protected Lands

Lands Protected by the Great Bay Resource Protection Partnership



- GBRPP Lands
- Other Protected Lands
- Hydrology
- Municipal Boundaries
- Roads

DATA SOURCES:
 Hydrology: UNH GRANIT, based on USGS data, 1:24K, 9/95.
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 All other data and map production: The Nature Conservancy, New Hampshire Field Office, 12/16/2003.



Project Area

Protected Lands

REPORT OF THE COMMISSIONER

DURHAM - NEWMARKET, STP-TE-X-5133(009), 13080

N.H. ROUTE 108

PUBLIC HEARING

July 21, 2005 -- OYSTER RIVER HIGH SCHOOL CAFETERIA -- 7:00 PM

The following decisions are the Department's resolution of issues as a result of the testimony presented at the July 21, 2005 Public Hearing and written testimony subsequently submitted for the Durham - Newmarket, STP-TE-X-5133(009), 13080, project described as:

Beginning in the Town of Durham at a point in the existing traveled way of NH Route 108, approximately one thousand (1,000') feet north of the Durham Point Road intersection and continuing south along the approximate existing alignment approximately three and five tenths (3.5) miles to a point approximately two hundred (200') feet south of the NH Route 108 intersection with Bay Road in the Town of Newmarket.

The project is intended to construct shoulders along NH Route 108 to improve safety for motorists, pedestrians and bicyclists. Additional safety improvements will include adding sidewalks along both sides of NH Route 108 in the Town of Newmarket, reconfiguring the Bennett Road and Durham Point Road intersections, as well as adding sidewalks along Durham Point Road and NH Route 108 north of Durham Point Road. (All sidewalk construction is contingent upon signed maintenance agreements with the Towns.)

1. Mr. Todd Selig, Durham Town Administrator, noted that the Durham Town Council supports the overall project to construct shoulders along NH 108 and improve safety.

Mr. John Krause, Durham Town Council, commended the Department on the excellent effort expended to accommodate citizen input and expressed support for the project, particularly the improvements proposed at the Durham Point Road intersection.

Ms. Cynthia Copeland, Executive Director Strafford Regional Planning Commission, expressed support for the addition of the 4' bike shoulders along NH 108 noting the NH 108 corridor serves as an essential link in the regional bike network, and provides a direct connection between the residential areas of Newmarket and the University of New Hampshire (UNH), the area's largest employer. She also noted that the corridor is a major commuting route for UNH students and staff, and that the project is consistent with goals and objectives of the Seacoast MPO Long Range Transportation Plan, completing a significant portion of the Great Bay Bicycle Loop as identified in the plan.

Mr. Michael Hoffman, 300 Durham Point Road, Durham; Ms. Diane Freedman, 28 Laurel Lane, Durham; Mr. Richard Lord, 85 Bennett Road, Durham; Mr. Don Brautigam, 122 Packers Falls Road, Durham; Mr. Scott Hovey, 41 Canney Road, Durham; Ms. Virginia Stuart, 3 Falls Way, Durham; Ms. Beth Olshansky, 122 Packers Falls Road, Durham; Mr. Julian Smith, 246 Packers Falls Road, Durham; Ms. Nancy Pagnotta, 2 Simons Lane, Durham; Ms. Marie Polk, 47 Newmarket Road, Durham expressed support for the addition of bike shoulders along NH 108, noting the improved safety for bicycles and motorists traveling along the corridor.

EXHIBIT Y

Response: The Department acknowledges and appreciates the communities' support and will progress the project as presented at the Public Hearing subject to the modifications contained herein.

2. Mr. Todd Selig, Durham Town Administrator, noted that the Durham Town Council has had extensive discussions concerning the Bennett Road Intersection following the receipt of a petition, signed by 183 individuals, which objected to the alterations to the Bennett Road intersection as proposed at the Public Hearing. Mr. Selig further noted that the Town Council, on August 15, 2005, voted to rescind its previous support of the proposed improvements at Bennett Road and encouraged the Department to further develop Option 3 as a viable alternative for the Bennett Road intersection. Option 3 was presented to the Town at a Public Informational meeting in 2004 and includes a modest alteration to Bennett Road at its intersection with NH 108 with the addition of a small traffic island to help delineate the intersection lanes. Lastly, Mr. Selig encouraged Department's representatives meet with Town staff to further discuss Option 3, when appropriate drawings are completed.

A petition signed by 183 individuals expressed strong opposition to the proposed alterations at the Bennett Road intersection particularly noting that Bennett Road is a designated scenic road by a Durham town ordinance and is afforded protection under State RSA 231:157 and RSA 231:158. Further, the petition noted that the layout proposed at the Public Hearing would significantly alter the character of the entrance of Bennett Road, require extensive tree cutting, and diminish the natural beauty and historic qualities of the present entrance to the scenic road.

Representative Dennis Abbott, Ms. Diane Freedman, 28 Laurel Lane, Durham; Ms. Monica Smith, 246 Packers Falls Road, Durham; Mr. Henry Smith, 28 Woodman Road, Durham; Mr. Scott Hovey, 41 Canney Road, Durham; Mr. Julian Smith, 246 Packers Falls Road, Durham; Mr. Roland Beaudet, (parcel 31); objected to the proposed improvements to the Bennett Road intersection noting that the present configuration works well and allows vehicles and bicyclists making right turns on Bennett Road to efficiently exit from NH 108 up the steep grade without having to stop on the highway. They noted the majority of the drivers utilizing the intersection are frequent users familiar with the deficient crest, steep slope, and quick descent to the intersection. Further, they noted that the majority of motorists using Bennett Road travel to and from Durham diminishing the need to re-align the intersection to a 90-degree crossing. Lastly, re-aligning the intersection to a 90-degree crossing would make winter travel up the steep grade more difficult. They suggested improved signing be added to alert motorists of the deficient crest on Bennett Road. Mr. Henry Smith also requested NH 108 be widened along its southern approach to the Bennett Road intersection to allow through traffic to avoid queued vehicles waiting to make a left-turn onto Longmarsh Road.

Mr. Richard Lord, 85 Bennett Road, Durham; Mr. & Mrs. Drapeau, 4 Sullivan Falls, Durham; Ms. Virginia Stuart, 3 Falls Way, Durham; Ms. Beth Olshansky, 122 Packers Falls Road, Durham; Mr. Don Brautigam, 122 Packers Falls Road, Durham; objected to the proposed improvements at Bennett Road, noting that Bennett Road is a designated scenic road protected by state law and local ordinances. They requested that any improvements be made within the present alignment of the road to address the safety concerns while preserving the aesthetic and historic nature of the road.

Ms. Cynthia Copeland, Executive Director Strafford Regional Planning Commission; noted that the existing configuration of Bennett Road and its intersection with NH 108 is deficient and in need of corrective action. Ms. Copeland encouraged the Department to continue to closely work with the Town to develop a design that is safe, efficient, and sensitive to the character of the area. She suggested that if a compromised design cannot be developed, that the Bennett Road intersection improvements be progressed as part of a separate project to avoid undue delays to the development of the rest of the project.

Mr. John Krause, Durham Town Council; Mr. Richard Kelley, Chairman of the Durham Planning Board; Mr. David LeGault, 11 North Main Street, Newmarket; Ms. Nancy Pagnotta, 2 Simons Lane, Durham; expressed support for the proposed improvements at the Bennett Road intersection.

Response: At the request of the Durham Town Council, in response to the large number of Durham residents objecting to the improvements at the Bennett Road intersection as proposed at the Public Hearing, and following additional meetings and discussions with Town Officials, the Department proposes to construct minor improvements to the Bennett Road intersection. Work on Bennett Road is proposed to be limited to the removal of a small amount of pavement in the northwestern corner of the intersection to reduce the expanse of pavement that presently exists. The existing pavement edge in the southwestern corner is proposed to be maintained. Ten-foot shoulder areas on NH 108 are proposed in the immediate vicinity of the intersection to allow vehicles to decelerate in the paved shoulder when approaching the intersection while making a right turn and to utilize the paved shoulder to bypass queues vehicles in the travel way waiting to make a left turn onto Longmarsh Road. These improvements at the Bennett Road intersection are identified on a plan titled "Minor Corner radius Modification Option 3B" that was endorsed by the Durham Town Council at a meeting on June 4, 2007.

The aforementioned improvements essentially maintain the present configuration of Bennett Road; eliminate a majority of the tree clearing on Bennett Road that was required under the previous proposal, and considerably reduce the impacts to private property in vicinity of the intersection.

The Department will coordinate with the Town of Durham to add improved signing on Bennett Road, in order to provide advance warning of the deficient crest vertical curve and limited visibility approaching the stop condition at the intersection.

3. Mr. John Krause, Durham Town Council, expressed support for the improvements proposed at the Durham Point Road intersection.

Representative Emma Rous expressed thanks for the sensitivity exhibited by the Department to address historic and environmental concerns, particularly at the Durham Point Road intersection.

Ms. Diane Freedman, 28 Laurel Lane, Durham, suggested the current two-way configuration at both of the Durham Point Road entrances be maintained. She recommended a left-turn lane be added on NH 108 to allow vehicles on NH 108 to by-pass vehicles making a left-turn onto Durham Point Road. Ms. Freedman suggested that a bicycle/pedestrian/jogging lane is preferable to sidewalks along NH 108 and Durham Point Road since sidewalks are typically more difficult to maintain in the winter and are of lesser priority than the roadway, and given the narrow rural roadway, an adjoining lane offers greater flexibility for recreational use than a raised sidewalk.

Mr. Gary Valentine, 17 Deer Meadow Road, Durham, suggested the sight distance be reviewed for vehicles heading south on NH 108 and desiring to make a left-turn onto Durham Point Road. He noted that the existing visibility is somewhat hindered by the road's curvature.

Mr. David LeGault, 11 North Main Street, Newmarket, suggested the new sidewalk proposed along the southerly side of Durham Point Road would be better situated along the northerly side of Durham Point Road with a pedestrian crossing located mid-block on Durham Point Road at the top of the road's crest. He felt locating the pedestrian crossing away from NH 108 would increase safety for pedestrians.

Response: The Department believes the proposed layout for Durham Point Road as depicted at the Public Hearing improves safety for all users (i.e., motorists, bicyclists, pedestrians, joggers) of the Durham Point Road intersection area, while minimizing impacts to the Durham Historic District. Maintaining the existing two-way configuration on the southern leg of the intersection, as suggested by Ms. Freedman, is problematic and unsafe due to the severely deficient width (approximately 14' at its present narrowest point) for two-way travel, and due to the steep downgrade and severely skewed junction for vehicles exiting the southern leg of the intersection onto NH 108. Improving the geometry at that location and widening the roadway would result in unacceptable impacts to private property and the historic district. Maintaining the existing width and configuration for a one-way condition (from NH 108 onto the southern leg) allows the historic character of the area to be preserved and eliminates the safety concerns associated with the deficient width and intersection geometry.

The visibility along NH 108 will be improved for vehicles desiring to make a left onto Durham Point Road as some of the existing vegetation along the inside of the curve will be cut back to accommodate the proposed widening for the shoulder construction and associated roadway embankment work.

The proposed sidewalk provides good, safe connectivity between the existing sidewalks along the easterly side of NH 108 and the southerly side of Durham Point Road. A pedestrian crossing is proposed at the intersection of the two roads, in a location that is commonly expected by motorists and has appropriate sight distance. Introducing a sidewalk along the northerly side of Durham Point Road, as suggested, would result in considerably more impacts to the area and would necessitate a mid-block pedestrian crossing in a location with poor visibility that would be unexpected and less safe.

4. Mr. Richard Kelley and Ms. Julie Pinkham Kelley, 47 Stagecoach Road, Durham; Mr. David Glista, 28 Ross Road, Durham, requested the Department extend the sidewalk proposed along the easterly side of NH 108 from Simons Lane in Newmarket Stagecoach Road in Durham. They noted this (approximately 2000') extension of sidewalk would serve a large residential area of 65 to 70 homes, providing the opportunity for safe pedestrian access for the neighborhood to downtown Newmarket.

Response: The Department has reviewed the area and is amenable to the extension of the sidewalk from Simons Lane, which is located at the Durham / Newmarket town line, to Stagecoach Road in Durham assuming the following stipulations: the additional easements and/or property rights necessary for the sidewalk construction can be secured from the property owners in an amicable manner without the benefit of eminent domain; the additional impacts to wetlands (estimated to be 0.1 acre) will be permitted; and the Town of Durham agrees to accept maintenance responsibilities (both winter and summer maintenance) for the sidewalk in accordance with its accepted policies and practices as mandated in RSA 231:92-a. A municipal agreement between the Town and the Department documenting maintenance responsibilities will need to be executed prior to this sidewalk (and the other sidewalks) being incorporated into the project.

5. Ms. Marguerite Mathews and Mr. Robert Tucker, 288 Newmarket Road, Durham (parcel #19), expressed the following concerns relative to the project's potential impact to their home, which is presently shielded by a ledge outcrop intermixed with trees and vegetation:
 - a) They requested the removal of the rock outcrop and existing vegetation along their property's frontage be minimized to the greatest extent possible.
 - b) They questioned how the temporary construction easement would be utilized during construction and how the access to their property would be affected.
 - c) They expressed concern that the ledge removal operation (i.e. blasting) would potentially damage their home's foundation (which consists of dry-laid

fieldstone), their septic system, and their three-year old well. They requested construction activities be avoided that may potentially damage their foundation, well, and septic system.

- d) They requested that every effort be made to limit the removal of trees that will further expose their home to the highway, including the area of the proposed drainage easement located on the adjacent property to the north.
- e) They questioned how the efforts to minimize tree and ledge removal would be coordinated with them during construction, and how long the work along their property frontage would take.
- f) They requested a pre-construction and post-construction survey of the vegetative buffer, foundation, and well be completed with copies of the inspection reports provided to them. They questioned how their interests would be protected if construction related damage occurs.
- g) They questioned whether a pre-construction and post-construction valuation of their property will be completed to assess the project's impact on their property.
- h) They suggested consideration be given to lower the posted speed limit of NH 108 from 45 mph in light of the future increased bike and pedestrian activity.

Response: The following are the Department's responses to the expressed concerns and questions.

- a) The Department has refined the proposed work along the property's frontage to limit the impact to the ledge outcrop and surrounding trees, and will continue to try to minimize impacts along the property's frontage during the project's final design. Removal of the ledge by mechanical means, as opposed to drilling and blasting, will be considered in the interest of minimizing tree clearing.
- b) The temporary construction easement is required for the construction of a drainage pipe beneath the driveway, and to provide access for ledge removal construction equipment to the top of the ledge, if deemed necessary. The depiction of the temporary construction easement crossing the property's driveway will not preclude the owners from accessing the property; access will be specified to be maintained at all times. During the final design stage of the project, drainage and ledge removal will be reviewed and the limits of the easement minimized to the greatest extent reasonable.
- c) As an element of the ledge removal operation, the Department proposes to implement a vibration-monitoring plan, which will monitor ledge removal activities and set vibration limits to minimize vibrations resulting from these construction activities in the area. In addition, a pre- and post-construction survey of the foundation, septic system, and well will be conducted as part of the project.
- d) The Department will limit, to the extent reasonable and practical, the amount of tree removal, which will potentially expose the house to the highway.
- e) During the final design stage of the project, detailed plans will be developed depicting the limits of the proposed tree clearing, slope work, and necessary easements. These plans will form a basis for appraising the impacts to the property and negotiating the acquisition of easements required to complete the work. During construction, a representative of the Department will oversee the work to ensure construction is progressed according to the plans and specifications. This on-site Contract Administrator will also coordinate various aspects of the construction as it affects private properties and property frontages with the respective property owners along the corridor.
- f) As noted in item (c), a pre- and post-construction survey of the foundation, septic system, and well will be conducted. A copy of the report will be provided to the owners. The contract documents will direct that photos and/or video of the property frontage be taken prior to work along the frontage commencing with copies provided to the owners. Extreme care will be exercised to avoid additional impact and/or damage to the property over and above that shown on the plans.
- g) An appraisal of the land impacted based on its highest and best use in accordance with State and Federal law will be completed. The appraisal will consider the before (existing) and after condition in determining fair market value for the property impacts.
- h) Upon completion of the project's construction, the Department's District Office will review the area to determine whether any adjustments to the posted speed

limit are necessary given the geometry of the road, character of the area, and anticipated increased pedestrian and bicycle activity. Appropriate speed limit signs will be provided accordingly.

5. Mr. Michael Hoffman, 300 Durham Point Road, Durham, expressed concern that historic stonewalls along NH 108 are being destroyed by "clear-space treatments". He noted one stonewall in particular, which is located along the easterly side of NH 108, north of the Durham Point Road intersection, is being threatened by a recently installed drainage swale that is undermining the wall's foundation. He suggested the embankment be stabilized with riprap.

Response: As a project commitment to mitigate the impacts of the project on historic stonewalls, stonewalls that are directly impacted by construction will be reconstructed in kind where feasible, practical, and constructible. The reconstructed walls are intended to be located at the right-of-way boundary or at a location determined to be most appropriate. The stonewall located along the easterly side of NH 108 north of the Durham Point Road intersection will be reviewed during the final design stage of the project and appropriate measures will be incorporated into the design to stabilize the area and inhibit further erosion of the wall's foundation.

6. Mr. Paul Dubois and Ms. Sharon Griffin, Trustees for the Mill Pond Trust (parcel #55), requested the Department minimize the land acquisitions and easements affecting the property to the greatest extent possible. They requested the stonewall, if impacted, be re-constructed as close as reasonably possible to its present configuration and appearance, since the property is an integral part of the Durham Historic District.

Tom Chamberlain, representing the Rockingham Land Trust (parcels 53 & 55), noted in December 2004, the Rockingham Land Trust with the Town of Durham secured a conservation easement on 11 to 12 acres of land at the Mill Pond Center. F expressed support for the project, but urged the Department minimize the visual impact of the project on the fields and the Mill Pond Center.

Representative Emma Rous noted that she lived on Durham Point Road and inquired as to the availability of plans for the Durham Point Road intersection and Mill Pond driveway area noting drainage related concerns by the Mill Pond Center. She also questioned the disposition of the stonewall along the Mill Pond Center property, which presently exists in close proximity to NH 108.

Response: The Department has investigated several different alternatives to improve safety and congestion in the area of the Durham Point Road intersection. The alternative presented at the Public Hearing best balances safety and congestion in the area while minimizing impacts to private property and the historic district to the greatest extent practicable. Due to the close proximity of the stonewall to the existing road, the stonewall along the Mill Pond Center frontage will be impacted by the proposed construction and is proposed to be re-built in kind along the proposed right-of-way boundary (which will be located approximately 12' off the edge of the new pavement).

In addition to the right-of-way acquisition, easements will need to be acquired to undertake any work (i.e., roadside slope construction, drainage, etc.) beyond the proposed right-of-way boundary. The Department will strive to further minimize the extent of these easements during the final design phase of the project.

A half-sized plan of the Public Hearing Plan was forwarded to each Town following the Public Hearing for their use and records. As additional and more detailed plans of the intersection area and the proposed drainage work are developed, coordination with the Mill Pond Center will be undertaken.

7. Mr. Michael Schidlovsky, 100 Newmarket Road, Durham (parcel #37), requested that he first approve and have a clear agreement on the work proposed on his property, particularly concerning any stonewall alterations, tree removal, tree branch cutting, driveway reconfiguration, and mailbox relocation. Further, he requested that any alterations to the topography of his property be left in a mowable condition.

Response: Prior to commencing with any work on private property, the Department will develop detailed right-of-way plans depicting the limits and nature of the proposed work, along with the easements necessary to progress the work. These plans will be discussed with Mr. Schidlovsky and used to negotiate the terms and conditions of the documents needed, and any special circumstances determined to be appropriate for incorporation into the proposed work.

During the final design process, the Department will strive to further minimize the extent of stonewall alteration, tree removal, tree branch cutting, and driveway reconfiguration.

8. Mr. David LeGault, 11 North Main Street, Newmarket (parcel #102), requested the Department afford him the opportunity to connect his property's sump pump into the proposed highway drainage system. He noted that a low area exists between his property and the adjacent property to the north, which drains to the shoulder area of the road. He suggested this runoff be directed into the proposed drainage system for the project.

Mr. LeGault suggested the Department coordinate with the Town of Newmarket to replace the aging water mains that exist along NH 108 as part of the project.

Response: Due to liability concerns and as a matter of practice, the Department discourages the connection of private lines to the highway's drainage system.

During the project's final design phase, the Department will closely review the area between Mr. LeGault's property and the adjacent property to the north to address drainage issues along the property frontages.

During the project's final design phase, the Department will coordinate with the Town of Newmarket to identify any potential conflicts concerning the proposed work and the existing water line and whether the Town is interested in replacing the existing facility as a non-participating element of the project.

9. Ms. Cynthia Copeland, Executive Director Strafford Regional Planning Commission; requested the Department modify the alignment of NH 108 to avoid impacts to three mature oak trees that are situated along the east side of the highway in vicinity of the Durham Boat Company.

Response: As part of the project's development, the Department investigated an alternative alignment, which avoided impacting the three trees. This alternative alignment involved shifting the centerline to the west several feet, which resulted in severe impacts to numerous trees located along the opposite side of the road, and greater overall impacts (i.e. fill slopes, trees, etc.) to the area.

During the final design phase of the project, the Department will more closely evaluate the proximity of the trees to the new edge of pavement and determine whether any of the three mature trees can be saved without adversely affecting safety.

10. Mr. John L. Ahlgren, Chairman – Newmarket Community Development Corporation, P.O. Box 313, Newmarket (parcels #106 & #107), requested the drainage from NH

108, which is currently directed to a drainage ditch between parcels 106 and 107, be collected in a subsurface drainage system that is tied into the existing system on Dame Road. He stated that the Newmarket Community Development Corporation does not want runoff from NH 108 directed onto their properties, when runoff could be diverted to the existing catch basins. Mr. Ahlgren also requested curb cuts at driveway entrances be provided to both properties from NH 108.

Response: The Department will closely review the drainage conditions in vicinity of parcels 106 and 107 and design the drainage with the intent that runoff from NH 108 is not directed to the properties. The current proposal, as shown at the Public Hearing, depicts new curbing and sidewalk along the parcel frontages. This curbing will help contain the runoff from the highway and collect it in a subsurface system.

An existing curb cut or driveway, which is situated on parcel 107, will be maintained as part of the project. Regarding a new curb cut to parcel 106 from NH 108 (where no driveway presently exists), the owner will need to contact the District Six Office, which is delegated the responsibility for the issuance of driveway permits to the state highway system, and submit an application for a driveway permit. Should the owner obtain the necessary approvals and permits, the Department will incorporate the curb cut layout into the project.

11. Mr. James Dreher, GM - Durham Boat Company, Inc., 220 Newmarket Road, Durham (parcel #28), expressed concern with the curbing proposed to delineate access along his property frontage, noting that the curbing would restrict access into and out of his property. He stated that if the curbing is constructed, a loading dock at the north end of the property would not be accessible to deliveries by large trucks; boat trailers that need unfettered access would be impeded; parking would be restricted; access out of the property hindered; snow-plowing would be more difficult; and the historic use of the property by semi-tractor trailer trucks and other large trucks would be made more difficult.

Mr. Dreher noted concern with the locations of the proposed driveways and potential visibility problems for vehicles exiting his property. He requested the Department visit the site to better understand the ramifications of the proposed curbing.

Response: Presently, approximately 240 feet of open pavement exists along the property's frontage, along with an unprotected utility pole that is situated in the middle of the paved frontage. Vehicles entering or the leaving the property have uncontrolled access, which can result in haphazard and unsafe movements. Managing access to a relatively high-volume state highway such as NH 108 by defining discrete driveway locations will improve safety for the motorists accessing the property and the traveling public on NH 108. Departmental policy and practice typically allows a maximum of two driveways, each with a maximum width of 50', to single parcels with 500 feet of frontage or less.

At the request of the owner, a site visit was conducted on September 2nd, 2005, following the Public Hearing. Sight distance exiting the new drive locations, the location of the proposed curbing, and site maneuverability was reviewed with the owners. It was noted that the Department believes uninhibited access to and from the site is problematic.

Although the proposed curbing is located completely within the existing right-of-way, in order to allow slightly more room for on-site maneuverability, the width of proposed curbed area shown on the Public Hearing plan will be reduced from approximately 8 feet to 6 feet in width. Access to the gated area at the property's southern end and the loading dock at the property's northern end will not be precluded with the proposed driveway layout. Each driveway will be of sufficient width (50 feet) to allow reasonable entry and exit at each location. Deliveries by trucks and boat trailers are anticipated to be accomplished in a safer manner since turning and backing movements will be made within the property's confines, and

opposed to the existing situation, where portions of the highway are utilized. Although the paved lot is not striped, it appears that some parking that currently is "head-in parking" will need to be altered to "parallel parking" to allow room for vehicular circulation within the site.

Sight distance at each of the proposed driveway locations has been reviewed. The southern driveway will have good visibility for vehicles exiting that location with sight distances of better than 550' (good for a 50 mph design speed) in both directions. The northern drive will have good visibility in the southern direction (better than 550') and moderate visibility in the northern direction (approximately 400') once some trimming of the vegetation within the state's right-of-way is accomplished as part of the project. The owner is advised to encourage vehicles exiting the property to utilize the southern driveway.

12. Representative Karl Gilbert, Newmarket suggested the intersection corner at the Bay Road / NH 108 intersection be softened to improve safety for the right turn movements from Bay Road onto NH 108. Representative Gilbert noted that it is difficult today for vehicles queued in the right turn lane on Bay Road to enter onto NH 108 without crossing the highway's centerline. With the addition of a sidewalk at that location, he questioned whether the right-turn movements would be more difficult. He suggested the intersection corner be rounded to allow vehicles to stay within their respective lanes.

Representative Dennis Abbott, Newmarket suggested NH 108 be widened to provide a left-turn lane for southbound vehicles on NH 108 waiting to turn left onto Bay Road. The protected left-turn lane would help to improve congestion at the intersection location.

Response: The Department has reviewed the intersection corner at Bay Road and will modify the corner to allow Single-Unit trucks (SU-Design) to make a right-turn from Bay Road onto NH 108 within the respective lanes, without adversely impacting the park appurtenances, such as the cannon and monument. The utility pole at the intersection corner, which houses several major utility lines, will need to be relocated to accomplished the work.

Due to the right-of-way constraints, particularly the close proximity of the residences along NH 108 opposite Bay Road, the widening of NH 108 to accommodate a left turn lane for vehicles desiring to make left turns onto Bay Road would impose severe and unacceptable impacts on private property. As such, the introduction of a left turn lane is felt to be beyond the scope of this project and not proposed.

13. Mr. David Cataneo and Ms. Kathy Cataneo, 97 Newmarket Road, Durham (parcel #80), suggested that a sharp curve located to the north of their property be softened to improve safety. They noted that wintertime travel is especially dangerous due to the sharp curve with vehicles losing control during a snowstorm. They suggested the curve be softened for safety reasons with an added benefit of shifting the road away from their home, which was built in 1720. Also, they suggested the superelevation in the area of the curve be reviewed to ensure an appropriate cross-slope is provided.

Response: The Department has re-reviewed the crash data and geometric conditions in the area. The existing horizontal curve has a radius of 550 feet, which when properly superelevated is adequate for a design speed of 40 mph. The posted speed is 35 mph. The crest vertical curve, which is situated just north of the relatively sharp curve, represents more of a potential concern in the area due to the limited visibility (adequate for approximately 35 mph) offered to motorists traveling either north or south. To improve this condition, a significant alteration to the road's profile along with a major shift in the centerline of the roadway would be required, resulting in a major reconstruction of approximately 750 feet of NH 108 along with significant impacts to private property. This type of reconstruction is felt to be beyond the scope

of the project and, based on prior public meetings, would not be acceptable or supported by the community. The proposed addition of 4-foot paved shoulders will provide some added safety benefit in terms of reducing the potential for run-off-the-road type of accidents. During the final design stage of the project, the area will be reviewed relative to the superelevation provided.

14. Mr. Wesley Smith, 73 Newmarket Road, Durham (parcel #74), questioned the intent of the drainage easement proposed on his property, noting the potential for contamination of the property's well given its location in close proximity to the proposed easement. He also questioned whether a dust abatement program would be implemented during the project's construction to control dust.

Response: The drainage easement proposed on Mr. Smith's property is intended for the purposes of constructing and maintaining a new drainage structure envisioned to collect runoff from a roadside ditch along the easterly side of the road and convey it beneath the highway to the opposite side. During the final design stage of the project, the Department will review the drainage needs in the area and the extent of the proposed drainage easement, and will minimize the size of the easement to the extent practicable.

Although the drainage collected in the area of the drainage easement is not envisioned to adversely affect the well, the Department proposes to initiate a well testing and monitoring program to gather pre- and post-construction data on the existing well. Should the well be adversely affected by the project, the Department will take corrective action.

During construction, some levels of dust and inconvenience will be evident in the project area. The Department's contractor will be required to control dust and keep it within reasonable limits as established in the Department's specifications.

15. Ms. Marie Polk, 47 Newmarket Road, Durham (parcel #65), expressed concern in the high levels of noise generated by large trucks traveling through the historic district, particularly the noise made when large trucks traveling northbound downshift on NH 108 as they approach Durham Point Road. Ms. Polk requested consideration be made for measures to slow the trucks prior to the downgrade and to reduce truck noise that detracts from the historic charm of the area.

Ms. Polk also advocated that improved signing and enforcement of the posted speed limit be provided to improve safety along NH 108 in the area of the historic district.

Response: The area just south of Bennett Road through the Durham Historic District is currently down posted to a 35 mph speed limit, which should provide adequate distance for trucks to slow down as they travel through the historic area.

During the final design stage of the project, signing along the entire corridor will be reviewed and an appropriate level of signing, in accordance with the Manual of Uniform Traffic Control Devices (MUTCD), will be provided. Enforcement of the posted speed limit is the responsibility of the police departments in accordance with their rules and regulations.

16. Ms. Nancy Pagnotta, 2 Simons Lane, Durham (parcel #93), expressed concern that if blasting is utilized to remove the ledge along her property frontage, that the blasting operation may adversely impact the property's well. She questioned what measures are available to protect her property's well.

Response: The Department proposes to implement a vibration-monitoring plan as an element of the ledge removal operation, which will monitor ledge removal activities and set vibration limits to minimize vibrations resulting from these construction.

activities in the area. Also, the Department proposes to initiate a well testing and monitoring program to gather pre- and post-construction data on the existing well. Should the well be adversely affected by the project, the Department will take corrective action.

17. Mr. Fred Schnur, 7 Laurel Lane, Durham (parcel #48), questioned the nature and extent of the proposed drainage easement shown on his property and whether the area would be restored to its pre-existing condition with trees, shrubs, etc. replaced once construction is completed.

Response: The drainage easement is required to construct an extension of the existing culvert and maintain the existing drainage that continues through the area. Although some tree cutting will be necessary to construct the shoulder widening and culvert extension, clearing will be minimized to the degree practicable and the drainage easement limited to only that which is necessary to ensure proper drainage. The impacted area is proposed to primarily be landscaped with humus and grass cover.

Prior to commencing with any work on private property, the Department will develop detailed right-of-way plans depicting the limits and nature of the proposed work, along with the easements necessary to complete the work. These plans will form a basis for appraising the impacts to the property and negotiating the acquisition of the easements.

18. Mr. David Glista, 28 Ross Road, Durham, requested the posted 35 mph speed limit zone be extended from the Durham townline to north of Stagecoach Road to improve the safety of travel on NH 108.

Mr. Glista requested that "Bike Route" signs and markings be installed along NH 108 on the shoulder pavement to highlight the shoulders are to be used for bike travel.

Response: Upon completion of the project's construction, the Department's District Office will review the area to determine whether any adjustments to the posted speed limit are necessary given the geometry of the road, character of the area, and anticipated increased pedestrian and bicycle activity. Appropriate speed limit signs will be provided accordingly.

During the project's final design, the Department will coordinate with the Town staff for input regarding bicycle signing and markings, and will install the signing and markings as part of the project should the Town agree to the maintenance responsibilities for these items. A memorandum of understanding between the Department and Town, which records the installation and outlines the maintenance responsibilities, will need to be executed prior to the incorporation of these items.

19. Mr. Richard H. Lord, 85 Bennett Road, Durham, expressed concern that additional impervious area was being added between the roadway and the Lamprey River adversely affecting (with increased salt runoff) the wetlands that buffer the River. He also expressed concern that the impacts to the wetlands in the Lamprey River basin are proposed to be mitigated in the Oyster River watershed and that no mitigation is proposed within the Lamprey River watershed.

Response: The Department has coordinated the proposed project with a host of natural resources agencies (including the Army Corps of Engineers, Environmental Protection Agency, National Park Service, NHDES Wetlands Bureau, NH Fish and Game Department, US Fish and Wildlife Service, among others) as is the typical practice for most Department projects. It was agreed at these meetings that the incremental additional pavement width associated with the proposed improvements to this existing facility would not substantively affect the surrounding natural resources. Furthermore, the formalization of the 4-foot shoulders will not require or result in

additional salt usage. Upon completion of the project, the condition of the pavement will be improved, potentially requiring less salt use for winter maintenance.

The proposed project involves impacts within both the Lamprey River and Oyster River watersheds. The Department's proposal to partner with NH Fish and Game Department, National Estuarine Research Reserve and The Nature Conservancy to create/enhance wildlife habitat on the Powers parcel was reviewed and concurred by the resource agencies to be suitable mitigation for the anticipated impacts resulting from the project. Further, it is important to note that the two watersheds are hydrologically connected by an unnamed watercourse that flows under the roadway at this location.

20. Ms. Beth Olshansky, 122 Packers Falls Road, Durham, suggested a more attractive alternative to the "trashcan type" of terminal end unit be utilized for the ends of guardrail on the project.

Response: The Department has adopted the Energy Absorbing Guard Rail Terminal (EAGRT) as the new standard terminal end unit, which has been crash-tested and deemed crash-worthy, and felt to be more attractive than the Eccentric Loaded Terminal (ELT) unit ("trashcan type").

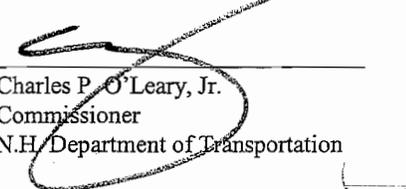
21. Ms. Diane P. Freedman, 28 Laurel Lane, Durham (parcel #42), expressed concern that the Public Hearing was scheduled in July, a time when interested parties in the college community would be unavailable to attend; that the certified mailing process created needless delay, complication, and expense; and that the Hearing Notice and map lacked sufficient information to know precisely what the project involved and how one might be affected.

Response: The Department shares Ms. Freedman's concern with the Public Hearing schedule, but notes the Hearing was very well attended with over 60 people in attendance. Numerous comments were offered at the Hearing along with a large amount of correspondence received during the 10-day comment period, all of which were included in the official Public Hearing record. Additionally, several public informational meetings (November 19, 2002, March 23, 2004, and March 24, 2004) were held in both communities, which afforded ample opportunities for input from interested parties in the college community and for abutting property owners to find out specifically what the project involved and how they may be affected.

Relative to the certified mailing process, the Department is required by law (RSA 230:18) to provide notice to the owners of properties potentially impacted by the project by certified mail.

The intent of the Hearing notice and map is to advise recipients of the proposed project's location and provide a general description of the proposed work. Routinely, potentially affected property owners contact the Project Manager to get more specific information regarding the project and potential impacts on their property or they view the Department's website where Public Hearing plans are posted electronically. It is viewed as economically impracticable to mail plans of sufficient size to adequately convey the proposed work and potential impact to all the property owners possibly affected.

23 July 07
Date


Charles P. O'Leary, Jr.
Commissioner
N.H. Department of Transportation

Photographs

Photo A



Typical NH Route 108 in Durham

Photo B



Typical NH Route 108 in Newmarket

Photo C



Potential Drainage Treatment Area

Photo D



NH Route 108/ Simons Lane Intersection

Photo E



NH Route 108/ Longmarsh Road Intersection

Photo F



NH Route 108/ Laurel Lane Intersection

Photo G



NH Route 108/ Durham Point Road Intersection

Photo H



NH Route 108/ Stagecoach Road Intersection

Photo I



Typical Wildcat Transit Gravel Pulloff

Photo J



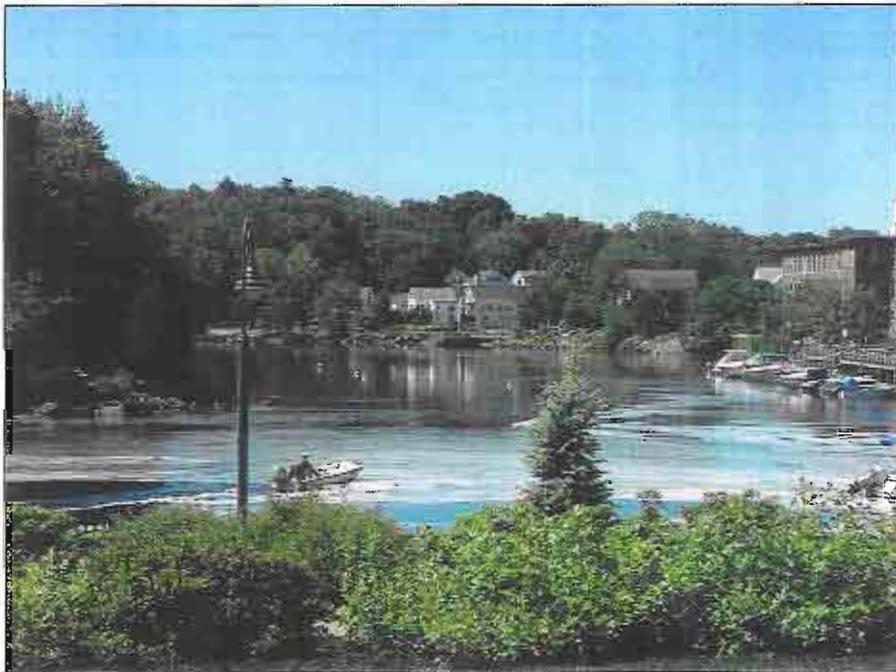
Typical Deficient Cable Guardrail

Photo K



Typical Roadway Cross Culvert

Photo L



Lamprey River

Photo M



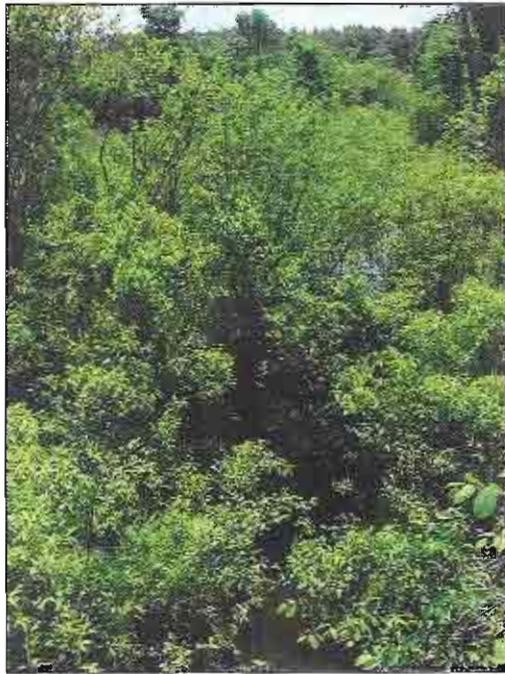
Oyster River (bridge just north of project area)

Photo N



Ellison Brook

Photo O



Longmarsh (Hammel) Brook

Photo P



Longmarsh (Hammel) Brook Bridge

Photo Q1



Typical Emergent Wetland (Field)

Photo Q2



Typical Forested/ Scrub-shrub Wetland

Photo Q3



Typical Emergent Marsh/ Scrub-shrub Wetland

Photo Q4



Typical Lacustrine Wetland (Backwater)

Photo Q5



Impounded Riverine Wetland

Photo R



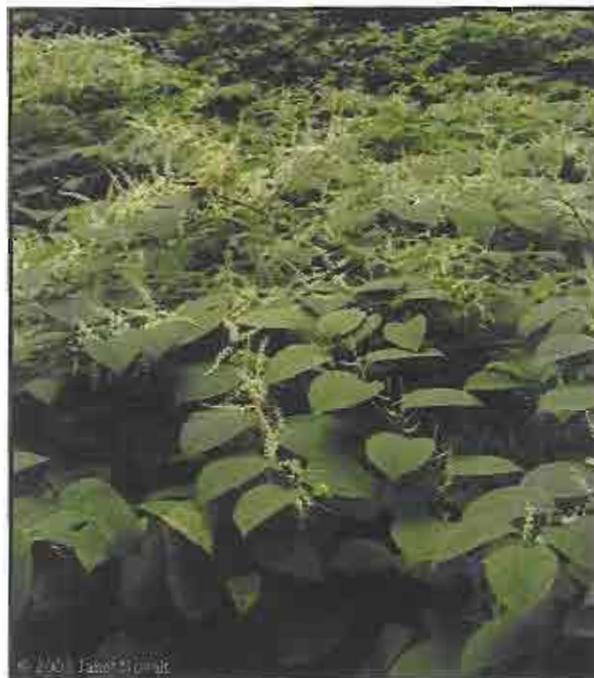
The "Flats"

Photo S



Ellison Brook Culvert

Photo T



Japanese Knotweed

Photo U1



Commercial/ Residential Area of Newmarket (looking south)

Photo U2



Commercial/ Residential Area of Newmarket (looking north)

Photo V



Typical Stonewall in Project Area

Photo W



NH Route 108/ Bennett Road Intersection

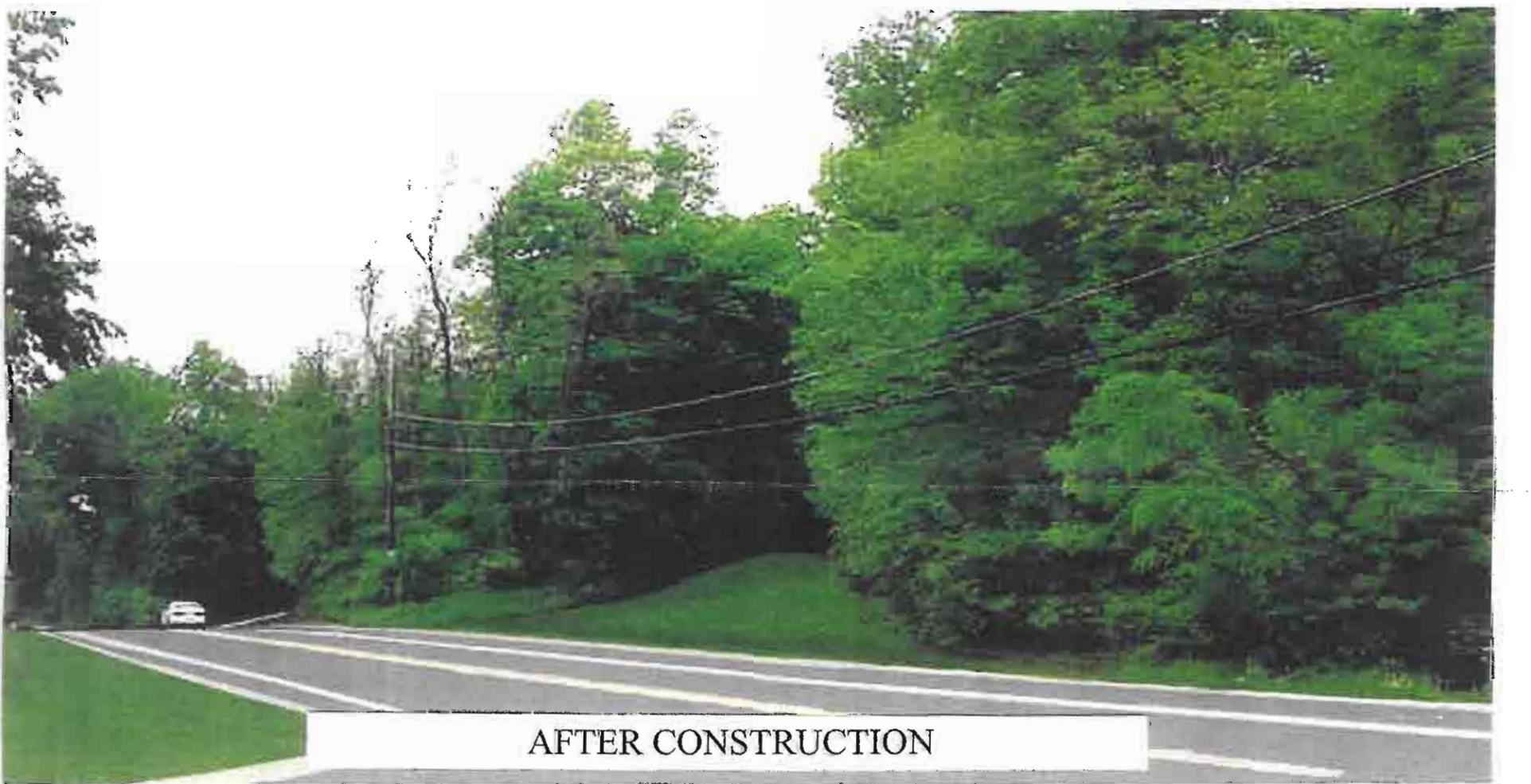
Photo Simulations

NH Route 108/ Bennett Road Intersection



BEFORE CONSTRUCTION

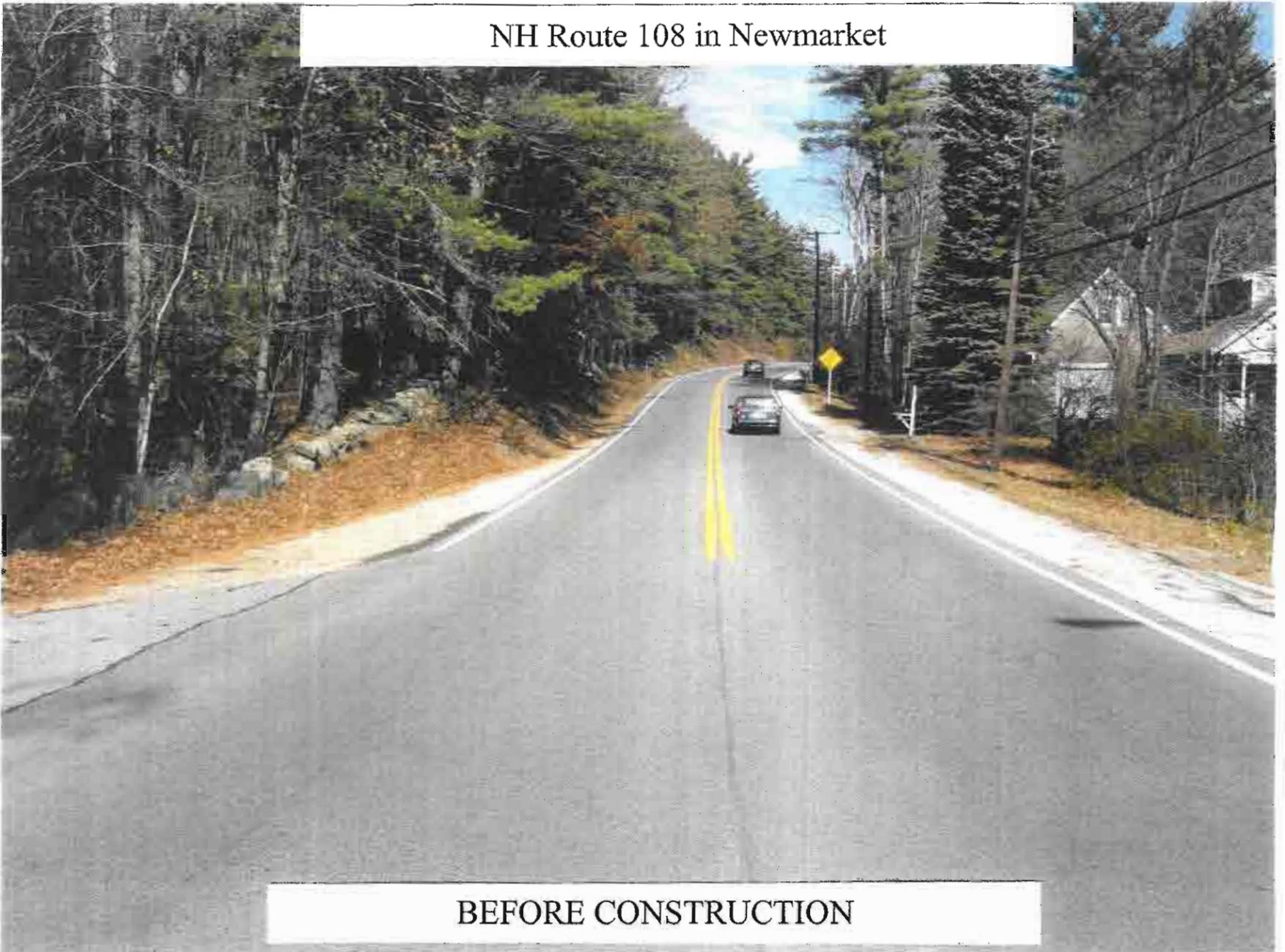
**Durham / Newmarket 13080
NH Route 108 at Bennett Road
Sta. 237+70 - Looking South**



AFTER CONSTRUCTION

**Durham / Newmarket 13080
NH Route 108 at Bennett Road
Sta. 237+70 - Looking South**

NH Route 108 in Newmarket



BEFORE CONSTRUCTION

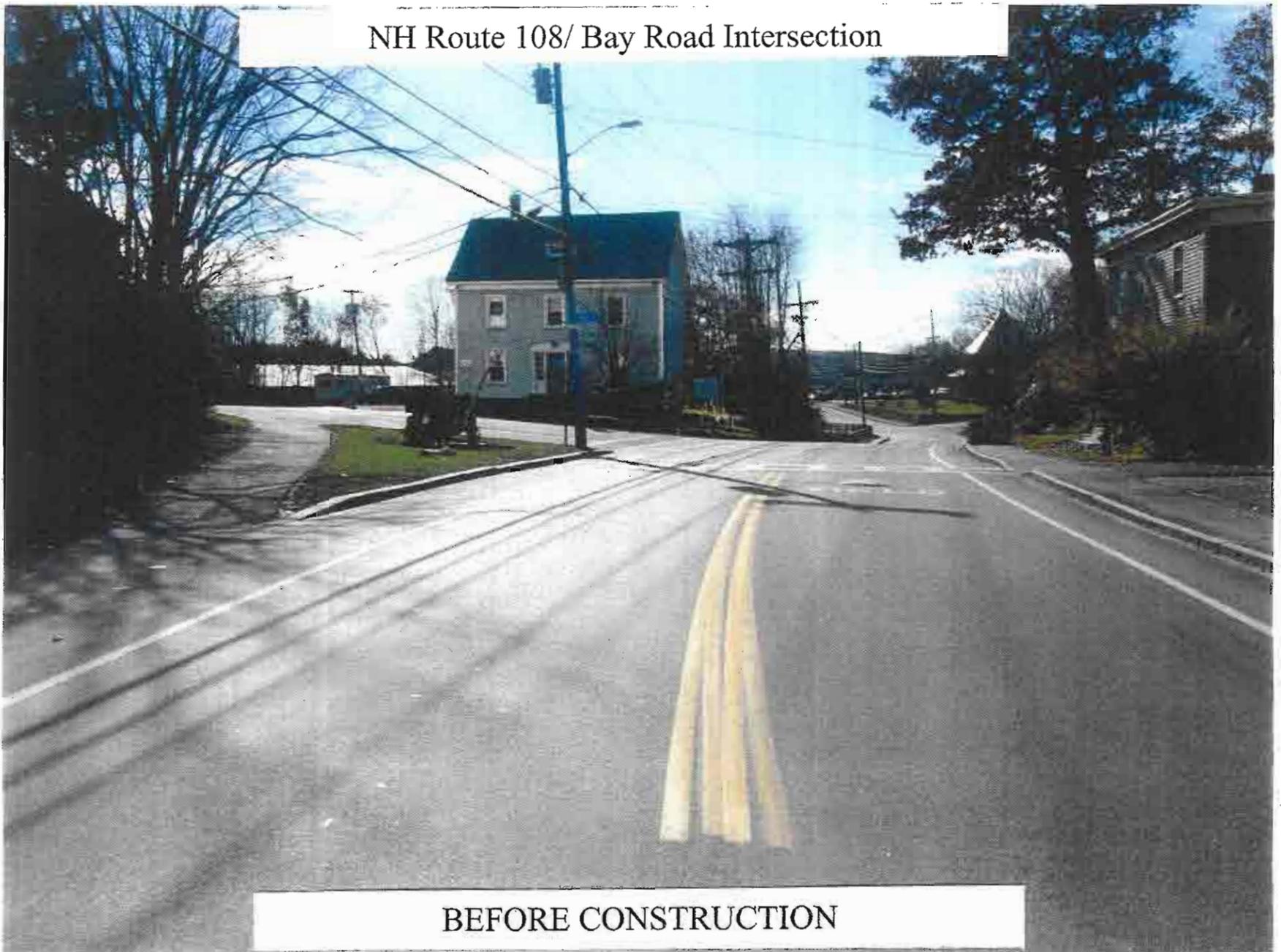
**Durham / Newmarket 13080 - NH Route 108
Sta. 246+40 - Looking North**



AFTER CONSTRUCTION

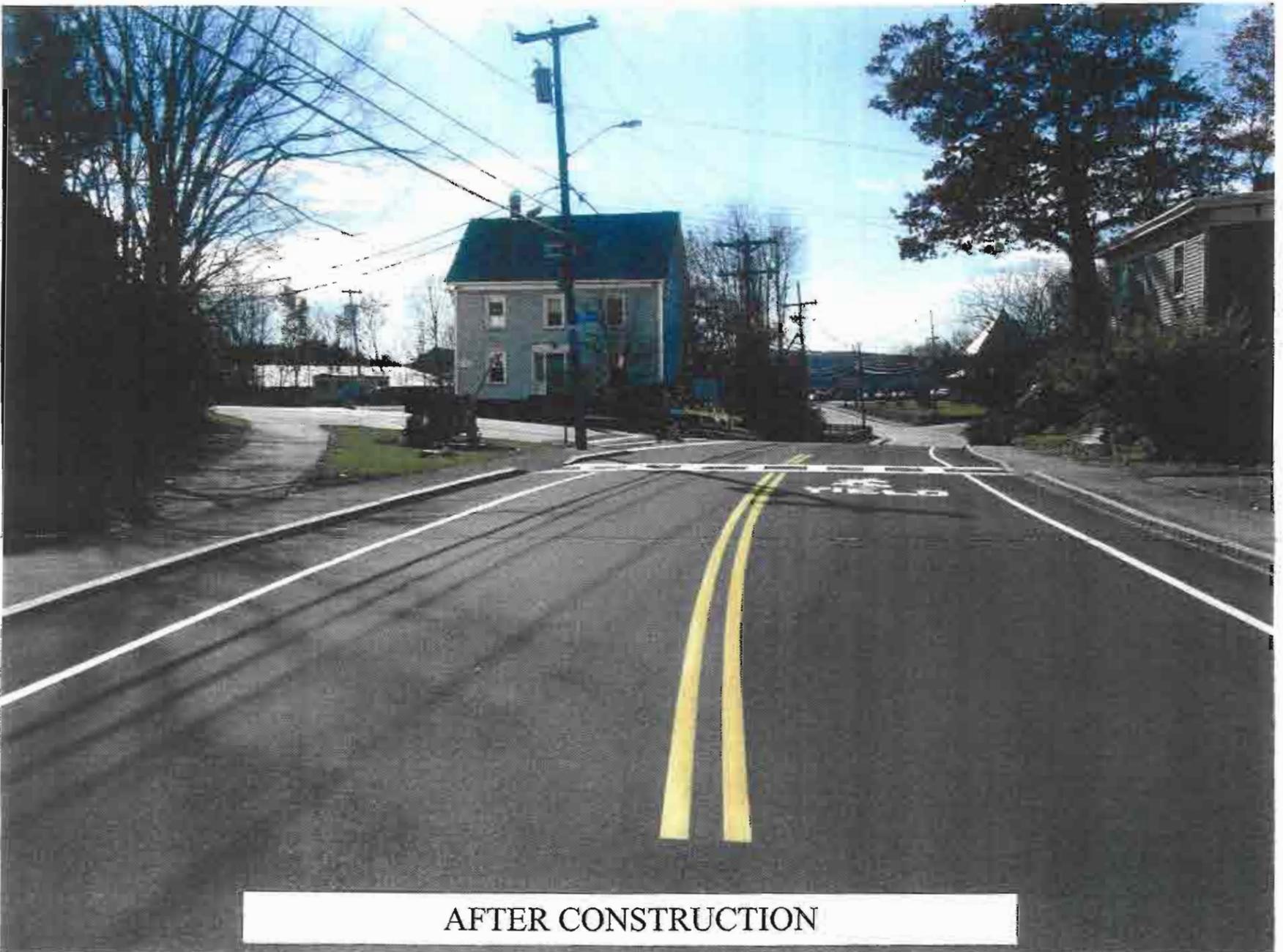
**Durham / Newmarket 13080 - NH Route 108
Sta. 246+40 - Looking North**

NH Route 108/ Bay Road Intersection



BEFORE CONSTRUCTION

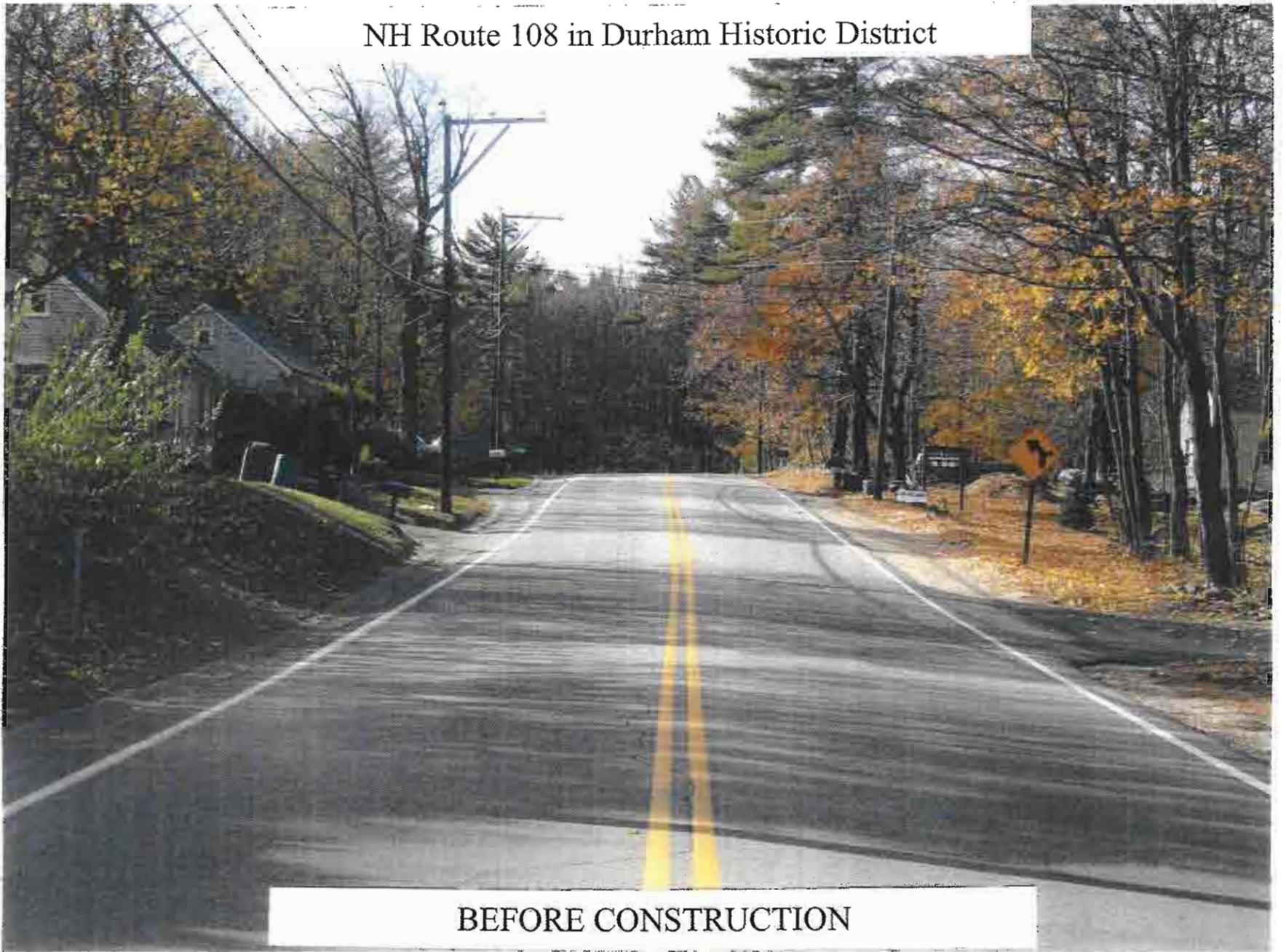
**Durham / Newmarket 13080 - NH Route 108
Sta. 201+00 - Looking South**



AFTER CONSTRUCTION

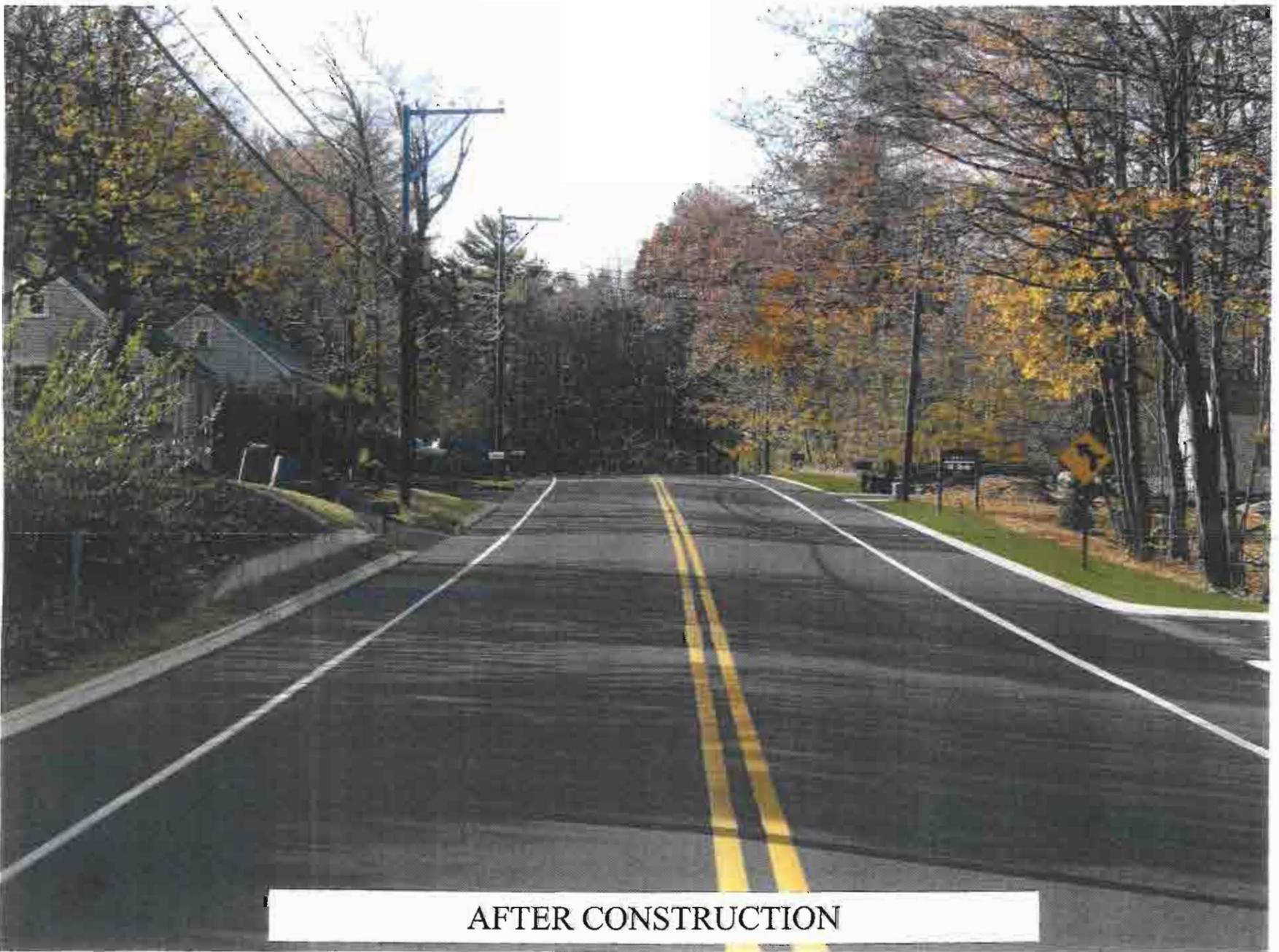
**Durham / Newmarket 13080 - NH Route 108
Sta. 201+00 - Looking South**

NH Route 108 in Durham Historic District



BEFORE CONSTRUCTION

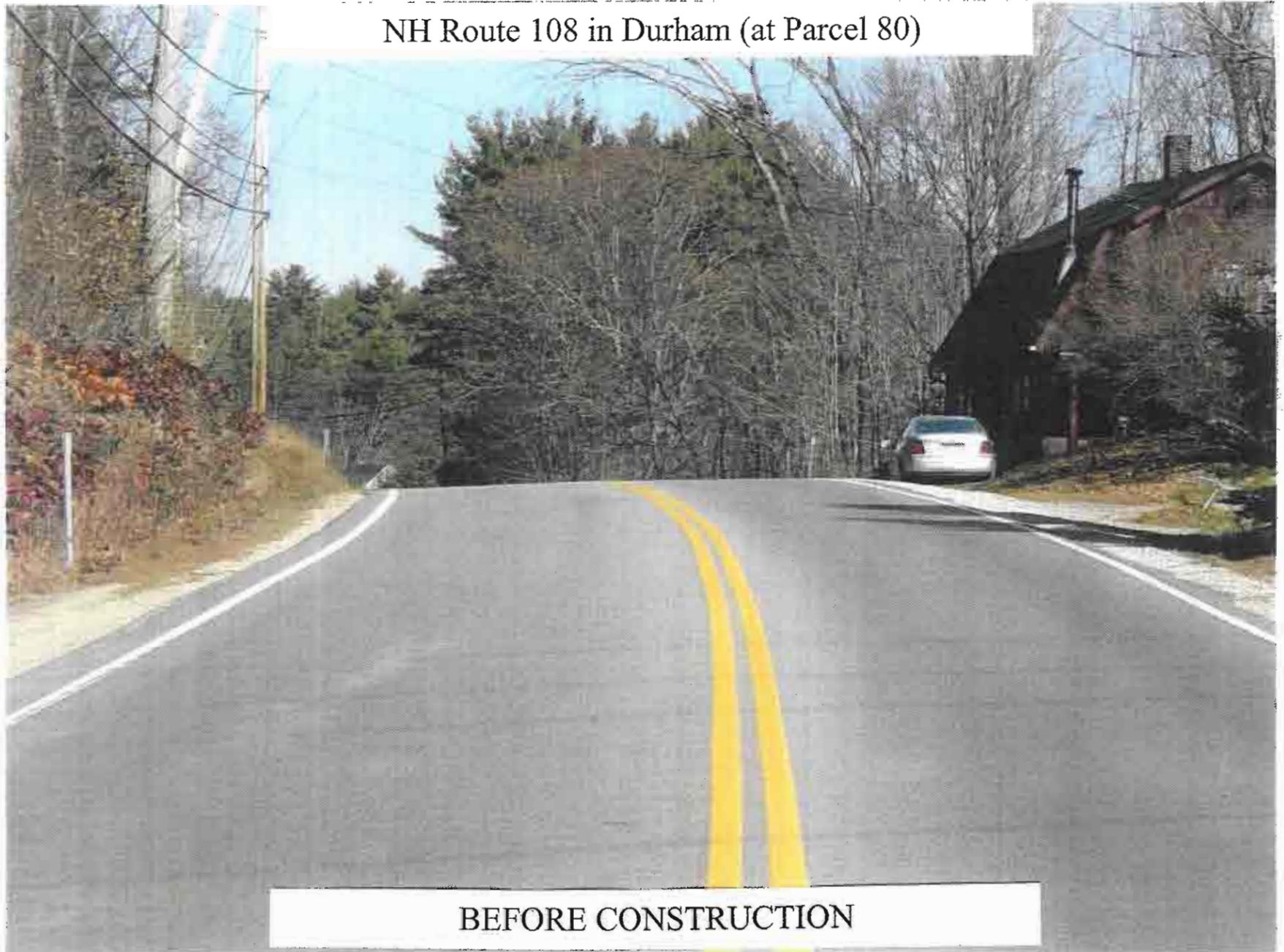
**Durham / Newmarket 13080 - NH Route 108
Sta, 252+80 - Looking South**



AFTER CONSTRUCTION

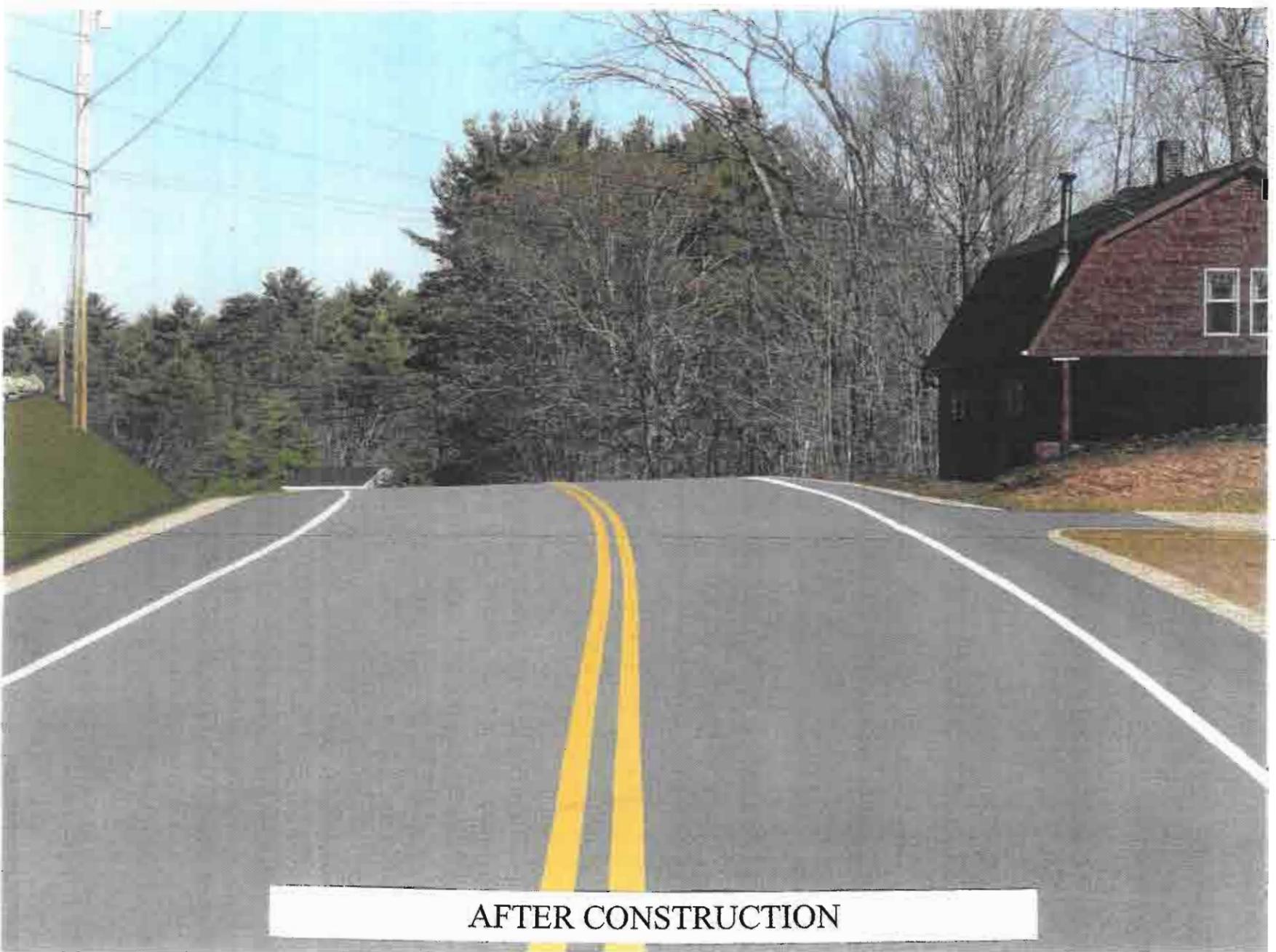
**Durham / Newmarket 13080 - NH Route 108
Sta. 252+80 - Looking South**

NH Route 108 in Durham (at Parcel 80)



BEFORE CONSTRUCTION

**Durham / Newmarket 13080 - NH Route 108
Sta. 238+80 - Looking North**



AFTER CONSTRUCTION

**Durham / Newmarket 13080 - NH Route 108
Sta. 238+80 - Looking North**