

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Page 1 of 21

Part I: General Conditions

General Information

Name of Municipality or Organization: State:

EPA NPDES Permit Number (if applicable):

Primary MS4 Program Manager Contact Information

Name: Title:

Street Address Line 1:

Street Address Line 2:

City: State: Zip Code:

Email: Phone Number:

Fax Number:

Other Information

Stormwater Management Program (SWMP) Location (web address or physical location, if already completed):

Eligibility Determination

Endangered Species Act (ESA) Determination Complete?

Eligibility Criteria (check all that apply): ☐ A ☐ B ☒ C

National Historic Preservation Act (NHPA) Determination Complete?

Eligibility Criteria (check all that apply): ☒ A ☐ B ☐ C ☐ D

☒ Check the box if your municipality or organization was covered under the 2003 MS4 General Permit

MS4 Infrastructure (if covered under the 2003 permit)

Estimated Percent of Outfall Map Complete?
(Part II, III, IV or V, Subpart B.3.(a.) of 2003 permit)

If 100% of 2003 requirements not met, enter an estimated date of completion (MM/DD/YY):

Web address where MS4 map is published:

If outfall map is unavailable on the internet an electronic or paper copy of the outfall map must be included with NOI submission (see section V for submission options)

Regulatory Authorities (if covered under the 2003 permit)

Illicit Discharge Detection and Elimination (IDDE) Authority Adopted?
(Part II, III, IV or V, Subpart B.3.(b.) of 2003 permit)

Effective Date or Estimated Date of Adoption (MM/DD/YY):

Construction/Erosion and Sediment Control (ESC) Authority Adopted?
(Part II, III, IV or V, Subpart B.4.(a.) of 2003 permit)

Effective Date or Estimated Date of Adoption (MM/DD/YY):

Post-Construction Stormwater Management Adopted?
(Part II, III, IV or V, Subpart B.5.(a.) of 2003 permit)

Effective Date or Estimated Date of Adoption (MM/DD/YY):

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Part II: Summary of Receiving Waters

Please list the waterbodies to which your MS4 discharges. For each waterbody, please report the number of outfalls discharging into it and, if applicable, the segment ID and any impairments.

New Hampshire list of impaired waters: <http://des.nh.gov/organization/divisions/water/wmb/swqa/>

[illegible]

Waterbody that receives flow from the MS4 and segment ID if applicable	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
NHLAK700061203-09 Redfield Estates Pond	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
NHRIV700061101-08 Unnamed Brook	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
NHRIV700061101-05 Taylor Brook	2	☐	☐	☐	☐	☐	☐	☐	☒	☐	
NHLAK700061101-01 Island Pond, Derry, W/Cwf	4	☐	☒	☐	☐	☐	☒	☐	☐	☐	Cyanobacteria hepatotoxic microcystins
NHRIV700061101-03 Unnamed Brook to Ballard Pond	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	
NHRIV700061203-08 Catobrook North	5	☐	☐	☐	☐	☐	☐	☐	☐	☐	
NHRIV700061203-29 Catobrook South	9	☐	☐	☐	☐	☐	☐	☐	☐	☐	
NHRIV700061101-01 Drew, Cunningham, Leavitt, & Unnamed Brooks	10	☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
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Part III: Stormwater Management Program Summary

Identify the Best Management Practices (BMPs) that will be employed to address each of the six Minimum Control Measures (MCMs).

For each MCM, list each existing or proposed BMP by category and provide a brief description, responsible parties/departments, measurable goals, and the year the BMP will be employed (public education and outreach BMPs also requires a target audience). **Use the drop-down menus in each table or enter your own text to override the drop down menu.**

MCM 1: Public Education and Outreach

BMP Media/Category (enter your own text to override the drop down menu)	BMP Description	Targeted Audience	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal	Beginning Year of BMP Implementation
Signs	Signs citing ordinance to cleanup after dog	Residents (dog owners)	DPW	Decreased presence of dog waste in problem area	2018
Webpage and Promotional materials	Winter Salt Management	Businesses, Institutions and Commercial Facilities	DPW	Number of newly certified and recertified Green SnoPro professionals, reduced chloride use.	2018
Brochures/Pamphlets	Sedimentation & Erosion Control Requirements	Developers (construction)	Regional Planning commission to assist DPW with developing brochure	Number of developers reached and number of concerns identified during site inspections.	2019
Brochures/Pamphlets	Stormwater Pollution Prevention for Industrial Sites	Industrial Facilities	Develop through NH Stormwater Coalition, implement through DPW	Green Yard Certification	2020
Webpage and Promotional materials	Proper Fertilizer Use & Yard Waste Management	Residents	Regional Planning commission to assist DPW with developing brochure	Number of residents reached, increased awareness of proper fertilizer use, yard waste management, & impacts to water quality	2019
Pamphlet and/or Workshop	Green Landscaping for Water Quality	Businesses, Institutions and Commercial Facilities	Regional Planning commission to assist DPW with developing brochure	Number of attendees, Pamphlets distributed	2022

Part III: Stormwater Management Program Summary (continued)

[illegible]

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 3: Illicit Discharge Detection and Elimination (IDDE)

BMP Categorization (enter your own text to override the drop down menu)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwriten)
SSO inventory	Develop SSO inventory in accordance of permit conditions	DPW Operations	Complete within 1 year of effective date of permit
Storm sewer system map	Create map and update during IDDE program completion	DPW Operations	Update map within 2 years of effective date of permit and complete full system map 10 years after effective date of permit
Written IDDE program development	Create written IDDE program	DPW Operations	Complete within 1 year of the effective date of permit and update as required
Implement IDDE program	Implement catchment investigations according to program and permit conditions	DPW Operations	Complete 10 years after effective date of permit
Employee training	Train employees on IDDE implementation	DPW Operations	Train annually
Conduct dry weather screening	Conduct in accordance with outfall screening procedure and permit conditions	DPW Environmental	Complete 3 years after effective date of permit
Conduct wet weather screening	Conduct in accordance with outfall screening procedure	DPW Environmental	Complete 10 years after effective date of permit
Ongoing screening	Conduct dry weather and wet weather screening (as necessary)	DPW Operations	Complete ongoing outfall screening on completion of IDDE program

Part III: Stormwater Management Program Summary (continued)

BMP Categorization (enter your own text to override the drop down menu or entered text)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)
Site inspection and enforcement of Erosion and Sediment Control (ESC) measures	Complete written procedures of site inspections and enforcement procedures	Engineering	Complete within 1 year of the effective date of permit
Site plan review	Complete written procedures of site plan review and begin implementation	Engineering	Complete within 1 year of the effective date of permit
Erosion and sediment control	Adoption of requirements for construction operators to implement a sediment and erosion control program	Engineering	Complete within 1 year of the effective date of permit
Waste control	Adoption of requirements to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes	Engineering	Complete within 1 year of the effective date of permit

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary *(continued)*

MCM 5: Post-Construction Stormwater Management in New Development and Redevelopment

BMP Categorization (enter your own text to override the drop down menu or entered text)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)
As-built plans for on-site stormwater control	The procedures to require submission of as-built drawings and ensure long term operation and maintenance will be a part of the SWMP	Engineering	Require submission of as-built plans for completed projects
Target properties to reduce impervious areas	Complete an inventory and priority ranking of permittee-owned property and existing infrastructure that could be retrofitted with BMPs designed to reduce the frequency, volume and pollutant loads of stormwater discharges to its MS4 through the mitigation of impervious area	DPW Operations	Complete 4 years after effective date of permit and report annually on retrofitted properties
Allow green infrastructure	Develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist	DPW/Planning/Building Depts	Complete 4 years after effective date of permit and implement recommendations of report
Street design and parking lot guidelines	Develop a report assessing requirements that affect the creation of impervious cover. The assessment will help determine if changes to design standards for streets and parking lots can be modified to support low impact design options.	DPW/Planning?Fire Depts.	Complete 4 years after effective date of permit and implement recommendations of report

[illegible]

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 6: Municipal Good Housekeeping and Pollution Prevention

BMP Categorization (enter your own text to override the drop down menu or entered text)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)	Beginning Year of BMP Implementation
O&M procedures	Create written O&M procedures including all requirements contained in 2.3.7.1 for parks and open spaces, buildings and facilities, and vehicles and equipment	DPW Operations	Complete and implement 2 years after effective date of permit	2020
Inventory all permittee-owned parks and open spaces, buildings and facilities, and vehicles and equipment	Create inventory	DPW Operations	Complete 2 years after effective date of permit and implement annually	2020
Infrastructure O&M	Establish and implement Stormwater Asset Management program for repair and rehabilitation of MS4 infrastructure	DPW Environmental and Asset Management Coordinator	Complete 2 years after effective date of permit	2019
Stormwater Pollution Prevention Plan (SWPPP)	Create SWPPPs for maintenance garages, transfer stations, and other waste-handling facilities	DPW Environmental	Complete 2 years after effective date of permit	2018
Catch basin cleaning	Establish schedule for catch basin cleaning such that each catch basin is no more than 50% full and clean catch basins on that schedule	DPW Operations/Contracted out	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually	2018
Street sweeping program	Sweep all streets and permittee-owned parking lots in accordance with permit conditions	DPW Operations Contracted Out	Sweep all streets and permittee-owned parking lots once per year in the spring	2018

[illegible]

Part III: Stormwater Management Program Summary (continued)

Use the drop-down menus to select the applicable TMDL, action description to meet the TMDL requirements, and the responsible department/parties. If no options are applicable, or more than one, **enter your own text to override drop-down menus**. If submitting a NHDES approved alternative reduction plan, attach and submit it with the NOI.

[illegible]

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

Actions for Meeting Requirements Related to Water Quality Limited Waters

Use the drop-down menus to select the pollutant causing the water quality limitation and enter the waterbody ID(s) experiencing excursions above water quality standards for that pollutant. Choose the action description from the dropdown menu and indicate the responsible party. If no options are applicable, or more than one, **enter your own text to override drop-down menus.**

[illegible]

Part IV: Notes and additional information

Use the space below to indicate the part(s) of 2.2.2 that you have identified as not applicable to your MS4 and provide all supporting documentation below or attach additional documents if necessary.

Provide any additional information about your MS4 program below.

Part I. General Conditions-Eligibility Determination**ESA Determination**

- Only the Long Eared Northern Bat was identified as potentially being present in the Town of Derry. The Town believes that its discharges have no effect on the Northern Long Eared Bat, and that planned actions under the permit will have no effect on the Northern Long Eared Bat. The Town of Derry will consult with US Fish and Wildlife as needed during the permit term on any future BMPs. A phone consult was held with David Simmons of USF&W, who suggested the USF&W letter dated January 8, 2018 (attached).
-The Town does not believe any of its stormwater discharges would have an effect on the Shortnose and Atlantic sturgeon. None of the Town's stormwater discharges are within Sturgeon accessible watersheds or subwatersheds affecting coastal water quality. While Appendix C of the permit states that EPA has determined that discharges from MS4s are not likely to adversely affect listed species of critical habitat under the jurisdiction of the National Marine Fisheries Service (NMFS), and that no further action is required by permittees. However during the filing of the NOI for the Town's Multi-Sector General Permit, EPA rejected the Town's NOI for not conducting the NMFS evaluation. Due to obvious inconsistencies within EPA's Stormwater programs and concern for potential non-compliance, the Town attempted phone contact with NMFS on 7/24/18 and 8/1/18. No response was received after the Town's second attempt. The ESA completed for the Town's MSGP indicated there would not be any adverse affect of critical species or their habitat. The most current NMFS map showing the Sturgeon accessible watersheds and subwatersheds affecting coastal water quality is attached.

HSA Determination

The Town of Derry was permitted under the 2003 MS4GP and currently has no plans to construct BMPs that would impact under 1 acre in size. Should plans change, the Town will conduct appropriate historical review at that time.

MS4 Infrastructure

The current stormwater infrastructure map includes some structures owned and maintained by NH Dept of Transportation and private/commercial entities. As the map is updated, state- and privately-owned infrastructure will be differentiated from municipally-owned stormwater infrastructure.

PART III Actions for Meeting Requirements Related to Water Quality Limited Waters

-Nitrogen Impairments - Section 2.2.2.a.i of the MS4GP - Under the new MS4GP, USEPA erroneously claims that discharges from Derry's MS4 are to waterbodies that are impaired due to nitrogen and is therefore required to comply with Appendix H, Part I of the permit. It is apparent that this claim is only based on a small (approximately 0.78 square miles) area of Derry being located within the TOWLE BROOK-LILY POND Watershed (AU: 010600030802) which drains to the Exeter River (NHRIV600030802-03). The Town of Derry disagrees for the following reasons:

1. The area of Derry located within the referenced watershed is not within the EPA 2017 MS4 Designated area for the Town of Derry.
2. The Town does not own or maintain any property, roads, or stormwater drainage systems within the referenced watershed. A figure showing the subject area along with the watershed boundary and the regulated MS4 area is included with this NOI.
3. The 3 Assessment Units located either partially or entirely within the Town of Derry (NHRIV600030802-23, NHIMP600030802-07, & NHRIV600030802-01) are not listed as impaired for nitrogen on the 2016 305(b)/303(d) list.
4. The small area (0.8 sq. mi.) of watershed located within the Town of Derry drains to a substantially larger area (~13.8 sq.mi.) within the Town of Chester for which received an exemption from the MS4GP. Any efforts by the Town of Derry to implement the requirements for nitrogen reduction within such a small area would have no meaningful or even measurable impact since it drains to such a large area in a downstream town whose land use is largely farms and agriculture but yet has no requirement to implement similar measures.

-NHRIV700061203-16 Beaver Brook is reported to be impaired for iron. The Town believes that complying with Appendix H Part V is not necessary as it is already regulated under a separate regulatory program, the monitoring results over the past 12 years demonstrate iron in surface water meets chronic surface water quality standard, and a primary source of the iron is naturally occurring.

1. The iron impairment is based on individual samples collected at two separate locations in 1999 which is before the first edition of the Consolidated Assessment and Listing Methodology and the Ambient River Monitoring Program QAPP, both published in 2002. According to the NH 2016 305(b)/303(d) list of Impaired Waters, the cause of the impairment is listed as "Landfill". The 2 sample locations are located adjacent to and downstream of the Town's closed/capped landfill (capped in 1986 and 1998).
2. The site and portion of the adjacent stream segment are being monitored and addressed under a separate regulatory program. The Town has been monitoring surface water at 3 locations within this segment of Beaver Brook under a NHDES issued Groundwater Management and Discharge Permit (GMDP) since 2002. One surface water location (SW-3) immediately downstream of the landfill is the

3. Surface water monitoring under the GMDP shows there are only minor differences in total iron concentration in surface water from upstream to downstream past the landfill. A summary table of total iron concentrations in surface water since 2006 is attached along with the NH Chronic standard of 1 mg/l (1000 ug/l). No sample collected during this time exceeded the Chronic Criteria concentration of 1 mg/l.

4. Evidence also suggests that a significant portion of the iron in surface water is naturally occurring. According to USGS WRI Report 91-4025 "Geohydrology and Water Quality of Stratified-Drift Aquifers in the Lower Merrimack and Coastal River Basins, Southeastern New Hampshire", Beaver Brook flows through stratified drift (sand and gravel) aquifers which primarily "discharge by flow to rivers and ponds in the basin." The report also states that "High concentrations of iron and manganese were the most common water quality problems found during the investigation" with iron concentrations as high as 7.4 mg/l in groundwater. The Town also operated several water supply wells upstream of the landfill until the 1980s. A 1973 Report "Improvements to the Municipal Water System" by Camp, Dresser & McKee, Inc. also reported that several of the supply wells which abutted Beaver Brook in the same stream segment were high in iron.

PART III WATERS with a CHLORIDE TMDL and WATERS IMPAIRED FOR CHLORIDE

The Town proposes to implement an Alternative Chloride Reduction Plan in lieu of the requirements in the MS4GP.- In 2010 the Town of Derry prepared a Salt Reduction Plan (SRP) to comply with requirements of the I-93 Chloride TMDL and applicable waste load allocations. The SRP was reviewed and approved on December 6, 2010 by the I-93 Chloride Reduction Steering Committee made up of representatives from USEPA, Federal Highway Administration, NHDES, and NHDOT. The SRP was revised and approved 3 times during implementation of various new Best Management Practices. During the development of the TMDL and SRP, the Town was actively involved in the I-93 salt reduction workgroup, hosted numerous Green SnoPro Training Sessions at the Derry Municipal Center, implemented the SRP Town wide (not just within the watershed), enacted several equipment BMPs, and even received an award for our involvement and outreach efforts. These efforts have already led to reduction in salt imports and water quality improvement.

During the first annual Salt symposium sponsored by NHDES and UNH-T2, Derry's Superintendent of Operations was awarded the Salt-n-Peppa Award (1 of 3 awards given that day). Senator Chuck Morse presented the Salt-n-Peppa Award which is given to:

"the salt professional exemplifying the best blending of stakeholders in a salt reduction stew. This award recognizes an individual who has provided outstanding leadership in addressing salt reduction. Addressing private sector salt reduction in a comprehensive way is relatively new to NHDES and UNH. When DES began working on this issue in 2006 in the I-93 corridor, including the area just outside our door here at Castleton, staff recognized early on that it would take a collaborative effort among state, municipal, and private salt applicators to make progress. Alan really stands out in this regard. In the early days, he frequently asked a lot of tough questions, keeping everyone on our toes and making sure that DES had good reasons to ask what they were asking him to do. Over time, he became one of the reasons the salt reduction program partners have had success so far. Alan reached out to private applicators in his town, to other towns, and to legislators – in fact, he found one of the sponsors of the salt applicator certification bill. He hosted many work group meetings in the I-93 corridor focused on salt reduction. Alan helped produce a half-hour cable access program on salt reduction that has been viewed by thousands of people. He is made substantial improvements in his own operations, resulting in significant decreases in salt use."

NHDES is assessing conformance with the TMDL during its 10 year review. Data shows there have not been any exceedances since 2011 (through the latest NHDES 2017 data) which leads to the successes of the BMP's and Snow-Pro program already implemented within the watershed. This data has been reviewed and approved by NHDES for publishing,

Based on the above and success at reducing chloride use, the Town believes that continuing with our existing SRP is adequate to meet the same water quality goals and objectives.

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Part V: Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. (40 CFR 122.22)

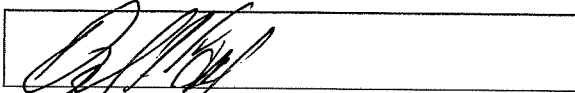
Name:

David Caron

Title:

Town Administrator

Signature:



[To be signed according to Appendix B, Subparagraph B.11, Standard Conditions]

Date:

9/27/18

Note: When prompted during signing, save the document under a new file name



United States Department of the Interior

FISH AND WILDLIFE SERVICE



New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
<http://www.fws.gov/newengland>

January 8, 2018

To Whom It May Concern:

This project was reviewed for the presence of federally listed or proposed, threatened or endangered species or critical habitat per instructions provided on the U.S. Fish and Wildlife Service's New England Field Office website:

<http://www.fws.gov/newengland/EndangeredSpec-Consultation.htm> (accessed January 2018)

Based on information currently available to us, no federally listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under section 7 of the Endangered Species Act is not required. No further Endangered Species Act coordination is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your cooperation. Please contact David Simmons of this office at 603-227-6425 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>



In Reply Refer To:

July 23, 2018

Consultation Code: 05E1NE00-2018-SLI-2483

Event Code: 05E1NE00-2018-E-05765

Project Name: Derry MS4GP ESA Review

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2018-SLI-2483

Event Code: 05E1NE00-2018-E-05765

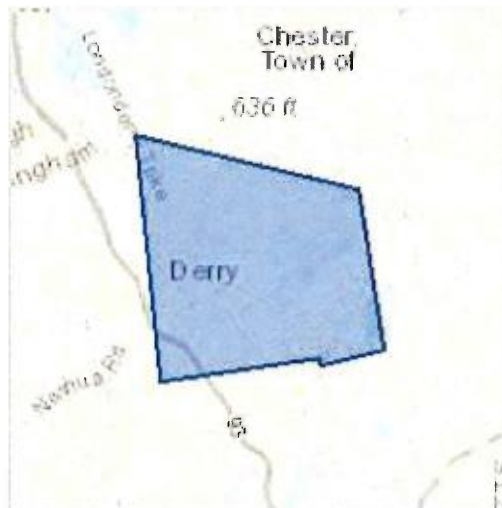
Project Name: Derry MS4GP ESA Review

Project Type: ** OTHER **

Project Description: Town of Derry MS4GP evaluation of whether MS4 discharges impact endangered species or habitat.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/42.891162790557594N71.27686179049526W>



Counties: Rockingham, NH

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

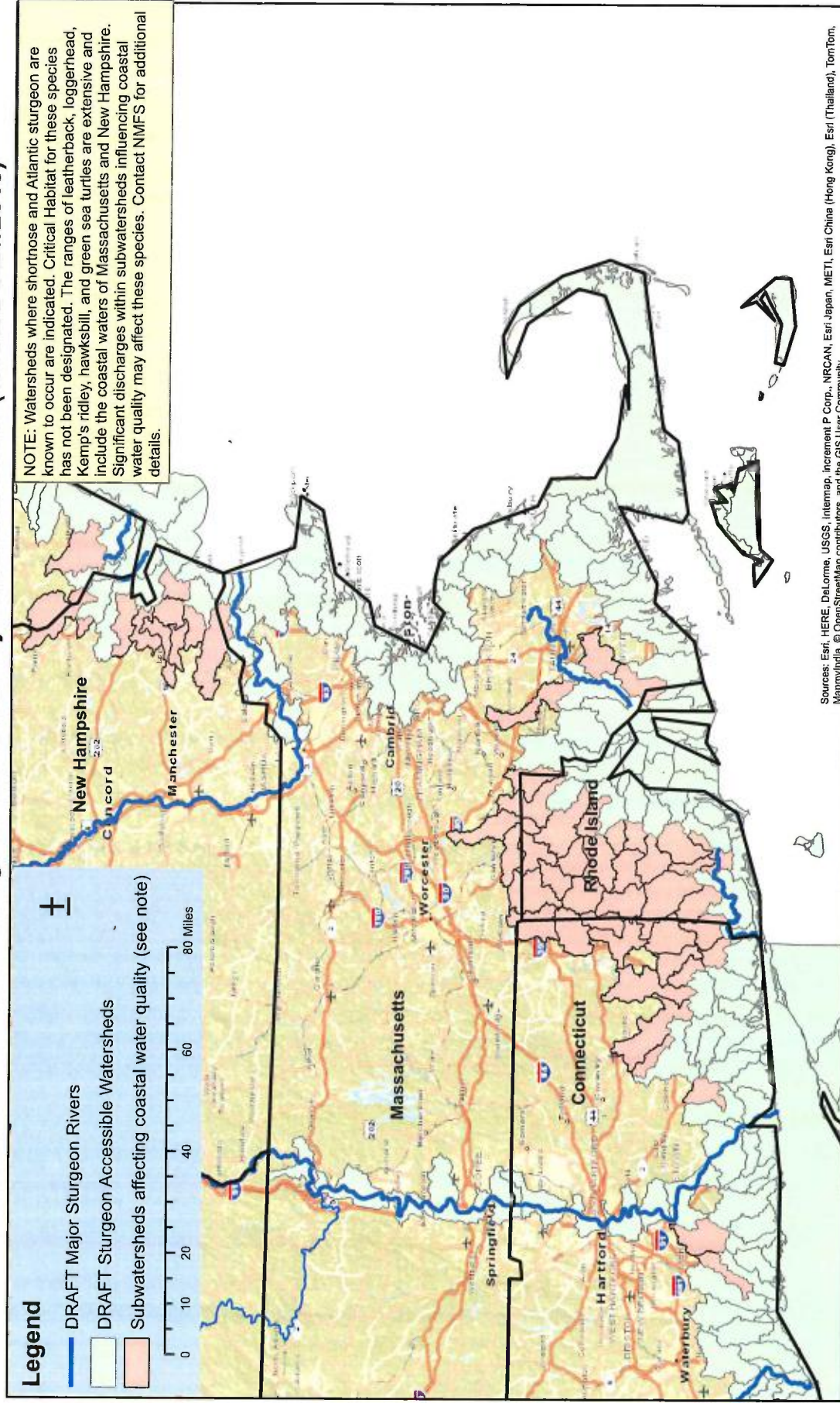
Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

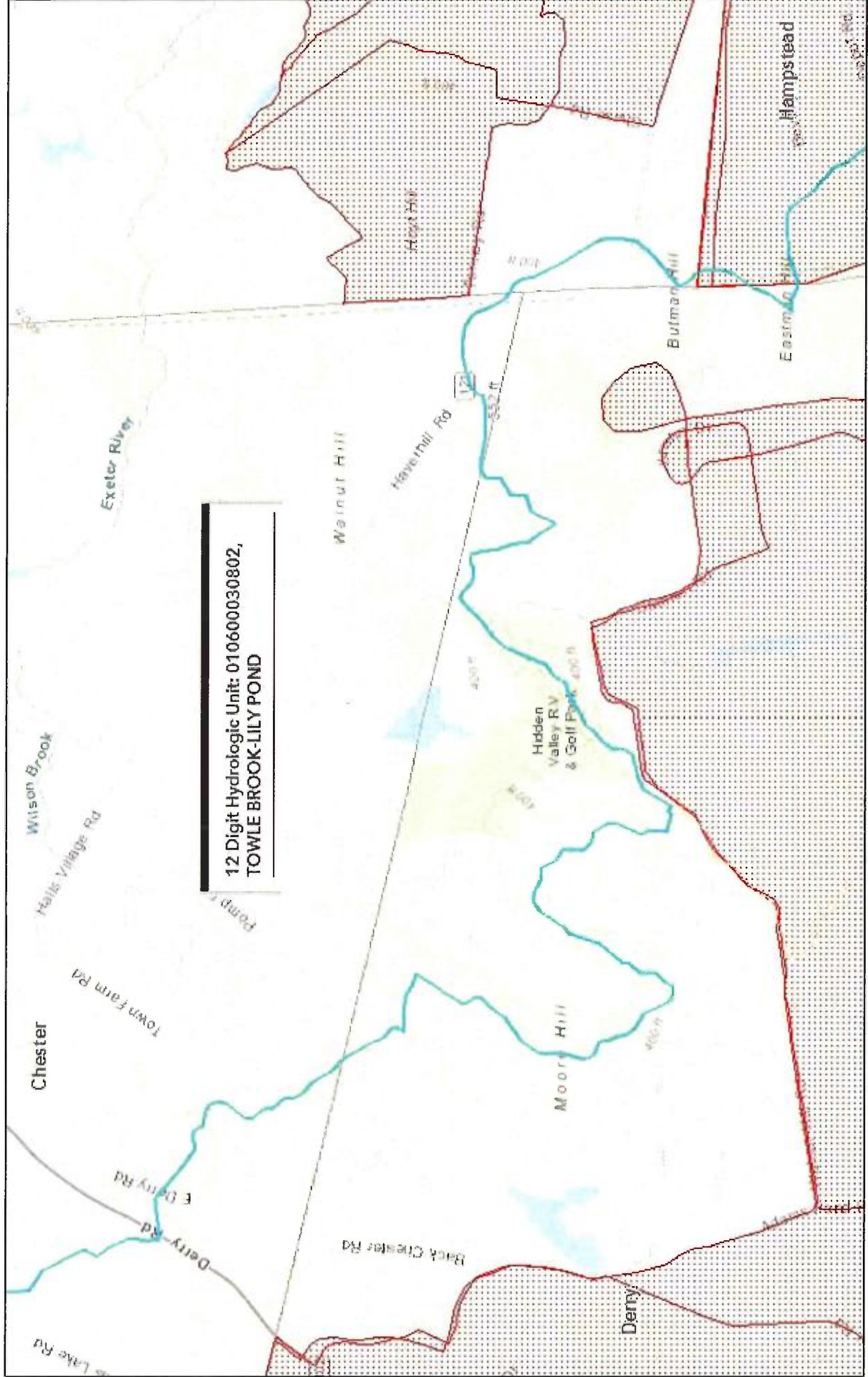
Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

New England Rivers and subwatersheds where ESA-listed shortnose and Atlantic sturgeon occur (created 5/26/2015)



DerryMS4 Permit Area in relation to Towle Brook-Lily Pond Watershed

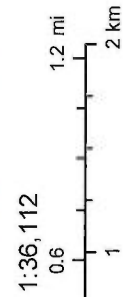


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12 Digit Hydrologic Units

EPA 2017 MS4 General Permit Areas

Municipalities



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, Geobase, IGN, Kadaster NL, Ordnance Survey, Esri

**Summary of Total Iron Concentration in Surface Water
Derry Closed Municipal Landfill/NHRIV700061203-16 Beaver Brook**

NHDES ID	SAMPLE LOCATION			
		10+K-BVR US of Landfill	10+H-BVR DS of Landfill	
Town ID	SW-1		SW-3	SW-6
Location	Upstream of Landfill	Adjacent to Landfill	Downstream of Landfill	Downstream of I-93
Date	*Fresh Water Chronic Criteria = 1 mg/l			
8/19/1999 (NHDES Samples)		2.13	2.38	
11/07/06	0.29		0.42	0.42
04/03/07	0.21		0.25	0.38
11/06/07	0.63		0.79	0.83
04/12/08	0.3		0.39	0.39
11/10/08	0.29		0.38	0.35
04/28/09	0.41		0.55	0.52
11/17/09	0.29		0.39	0.40
04/12/10	0.24		0.34	0.33
11/09/10	0.17		0.34	0.31
04/21/11	0.19		0.26	0.23
11/02/11	0.22		0.28	0.28
04/24/12	0.594		0.395	0.441
11/14/12	0.26		0.40	0.360
04/01/13	0.33		0.21	0.16
04/29/14	0.21		0.27	0.26
04/23/15	0.15		0.19	0.19
04/14/16	0.27		0.31	0.26
04/06/17	0.09		0.26	0.14
04/30/18	0.22		0.31	

*Protection of Aquatic Life Concentration per Env-Wq 1703.21(b)

Town of Derry, NH



Salt Reduction Plan For:

Beaver Brook

Original Approved by Council:

Revision 1: 8/11/2011

Revision 2: 3/9/2016

Revision 3: 9/1/2018

Legal Notices:

These are General guidelines used by the Derry, NH Public Works Dept. Each decision to mobilize crews, extend operation hours, and to apply de-icing, anti-icing, and pre-treatment materials is made based on particular weather conditions, past experience, and the availability of resources and therefore may not adhere strictly to this policy.

Jeffrey H. Taylor & Associates
136 North Main Street, Suite 4
Concord, NH 03301
603-224-6555

December 6, 2010

TO: Salt Reduction Steering Committee Members

FROM: Steve Whitman

RE: Derry, Londonderry, and Windham Salt Reduction Plans

On Friday December 3, 2010 I circulated three local Salt Reduction Plans (Derry, Londonderry, and Windham, NH) by email to the New Hampshire Salt Reduction Steering Committee. A representative of each of the four agencies represented on the Steering Committee was asked to respond and indicate their support of these plans. Below is a record of the responses:

NH Department of Environmental Services – Eric Williams
Approved the Derry, Londonderry, and Windham Plans on 12/3/2010

NH Department of Transportation – Mark Hemmerlein
Approved the Derry, Londonderry, and Windham Plans on 12/3/2010

Federal Highway Administration – Jamie Sikora
Approved the Derry, Londonderry, and Windham Plans on 12/3/2010

Environmental Protection Agency – Carl DeLoi
Approved Windham plan on 12/3/2010, Derry and Londonderry on 12/6/2010

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1.0 Introduction

Beaver Brook has been identified as impaired by the New Hampshire Department of Environmental Services (DES) and the US Environmental Protection Agency (EPA) for chloride concentrations that exceed state and federal water quality standards. NH DES has completed a Total Maximum Daily Load (TMDL) analysis (April 2008) to quantify pollutant reductions needed to meet the state water quality standards for chlorides. The goal of the TMDL is to reduce chloride loads from all sources (municipal, state and private/commercial sources) so that water quality standards for all the designated uses affected by chloride pollution are met in all areas of the Beaver Brook watershed.

The TMDL is expressed as a load duration curve and is based on a 4-day average concentration. The units for the TMDL are expressed as tons of chloride per day. The TMDL was set at the level necessary to achieve the EPA and DES standard of 230 mg Cl/L standard which includes a 10% margin of safety in order to address impacts associated with chlorides on the instream, benthic, and riparian communities. In order to meet water quality standards, significant reductions from current chloride loading from all sources are required. The Town of Derry has agreed to implement reduction measures and improve storage, handling and application operations in order to reduce the amount of chlorides applied during snow and ice removal operations while maintaining an acceptable level of service (LOS) on roadways. See Appendix A for a copy of the approved Municipal Resolution stating same.

This salt reduction plan will serve as a general scope of work for implementation of salt reduction efforts. The Federal Highway Administration has allocated funds to assist municipalities with salt source reductions to implement the chloride TMDL in the I-93 corridor. Preparation of this Salt Reduction Plan is a prerequisite to eligibility for these funds.

For purposes of this plan, salt or chloride reduction efforts not only include simply applying less de-icing materials that contain chloride, but a series of actions that include operational changes and improvements, mechanical upgrades, outreach and awareness activities, and monitoring, all of which are designed and implemented with the result being a net decrease in chloride loading to the watershed.

It is important to note that since the development of the TMDL and prior to development of this plan, the Town of Derry has already started taking chloride reduction measures including construction of a new salt/sand storage facility and loading procedures, calibration of spreaders, preparation of a draft outreach brochure targeted at the private/commercial sectors, and periodic conductivity monitoring of select tributaries to Beaver Brook that is separate from monitoring conducted by NHDES.

Beaver Brook is a 4.86 mile stream segment located in Auburn, Derry, Chester, and Londonderry, NH. The associated watershed is 30.33 square miles (NHDES, Total Maximum Daily Load (TMDL) Study for Waterbodies in the Vicinity of the I-93 Corridor from Massachusetts to Manchester, NH: Beaver Brook in Auburn, Chester, Derry, and Londonderry 2008) (see figure 3).

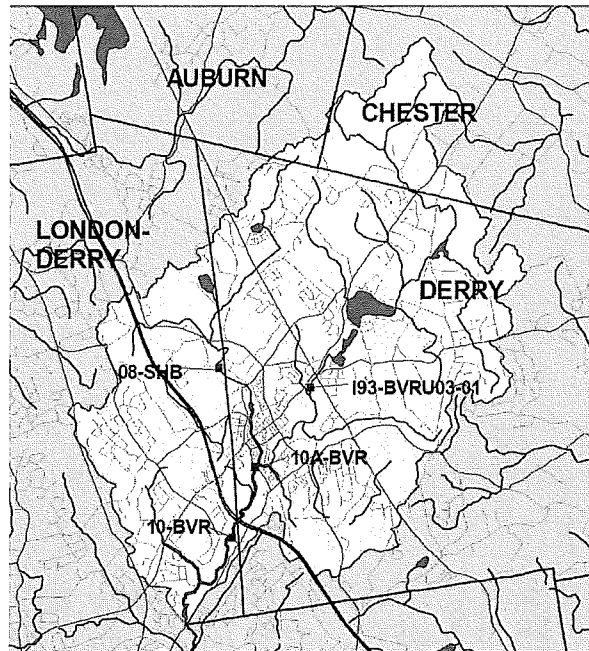


Figure 1: Beaver Brook¹

Derry is responsible for winter maintenance on 212.78² lane miles (106.39 road miles) of road within the watershed. Derry maintains 29⁴ parking lots (14.4 Acres – 627,483 Sq. Ft.) within the watershed. These parking lots include paved (impervious) lots associated with municipal operations (employee lots, highway and waste water facilities, fire and police stations, etc), general public use parking (town parks, municipal lots, library, cemetery, etc.) and the associated parking lot driveways

NHDOT is responsible for winter maintenance operations on approximately 53² lane miles within the entire Beaver Brook Watershed. Within the municipal boundaries of Derry (within the watershed) NHDOT maintains approximately 4.4 lane miles of Interstate I-93 and approximately 17.6 miles of other state routes.

Roadways and parking lots which are not maintained by Derry or DOT are classified as private. These paved surfaces are maintained each winter season by a private snow and ice removal company hired by the respective land owner. Within the watershed and within the municipal boundaries of Derry there are approximately 31.5² lane miles (15.75 road miles) of private roads, 270.5³ acres of parking lots, and 9.18³ miles of parking lot driveways as of the date of this plan. The area of parking lots and parking lot driveways is expected to increase as additional development occurs in areas approved as commercial and industrial.

¹ Photo Credit: NHDES TMDL 2008

² NHDOT 2010 GIS Road Centerline File

³ PSU Parking Lot Study

⁴ Derry GIS 2010

2.0 Plan Development

The goal for the Salt Reduction Plan (SRP) is to set a policy and procedural framework to demonstrate how the Town of Derry will continuously work to improve winter maintenance operations while effectively and efficiently using road salt during snow and ice removal operations. New practices contained within this plan are intended to reduce the amount of road salt applied by the Town thus working towards meeting the Town's allocation of the required TMDL load reductions while continuing to meet town level of service (LOS).

Derry will provide winter maintenance to ensure the designated LOS to roadways, parking lots and sidewalks is maintained according to applicable state and local legislation while striving to minimize adverse impacts to the environment. These commitments will be met by:

- Adhering to the procedures contained within this Salt Reduction Plan;
- Committing to ongoing winter maintenance staff training and education;
- Reporting fiscal year salt use data to the NH DES
- Re-evaluating the effectiveness of the Salt Reduction Plan as needed to incorporate new cost-effective technologies or changes in procedures.

The SRP is meant to be dynamic to allow the municipality to evaluate and phase-in any changes, new approaches and technologies in winter maintenance activities in a fiscally sound manner.

To reduce the financial burden on municipal tax payers the town will participate in the I-93 Watersheds municipal salt reduction program developed in 2008 by the NH Department of Transportation in cooperation with the Federal Highway Administration. The program will administer a reimbursement process to assist towns with implementing TMDL load reductions. This SRP has been prepared in partial fulfillment of program requirements to address TMDL chloride load reductions.

3.0 Winter Maintenance Overview

Derry is responsible for winter maintenance on various roads and parking lots within the watershed and winter maintenance involves numerous activities, not all of which involve snow clearing or deicing. The summary below provides detail on paved surface maintained, material usage, application rates, and level of service policy. The major activities related to winter maintenance are:

Table 1: Winter Maintenance Activities

Snow Plowing	Snow Storage
Salt/Sand Spreading	Sidewalk Plowing & De-icing
Salt & Sand Storage	Install Hydrant Flags, Hydrant Clearing
Snow & Ice Removal	Drainage Clearing

The Town of Derry currently maintains 160.81⁴ miles of public roads town-wide, and 14.4 acres of parking lots. Town-maintained parking lots include: town municipal offices, Derry Library, Derry Fire Dept., Derry Police Dept. Derry Transfer Station, Derry recreational parks, and a few public lots. All of the parking lots are located within the watershed, however approximately 66% of roads are within the watershed.

Table 2: Town-Wide Road Mileage Summary

Road Classification	Average Daily Traffic	Typical Road Width	Number of Lane Miles
Arterial	3,000 +	24' – 36'	56.6
Collector	1,000 – 3,000	22' – 24'	63.2
Access Street	< 500	18' – 20'	210

Note: Road classifications per NHOEP (<http://www.nh.gov/oep/resource/library/documents/12-roads.pdf>)

Derry roads have been classified based on the average daily traffic and maintainer in order that LOS can be set for each classification of road. It should be noted that the LOS policy has remained consistent throughout the TMDL process. During snow and ice events, the LOS and operating procedures constantly change depending on numerous factors, all of which change depending on forecasts, projected road conditions, and the actual conditions observed. Some of the factors that affect the Town's LOS and OP include but are not limited to observed and anticipated precipitation rates, regular forecasts of snowfall and temperature changes throughout the storm, projected post-storm forecast (warm-up or deep freeze), time of day (solar assistance), and locality (hills or high traffic intersections). Derry also does not apply salt each time that plows are out and does not apply salt on unpaved roads. The Town's Snow and Ice Control Policy is included in Appendix B. Also included are select pages to the Town of Derry Winter Operations Booklet which is updated annually. Some pages are omitted as they include operators personal information (names and home phone numbers) which are subject to frequent changes.

Table 3: Summarized Level of Service Policy

Arterial Roads	Full width bare pavement as soon as practical after storm event terminates.
Collector Streets	Full width bare pavement as soon as practical after storm event terminates.
Access Streets	Full width bare pavement as soon as practical after storm event terminates.

Materials used in winter maintenance vary annually and are a function of winter weather severity. The table below provides an overview of average material usage. A detailed 10 year average is provided within Appendix C. The 10 year average is used to evaluate salt usage to normalize the effects of more and less severe winters. NHDOT analysis has found that a 10 year average is approximately equal to the Weather Severity Index (WSI) normalized average.

Table 4: Annual Town Wide Material Usage Summary (last 2 fiscal years)

Material	2014/2015	2015/2016	10 Year Average
Solids			
Rock Salt (NaCl)	5200 Tons	4200 Tons	3977 Tons

Table 5: Beaver Brook Watershed Usage

Material	2014/2015	2015/2016	10 Year Average
Solids			
Rock Salt (NaCl)	3772 Tons	3432 Tons	2625 Tons

Current application rates town wide are set at approximately 300 lb/lane mile (± 50 lb). The material applied varies from a 100% salt application to a 20-25% Salt/Sand Mix. Town-wide plow route maps are included in Appendix D.

4.0 Proposed Best Management Practices (BMPs)

4.1 Previous (Rounds 1-3) Best Management Practices Summary

Derry has demonstrated an ongoing commitment to salt reduction in several key areas

Equipment: Derry has participated in each round of federal funding for salt reduction. It has purchased a total of five (5) salt reducing plow trucks with pre-wetting sprayers, groundspeed controls, pavement temperature sensors, and instituted a calibration program to ensure accurate application.

Training: All Derry municipal operators have been trained in the Green Snow Pro Program offered by the UNH Technology Transfer Center, and the municipality regularly hosts the training in its municipal center on Manning Street. Derry Officials also supported the passage of the Voluntary Certified Salt Applicator law each time it was presented to the legislature.

Public Outreach: The town has filmed and broadcasted plow truck ride-alongs on its public access television station. It has also provided ride-alongs for the DES Salt Reduction Coordinator. Additionally Derry public television also interviewed DES and UNH salt reduction experts during a segment about the chloride contamination issues in Beaver Brook.

Total Estimated Planned reductions from rounds 1-3 are summarized below:

Table 6: Summarized Estimated Reductions from rounds 1-3

Watershed	Existing Imports⁵	Estimated Reduction	Estimated Reduction	Estimated Reduced Imports	TMDL Allocation
	<i>Tons/Year</i>	<i>Percent</i>	<i>Tons/Year</i>	<i>Tons/Year</i>	<i>Tons/Year</i>
Beaver Brook	2705.05	18%	486.91	2,218.14	2,264.4

4.2 Optional Equipment Upgrade Automatic Vehicle Location

The town proposed to equip several vehicles that operate within Beaver Brook with Automatic Vehicle Location (AVL) technology. This optional BMP installation was proposed subject to available town funding, availability of federal funding match, a review by NHDES of recent chloride monitoring results, and the necessity of additional salt reduction BMPs. Due to significant salt reductions realized and improvements in surface water quality, this BMP is on hold indefinitely.

This technology will allow the town to track the amount of salt applied on each of the salt routes dynamically. It will also log the amount of salt applied in a central database so that

⁵ per 10 year average from Round 1

town staff can analyze application rates per route and storm for further optimization.

The system will also feature an in cab display where operators can view a 90 minute trail of the position of other plow vehicles. By viewing this trail operators will be able to stop spreading de-icing chemical in areas where they overlap with other plow trucks. Studies suggest that because Derry is somewhat rural the town is estimating only a 4% reduction due to implementation of this technology.

Table 7: AVL Estimated Reductions for Optional Round 4

Watershed	Existing Imports⁶	Estimated Reduction	Estimated Reduction	Estimated Reduced Imports	TMDL Allocation
	<i>Tons/Year</i>	<i>Percent</i>	<i>Tons/Year</i>	<i>Tons/Year</i>	<i>Tons/Year</i>
Beaver Brook	2,625	4%	105	2,520	2264.4

5.0 Implementation Timeline

The purchase and implementation have been placed on hold indefinitely due observed improvements in chloride concentrations in Beaver Brook and realized reductions in salt imports to the watershed.

⁶ Using Current 10 year average

6.0 Salt Usage Evaluation & Monitoring

Derry continues to monitor its salt usage with respect to TMDL compliance. Derry is committed to a multi-year program of efforts and operational modifications that would result in salt reduction with the goal of meeting TMDL load allocation requirements. It is anticipated that salt usage data will be compiled throughout the winter and be summarized and analyzed during the spring. Data will be provided to state agencies on an annual basis, and will be used in future salt reduction plans. Salt usage data will be substantiated with documentation such as invoices, cancelled checks, purchase orders, and or delivery receipts and be provided in total annual usage format based on fiscal/seasonal year on town letterhead.

DES proposes TMDL compliance will be measured using a 10 year average and confidence intervals as currently described in a DRAFT document titled “TMDL IMPLEMENTATION PLAN CONSIDERATIONS” dated April 15, 2010 prepared by NHDES and is included in Appendix E. This document is subject to change following additional Salt Reduction Workgroup discussions.

It is noted that determination of TMDL compliance hinges upon 1) monitoring conducted by DES at the compliance points and 2) DES providing Derry with compliance point monitoring data in a timely manner as it becomes available.

7.0 Summary

The town commits to providing a written report and oral presentation to the salt reduction workgroup. The town is committing to reducing its chloride imports into the Beaver Brook Watershed by implementing the BMP's contained herein.

APPENDIX A

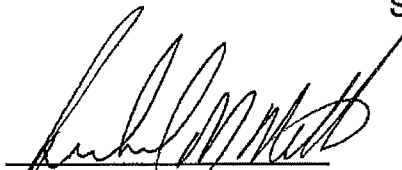
Municipal Resolution

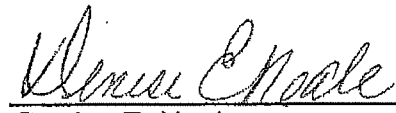
TOWN OF DERRY

Certificate

The Derry Town Council, after a duly noticed public hearing held on Tuesday, January 5, 2010, approved by a vote of 7-0-0, that the Derry Town Council authorize the Town Administrator to generate the Salt Management Plan for the purpose of supporting chloride reduction in the 1-93 Corridor.

See attached Resolution


Richard Metts, Chair
Derry Town Council


Denise E. Neale
Town Clerk

Received and Recorded Jan 7, 2010

RESOLUTION

The Town Council of Derry, New Hampshire

A resolution expressing the Town Council's commitment to reduce salt loading in impaired watersheds in the Interstate 93 Corridor

WHEREAS: Beaver Brook does not meet water quality standards for chloride; and,

WHEREAS: The Total Maximum Daily Load (TMDL) studies show that municipal road salt application must be reduced to meet water quality standards; and,

WHEREAS: The I-93 Corridor municipalities, private transportation facility managers, and the Department of Transportation are working together as the I-93 Salt Reduction Work Group to collectively reduce road salt application to Impaired watersheds

THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF DERRY, that the Town commits to reduce municipal application of road salt and to work with the New Hampshire Department of Transportation, the New Hampshire Department of Environmental Services and private salt applicators to reduce chloride loading to impaired watershed in the I-93 Corridor.

This resolution does not bind the town to any specific salt reduction technique.

The foregoing resolution was duly passed and adopted by the Derry Town Council this 5 day of January, 2010


Richard M. Metts, Chair
Town Council

ATTEST:


Denise Chesle
Town Clerk

SECTOR ALLOCATION AGREEMENT

Date: April 4, 2011

Re: Revised Beaver Brook Sector Allocation

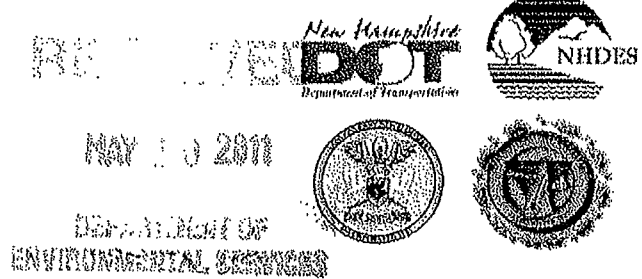
Summary:

Pursuant to the sector allocation meeting of October 15, 2010 this agreement has been drafted to define the commitments of each party specifically with respect to private sector outreach.

Municipal Commitment: Derry and Londonderry (TOWNS) did not alter their TMDL sector allocations. The TOWNS reaffirm the private sector outreach efforts detailed in their salt reduction plans, including directly contacting private parking lot owners in the respective towns to inform them about certification and training opportunities provided through the University of New Hampshire Technology Transfer Center. Such communication will be provided annually.

DOT Commitment: An additional 244.7 tons was reallocated from the private sector to the State maintained (NHDOT) sector. It is agreed that this redistribution is reasonable as there is the potential for significant reductions within the private sector with a concerted team effort. NHDOT will continue to provide outreach to private parking lot owners and maintainers on the use of liquids for winter maintenance. Such outreach will include demonstrations at NHDOT park and ride lots in the southern I-93 corridor and reporting of the results of such demonstrations. NHDOT will co-sign letters to the local chambers of commerce promoting private sector certification and training on an annual basis.

Resulting Allocation: The following table details the agreed upon allocations per the sector allocation on October 15, 2010.



Beaver Brook NEW** TMDL Allocations

Source	Agency	FY08 Salt Imports (tons salt/yr)	Allocation of Loads (tons salt/yr)	Total Allocation
State Roads	NHDOT PS 508	126.7	97.92	1145.3
	NHDOT PS 512	375.4	290.33	
	NHDOT PS 513	124.3	96.14	
	NHDOT PS 514	187.4	144.97	
	NHDOT PS 528	667.2	515.93	
Municipal Roads	Auburn	12.0	7.3	2,983.6
	Chester	67.6	41.1	
	Derry	3,643.6	2,215.8	
	Londonderry	1,183.0	719.4	
Private Roads	Chester	23.9	14.5	316.4
	Derry	349.3	212.4	
	Londonderry	147.1	89.5	
Parking Lots	Derry	3,617.8	2,043.8	3,200
	Londonderry	2,046.6	1,156.2	
Salt Piles	Derry	0.3	0.0	0.0
	Londonderry	1.3	0.0	0.0
Water Softeners	NA	272.3	272.3	272.3
Food Waste	NA	149.5	149.5	149.5
Atmospheric Deposition	NA	95.1	95.1	95.1
Margin of Safety	NA		906.9	906.9
Total		13,090.3	9,069.2	9,069.2

Acceptance:

By signing this Sector Allocation Agreement the parties agree to perform the outlined outreach efforts, and agree to accept the revised sector allocations until such a time as they are amended with consent of all parties and approval of the Salt Reduction Work Group.

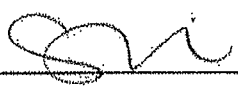
For NHDOT:



William J. Cass, P.E.
Director of Project Development
NHDOT

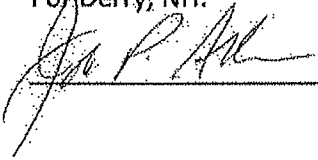
Date: 4/15/11

For NHDES:



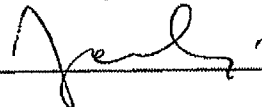
Date: 4/20/11

For Derry, NH:



Date: 4/27/11

For Londonderry, NH:



Date: 5-10-2011

APPENDIX B
Derry Snow and Ice Policy
And
Winter Operations Booklet

**TOWN OF DERRY
DEPARTMENT OF PUBLIC WORKS
WINTER MAINTENANCE
SNOW AND ICE CONTROL POLICY**



MARCH 1999
(Revised October 2007)

Michael Fowler, P.E.
Director

Alan R. Cote
Supt. of Operations

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RESOLUTION

BE IT RESOLVED that the Town Council of the Town of Derry adopt the following statement of policy regarding winter snow and ice operations:

- 1) NOT WITHSTANDING the circumstances involved with changing climatic conditions, the Town will endeavor to keep Town roads and designated walkways in a reasonably safe condition for travelers and
- 2) Town employees will endeavor to exercise reasonable care and diligence in the performance of their duties, consistent with the intent of the current Town of Derry Department of Public Works Snow and Ice Manual and Procedures and
- 3) Travelers who use Town roads and designated walkways are expected to demonstrate due care and reasonable caution, especially under adverse winter conditions.

Executed at Derry, this _____ day of _____ 1999.

Carol M. Granfield, Town Administrator

Alan G. Swan P.E., Director

Craig Bulkley , Council Chairperson

II. RESOURCES AVAILABLE

The Town of Derry has the following resources available to it in its winter operations: (See appendices for detailed listing.)

A. Weather information

Local Radio: WOKQ 97.5 FM

WZID 95.7 FM

Local T.V. WMUR CH 9

Cable T.V. NECN

Weather Channel

B. Personnel (see appendix A)

The Town D.P.W. has ten truck drivers, two equipment operators and three mechanics, and a road foreman available for normal storm responses. This includes personnel from Highway, Water, and Wastewater divisions. Additional manpower is available in the Parks, Buildings and Grounds and Solid Waste divisions.

Personnel are called in and assigned to work by the Supt. of Operations or “on call” foreman. Normally the truck drivers are assigned to their specific routes. An equipment operator loads trucks and the drivers not holding a commercial drivers license (C.D.L.) drive small trucks on assigned routes. Supervision is provided by the Director and/or Supt. of Operations during normal working hours and by the Supt. of Operations and/or “on-call” foreman during off hours. The Director provides supervision during off duty storms as needed depending on the severity of the storm.

C. Equipment:

The Town has available 7 “front line” dump trucks (3 ten wheelers, and 4 six wheelers equipped with hydraulic sanders, eleven foot bull plows, and eight foot

wing plows; one “low profile” dump truck, two one tons with wing plows, and several one tons and pickup trucks. The Town supplements its forces with contracted equipment including 33,000 GVW six wheelers with sanders and plows, one tons, pickup trucks, and loader/back hoes with plows from private contractors. Three pickup trucks are also available from the parks department to plow parking lots.

One 3 C.Y. loader is garaged at the Town Garage and is used to load trucks and plow the garage area. Another 3 C.Y. loader used at the transfer station is used as a backup to load trucks. This piece of equipment is also used to pull out trucks that are stuck and to plow parking lots.

The Town has three Trackless (articulated) sidewalk machines equipped with plows and snow blowers for large accumulations of snow. These machines are used to clear sidewalks.

D. Materials

Sand is purchased from a Town bid sand supplier and is stockpiled at the Town Garage. Approximately 1000 C.Y. are used each year. Sand is used as an abrasive for immediate traction but is not effective in melting ice.

Sodium Chloride (Salt) is purchased through a consortium bid. The Town will use approximately 3800 tons of salt in a normal winter. The Town strives to keep the salt shed as close to full as possible. The salt stock is replenished after each storm when possible. This is done to ensure a continuous supply of salt in the event of long duration storms or an inability to get salt for an extended period of time. Salt is most effective for melting purposes at temperatures above 20 degrees Fahrenheit, becoming slower acting as the temperature drops.

Calcium chloride flake is purchased in 100# Bags to mix with salt in trucks when temperatures drop below 6 degrees Fahrenheit and is expected to stay that cold for more than two days. This material is mixed manually adding about 200# to a six ton load of salt. Calcium chloride is used to activate the rock salt. If it is

judged to be excessively cold and salt will be ineffective straight sand may be applied to try to offer traction with grit.

III. OPERATIONS:

A. General:

Winter weather in northern New England is difficult to predict. There are many variables affecting winter maintenance operations such as type of precipitation, air temperature and pavement temperature, traffic, wind, time of day, and day of week.

The Public Works Department's snow removal and ice control policy has been based for many years on the goal of obtaining bare and dry pavements at the earliest practical time following the cessation of a storm. It is virtually impossible to provide bare pavement during a winter storm and the Public Works Department does not attempt to do so.

Traffic volume and speed are the primary factors in determining the level of winter maintenance service (effort) with gradient also being an important factor. Therefore, the principal arterials including West Broadway, East Broadway, North Main Street, South Main Street, Chester Road, East Derry Road, Crystal Ave., Birch Street, Rockingham Road, Tsienneto Road, and Pinkerton Street as well as other heavily traveled roadways are maintained in such a manner that bare pavement is produced as soon as possible after termination of a storm. On other town roadways, the Public Works Department attempts to provide some bare pavement, but not necessarily shoulder to shoulder, within a day or two of the storm's end.

It is impractical to develop specific rules on winter maintenance operations. Due to numerous variables involved in winter storms, the judgement of the on-call foreman, the Supt. of Operations, or the Public Works Director governs the

quantities and type of material used to control snow and ice. In general, the purpose of salt is to (1) reduce adherence of snow to the pavement, (2) keep snow in a “mealy” condition and thereby permit nearly full removal by plowing, and, (3) prevent the formation of ice or snow ice (hardpack). Salt is not intended to eliminate the need for snow plows. Sand treated with chlorides to prevent freezing in stock piles is used when temperatures become too cold for salt to activate, around Beaver Lake and Island Pond, and on gravel roads.

The Derry Public Works Department has the responsibility for maintaining essential services on over 160 miles of Town roadways, of which 2% are gravel and 98% are paved. A significant portion of the Department’s overall efforts is directed towards maintaining the essential transportation services during periods of high precipitation, low temperatures, and heavy winds.

The Public Works Director has direct responsibility for daily operation of the Department, acting under the general direction of the Town Administrator. The Supt. of Operations supervises the day to day operations of the highway department. Appendix A contains an organizational chart identifying Department positions and individuals.

B. Applications

1. Application of De-Icing Materials

The use of chemicals, abrasives, or chemical-abrasive mixtures is dependent not only on present roadway and weather conditions, but also on anticipated changes in these conditions and fiscal constraints experienced by the Public Works Department. The effects of peak traffic periods, approaching nightfall or

daybreak, predicted temperature changes, and end of storm, are considered and evaluated prior to selecting the proper materials or rate of application.

Adverse roadway conditions existing during periods of low temperatures which are predicted to rise would generally be treated in accordance with the recommendations for the higher temperature. If the time of day, trend and weather forecast is such that a drop in temperature may reasonably be expected, treatment would generally be for the lower temperature. Neither chemicals nor abrasives should be used at low temperatures if the pavement is dry and snow is blowing off the pavement.

Generally straight sodium chloride is the chemical of choice for most storm situations. Sodium Chloride is used to prevent snow and ice build-up on the pavement and to aid removal of any build-up that occurs.

The recommended guideline to adequately maintain highways is 300 lbs. per lane mile.

For exceptionally high volume roads where traffic will enhance the action of salt, this rate may be decreased to 200 lbs. per lane mile.

Abrasive –chemical mix may be needed at extremely low temperatures or on very lightly traveled roadways.

Chemicals are generally applied to the middle 1/3 of pavement width and on high side of bank curves. Spread width may be increased or decreased depending on action of traffic. Materials are applied early in the storm s that brine develops on the pavement and prevents build-up of packed snow. If snow continues and accumulates on the pavement plowing should continue. At the end of the storm when all roadways have been plowed, an additional treatment of salt and /or abrasives may be applied if deemed necessary.

There are many additional circumstances which will necessitate modifications to these treatments. Some circumstances are:

- Rising or Falling temperatures
- When pavement is cold and dry and dry snow is falling, chemicals may not be applied. Plowing and treatment of icy spots, if they develop is recommended.
- An abrasive and chemical mix may be needed at extremely low temperatures or on very lightly travelled roadways. Under these conditions the effectiveness of salt is reduced and abrasives may be needed for traction.

Spreading Practices

Each spreading unit should be calibrated each year prior to the winter season to insure that selected rates of application are attained. Timing of the initial application during each storm is very critical. It should be delayed until there is sufficient accumulation on the pavement to hold and contain the material spread. However, the pavement may become glazed prior to this time and may require an earlier treatment.

Portions of the town are peculiar due to various physical conditions and will require a greater application rate or an additional application during some storms. However, these areas should be judged and treated separately and not used as a barometer to evaluate and subsequently direct complete applications over the entire town. In order to conduct efficient operation, periodic observation of the pavement surface conditions must be performed.

Width of material spread (throw plus roll) should be restricted. Reduction of the spread width by windrowing chlorides will increase the concentration of the

chemical where it is needed and therefore increase the effectiveness of the application. Spreading operations should generally be conducted at speeds less than 25 mph. Air turbulence created at speeds in excess of 25 mph makes it difficult to retain all the material discharged within the desired width. Spinner and belt speeds and spread pattern must be adjusted to obtain the correct spread rate and to retain the material within the lane(s) where additional material is required.

Plowing Operations

Plowing operations are generally initiated after two inches of snow has fallen and continues until the storm has ended. In some cases of long duration storms plowing may be suspended in order to allow drivers to go home and get some sleep. Widening and intersection view clearing is performed following the storm and generally during daylight hours when best visibility prevails.

For snowstorms with a predicted accumulation in excess of two inches, plowing usually begins after the initial salt application has formed a brine and after two inches of snow has fallen (dependent on the intensity of the snowfall) and continues for the duration of the storm. Following plowing operations a light salt application to remove remaining residue may be appropriate.

For light accumulation snowfalls, snow squalls, and so-called “Alberta Clippers” of short duration, plowing may begin immediately and may include simultaneous salting and /or sanding to provide desired results quickly and efficiently.

Truck mounted front plows and in some cases wing plows are utilized to clear roadways of frozen precipitant. Storm intensity generally measured in inches per hour varies considerably in New Hampshire but average major snow storms are approximately one inch per hour. This one inch per hour intensity rate and the allowable snow accumulation is used in planning the availability of equipment

necessary for snow plow operations. The planned allowable snow accumulation on most roads in town is 3 ½ inches with a maximum allowable accumulation of 6 inches and a planned plowing frequency of 3 ½ hours. On some of the principal arterials the planned allowable snow accumulation is 2 ½ inches with a maximum allowable accumulation of 5 inches and a planned plowing frequency of 2 ½ hours. These above mentioned figures are based on an average of 1" per hour under optimum conditions (i.e., no traffic tie ups due to accidents or stuck vehicles and no equipment breakdowns. The maximum allowable depth of snow that a motorist may encounter on highway pavements does not include blizzard conditions or heavy wind and drifting conditions.

Frozen precipitation including sleet and the build up of ice caused by freezing rain are special situations and are not subject to the procedures indicated above. When a changeover from snow or sleet to freezing rain is predicted or anticipated, snow and/or sleet is left on the pavement to capture the freezing thereby preventing a glare ice situation, which without question is the most treacherous condition that occurs on highways.

Judgment based on experience is essential in conducting and timing remedial work to overcome ice and snow hazards. Each storm situation varies, so therefore it must be emphasized that these (general) guidelines are strictly advisory which in no way restricts the freedom of judgement exercised by the On-call Foreman, Supt. of Operations, or Public Works Director.

C. Communications:

1.) Prior to Storm

The Director, Supt. of Operations, On-call Foreman, and Chief Mechanic communicate prior to the storm to determine the level of readiness and probable initiation of snow and ice control operations. The Director and Supt. of Operations utilize the various weather forecasting sources available, as well as

communications from Local Police and School Officials. Normally, the Supt. of Operations monitors the onset of the storm or ice conditions via telephone and Town radio with the Director, Foreman, and Police personnel as appropriate.

2.) Onset of Storm:

Phone or Town radio communications are utilized as the Director and Supt. of Operations make the decision to initiate the Department's response or receive word from the Police Dept. or Fire Dept. that a response may be necessary. Calls to the Director, "On-call Foreman", Police, School Officials, or other highway departments are made as required. Normally the Director and the Supt. of Operations communicate at the storm onset to verify the initial Department response.

The Director, Supt. of Operations, Foreman, or their designee then calls in the response team as required according to procedures.

3.) During Storm Operations

Radio communication is maintained with all response vehicles at least every hour. Special instructions and requests for service are taken via telephone or radio at the Highway garage or D.P.W. office and relayed via radio to appropriate responding personnel. All such requests are logged and transmitted by radio to the Supt. of Operations or Foreman as required. The Supt. of Operations or Foreman will dispatch personnel and equipment when they become available or immediately if it is deemed to be an emergency. The Director or Supt. of Operations or designee will determine the extent of the emergency.

All communications, telephone or radio, with the Director, Supt. of Operations, School Administrators, Bus Managers, Police, and Fire continue at appropriate intervals during the storm.

A log of all incoming calls and response actions is maintained in the Public Works office or garage. Any problems with communications or communications equipment should be noted in the log.

4.) Wrap Up After The Storm

At the close of the snow/ice operations the Supt. of Operations, Director, and On-call Foreman notify each other via telephone or radio that operations are ended and:

- a. Where each supervisor will be for follow up communications.
- b. Who is available for follow up actions and investigations.
- c. The status of equipment, i.e., any major equipment that is down, whether trucks are loaded or not etc.
- d. The status of responding personnel i.e., who is next for call-in, supervision, etc.
- e. Any potential weather related problems to monitor, i.e., drifting snow, icing conditions, etc.

Following the storm-generally on the following day, the storm log is reviewed by the Director, Supt. of Operations, Foreman, and Lead Mechanic as appropriate and required actions or repairs are initiated. Following this, a meeting with the response team should be held to review the storm log and any problems that have occurred.

D. Storm Log

Beginning with the arrival of the Supt. of Operations or responding supervisor at the town garage, a storm log is initiated and kept through the storm event to note all communications, conditions, major events, and requests for service received.

At a minimum, the following information is noted on the log with the time of occurrence:

- a. Time each responding piece of equipment begins operation.

- b. Weather conditions, snow accumulations and temperature on an hourly basis.
- c. Radio checks with responding vehicles on an hourly basis.
- d. Driver rest periods (on and off air) .
- e. Any reported problems from drivers or operators including equipment failure.
- f. Time equipment is down and time that equipment is back in service.
- g. Supervisors' comments on storm progress and progress of department operations.
- h. Report on accidents and special situations, especially Police calls.

E. Response Teams

Department responses will vary with the conditions encountered, personnel, who are available for work, the time of day and day of week, the temperatures, overall road conditions, preceding weather, anticipated weather, etc.

All things being equal, the Department response teams are as follows:

1.) Spot Salting

The on-call team (three men) will be called in. The on-call foreman will determine whether additional help is needed to cover the icy spots than his team. If necessary he can contact the Highway Coordinator for advice as to whether or not to call in additional help. If additional help is needed, the overtime rotation list is utilized to determine who will be called in to duty.

2.) Salting

When conditions warrant all routes will be salted, all town sanders and all contractors' sanders will be called in to duty. The on-call foreman will run the

operation at this time from the Garage and will only go out on a truck if sufficient drivers can not be located.

3.) Normal Winter Storms

Response to normal winter storms will vary with the storm. Generally, a storm will progress from salting operation to plowing when snow accumulations reach about 2 inches. Response teams will vary from minimum manning to full crew depending on the rate of snow, anticipated conditions, equipment breakdowns, time of day, etc. The Supt. of Operations will be called in to determine when to start plowing and supervise operations.

4.) Blizzard Conditions

Generally, blizzards develop rather than being predicted. When heavy snow and high winds are encountered, all Department personnel may be called to assist in clearing snow from roads and town facilities. A secretary will usually be asked to work answering phone calls and act as a facilitator. All Town personnel must be available if the Director declares an emergency.

F.) Blowing and Drifting Snow

Quite often after a cold, dry snowstorm, blowing and drifting snow will begin to drift across roadways creating hazardous travel conditions.

Areas that are generally prone to drifting include:

Tsienneto Road	Humphrey Road
Folsom Road (near the police dept.)	West View Drive
Old Auburn Road	Kilrea Road
Island Pond Road (near Warner Hill Road)	Damren Road
Pingree Hill Road (near Ledgewood Drive)	Walnut Hill Road
A Street	B Street
English Range Road	Adams Pond Road

G. Towing

Often during snow removal operations, stranded vehicles will be encountered on Town roads. When a car is on a Town road in such a condition, it may be towed under the Town's winter parking ban/ordinance. (See appendix E)

Procedures for having a car towed are as follows:

- Operating personnel call the garage base station who notify the Derry Police at 432-6111. The make of the car, the plate number, and location are given.
- Persons contacting the Public Works Department to retrieve their car after a storm are referred to the Derry Police Department at 432-6111.

H. Post Storm Operations

After a storm event or during periods of lessened storm activity, a number of operations take place to ensure readiness for subsequent winter operations.

1. Equipment inspected using preventative maintenance techniques and repairs made as necessary. Special attention is given to tires, brakes, snowplows and sanders including shoes, bearings, spinners, and hydraulic feed systems.
2. Materials, especially salt, are reordered in order to insure adequate stockpile.
3. Plow routes are driven and checked for identification of problems, especially illegal plowing by driveway contractors, problem mailboxes, snow castles, etc. It is the responsibility of the route driver to identify these problems and report them to their supervisor.
4. It is important to push back snow on road shoulders following each major storm and to clear critical areas to make room for future storage. If the snow

bank height becomes excessive, the top of banks are cut down for proper visibility or future snow storage. If the snow is allowed to melt in place and refreeze, the result is a heavily compacted mass which can not be moved without considerable efforts by snow plows. Therefore, pushing back is an ongoing function which is addressed as soon as the storm subsides and the amount of stockpiled snow dictates that pushing back is needed.

5. The Town begins snow removal (hauling away) when there becomes a need to create storage space for snow and will be done under the following priority list:

Major intersections where sight distance is impaired.

West Broadway from Horne Brook to Merchants Row.

East Broadway from Merchants Row to Derry Public Library.

Crystal Ave. from East Broadway to Ross's Corner.

Birch Street from East Broadway to Beaver Brook.

Folsom Road

Central Street

South Ave.

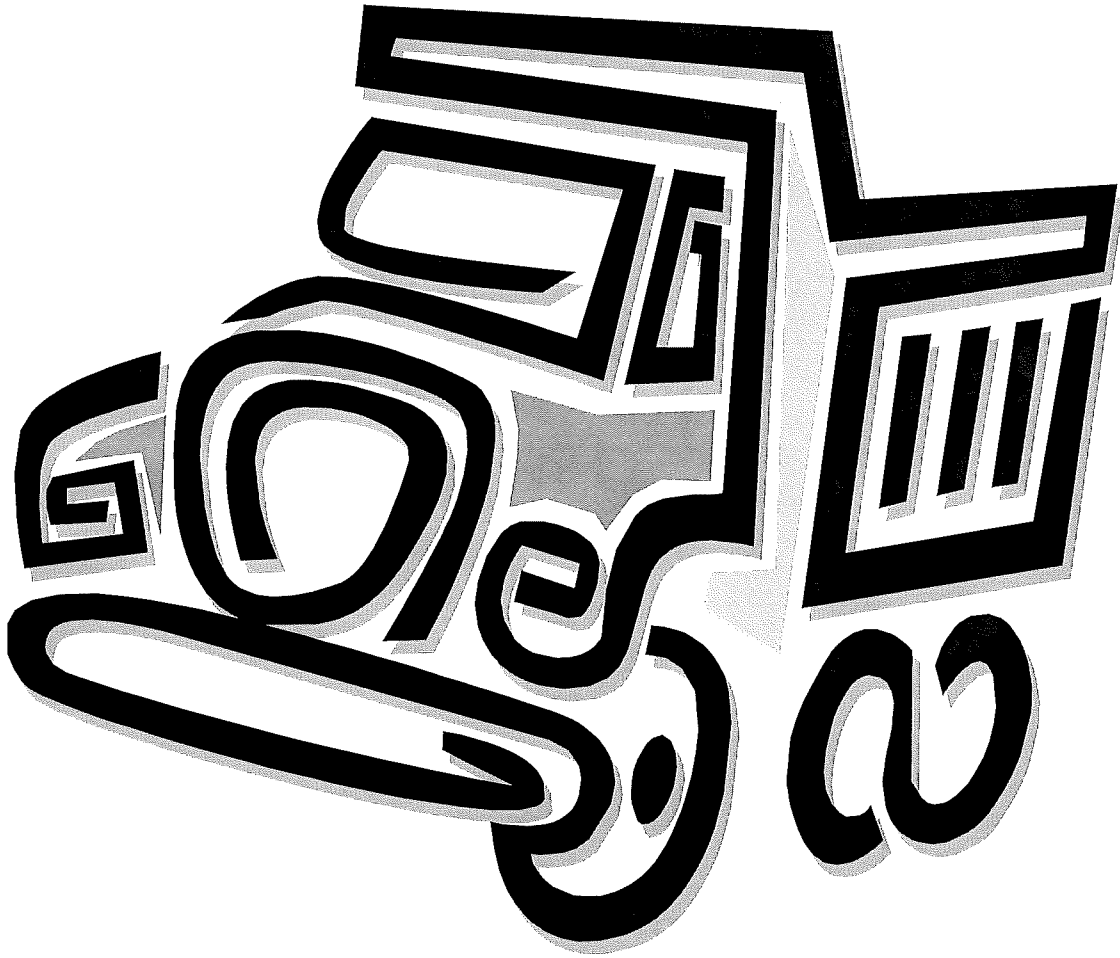
IV. Public Information

Town residents are advised prior to each winter season of the Town's overnight parking ordinance, mailbox policy, winter safety tips, etc.

In addition, the local media is used to inform residents of particular problems encountered during the winter such as ice pack, drifts, and other unusual circumstances encountered from time to time during the winter.

Finally, the Town's Emergency Management System may be utilized during the winter emergencies.

TOWN OF DERRY



WINTER OPERATIONS BOOKLET

2017-2018

CONTRACTORS SNOW PLOW LIST 2017-2018

COMPANY	PHONE #	EQUIPMENT
[REDACTED]	4[REDACTED] Office 9-4pm 2[REDACTED] Home (Bryant) 2[REDACTED] Cell 2[REDACTED] Cell 2[REDACTED] Cell 7[REDACTED] (Salter) 6[REDACTED] (Salter)	1 – 5 Ton Plow w/salter 2 – Dodge Rams - ¾ ton Trks 1 – JD Backhoe 310 1 –Hyundai Loader HL760-9 1 – Chevy - ¾ ton Trk
[REDACTED]S ([REDACTED]s)	603-845-0 Home (1) [REDACTED] Office (2) [REDACTED]	1 – Ford F250
[REDACTED]	8[REDACTED] Home 603-845-0 Office [REDACTED] Cell #	1 - Chevy Pickup 3 – International 5 Ton DT466E
[REDACTED] BROWN CONST.	[REDACTED] H 3[REDACTED] C	3 – 6 Wheeler Intl
[REDACTED]	[REDACTED] C	1 – Dodge RAM
[REDACTED] G	[REDACTED]	1 Chevy Pkup

PLOW VEHICLE CALL NUMBERS 2017/2018

Plow Route Assignment	Veh #/ Vehicle	Driver	Salter
1 - Overledge, Hemlock Springs	575	[REDACTED]	Y
2 - Scobie Pond, By-Pass West	Rich Brown #2		Y
4 - Barkland Acres, Linlew Dr	606	[REDACTED]	Y
5 - Hillside Ave, Folsom Rd	Remi 1 Ton/590	[REDACTED]	
6 - Derry Village, Hood, Lenox	624/618/Todd Tree	[REDACTED]	
7 - Aiken, South Ave, Highland	629/B Searles 1 ton & PU	[REDACTED]	
8 - Nortonville, Franklin St	624/AEC Backhoe	[REDACTED]	
9 - Quail Hill, Bowers, Kendall Pd	Remi Loader		
10 - Montgomery Farms	Remi-5 Ton/Pick Up	[REDACTED]	Y
11 - Conley/Escumbuit/Collette's	634	[REDACTED]	
12 - Windham Depot, Frost Rd	Rob Brown 5 ton #2		Y
13 - Sunset Acres, Maple Hills	Rob Brown 5 ton #3		Y
14 - Fairways, Lane Rd, Cemetery	625	[REDACTED]	Y
15 - Kilrea Rd, Goodhue Rd	607	[REDACTED]	Y
16 - Island Pond Rd, Drew Rd	574	[REDACTED]	Y
17 - Meadowbrook, Spollette Dr	Rob Brown 5 ton #1	[REDACTED]	Y
18 - Warner Hill Rd, Village Brk	605	[REDACTED]	Y
19 - Walnut Hill, Damren, Back Chester	Rich Brown 5 ton	[REDACTED]	Y
20 - Old Auburn, English Range Rd	577	[REDACTED]	Y
21 - Rainbow Lake	622	[REDACTED]	
22 - Beaver Lake	Remi-1 ton/Backhoe	[REDACTED]	
23 - Downtown	535	[REDACTED]	Y
24 - Stark Rd, Woodlands	651	[REDACTED]	Y

Spare Trucks 622 - Wastewater * - One ton cleanup of corner Routes 17 & 19 - Veh 554
 Spare Trucks 594 & 621 - Vehicle Maint. ** - One ton cleanup of corners Routes 9 & 13 - Veh 532

Parking Lots	548	[REDACTED]	
	Backhoe w/push box	[REDACTED]	
Gerrish CC, DPL, Taylor Lib and AC	532	[REDACTED]	
Wall St, DMC, Abbott Cr, Merchants Row - Downtown Clean Up - Trucks 601/557A -		[REDACTED]	
Police Dept & Central Fire Station	628	[REDACTED]	

CONTRACTORS SALTER LIST 2017-2018

COMPANY	PHONE #	EQUIPMENT
[REDACTED]	[REDACTED] Office 9-4pm [REDACTED] Home (Bryan) [REDACTED] Andy (Salter)	2 – 5 Ton Plow w/Salter
[REDACTED]	[REDACTED] H [REDACTED] C	1 – 6 Wheeler Intl
[REDACTED]	[REDACTED] Home [REDACTED] Office [REDACTED] Cell	1 - Chevy Pickup 1 – International 5 Ton DT466E

SALT VEHICLE CALL NUMBERS 2017/2018

Salt Route Assignment	Veh #/Vehicle	Driver
1 – Old Auburn, English Range, Off Chester RD	577	[REDACTED]
2 – Montgomery Farms & Derryfield Rd	[REDACTED]	[REDACTED]
3 – Windham Depot, Frost Rd	[REDACTED] #2	Contractor
4 – Warner Hill Rd, Village Brook	605	[REDACTED]
5 – Rainbow Lake, Beaver Lake, Collette's (SAND)	626	[REDACTED]
6 – Kilrea & Gulf Rd	607	[REDACTED]
7 – Upper By-Pass 28, Pingree Hill Rd	575	[REDACTED]
8 – Downtown West, Sunset Aceas	[REDACTED] #3	[REDACTED]
9 – Walnut Hill, Damren, Back Chester Rd	[REDACTED] #1	[REDACTED]
10 – Island Pond Rd, Drew Rd	574	[REDACTED]
11 – Derry Village & off Hampstead Rd	[REDACTED] #1	Contractor
12 – Broadway, Crystal Ave, No. Main St	535	[REDACTED]
13 – Lower By-Pass 28, Barkland Acrea	606	[REDACTED]
14 – A St, Hillside Ave, Franklin St, Lenox Rd	[REDACTED] #2/625	Contractor/[REDACTED]

SNOW PLOW TEAMS 2017/2018

TEAM #1 [REDACTED]
[REDACTED]
[REDACTED]

TEAM #2 [REDACTED]
[REDACTED]
[REDACTED]

TEAM #3 [REDACTED]
[REDACTED]
[REDACTED]

TEAM #4 [REDACTED]
[REDACTED]
[REDACTED]

Highway Numbers - On Call phone – [REDACTED]
Beeper [REDACTED]
Beeper [REDACTED]

Vehicle Maintenance On-Call Phone – [REDACTED]

Building & Grounds Beeper – [REDACTED]

Highway On-Call Nextel phone # [REDACTED]
Bill Buxton-Hwy Crew Chief Cellphone # [REDACTED]

TOWN OF DERRY **SNOW PLOW PERSONNEL - PHONE NUMBERS** **WINTER SEASON 2017-2018**

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ALTERNATES

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.....	 VERIZON	 HOME
.....	2..... VERIZON	 HOME
BLDG MAINT. BEEPER	 VERIZON	 HOME
HIGHWAY ON CALL PHONE	 FOREMAN	
HIGHWAY BEEPER		 BEEPER
STATE SHED (Div #5)	666-3336	
.....		
WASTEWATER BEEPER		
WATER BEEPER		
VEHICLE MAINT		

.....		T	
.....		K	

STORM LOG **DATE OF STORM**____/____/____ **TIME RESPONDING**_____

[illegible]

STORM LOG cont.

DATE OF STORM_____/_____/_____

TIME_____

Road conditions: DRY ____ WET ____ ICY ____

SNOW COVERED ____ SNOW PACKED ____

Weather conditions: CLEAR ____ CLOUDY ____ WINDY ____ (MPH)

RAINING ____ FREEZING RAIN ____ SLEET ____

SNOWING Light ____ Moderate ____ Heavy ____

TEMPERATURE _____

Actions being taken: SANDING/SALTING ____ PLOWING ____

Comments on current operations:

TIME_____

Road conditions: DRY ____ WET ____ ICY ____

SNOW COVERED ____ SNOW PACKED ____

Weather conditions: CLEAR ____ CLOUDY ____ WINDY ____ (MPH)

RAINING ____ FREEZING RAIN ____ SLEET ____

SNOWING Light ____ Moderate ____ Heavy ____

TEMPERATURE _____

Actions being taken: SANDING/SALTING ____ PLOWING ____

Comments on current operations:

APPENDIX C

Derry Town-Wide Municipal Salt Usage Summary

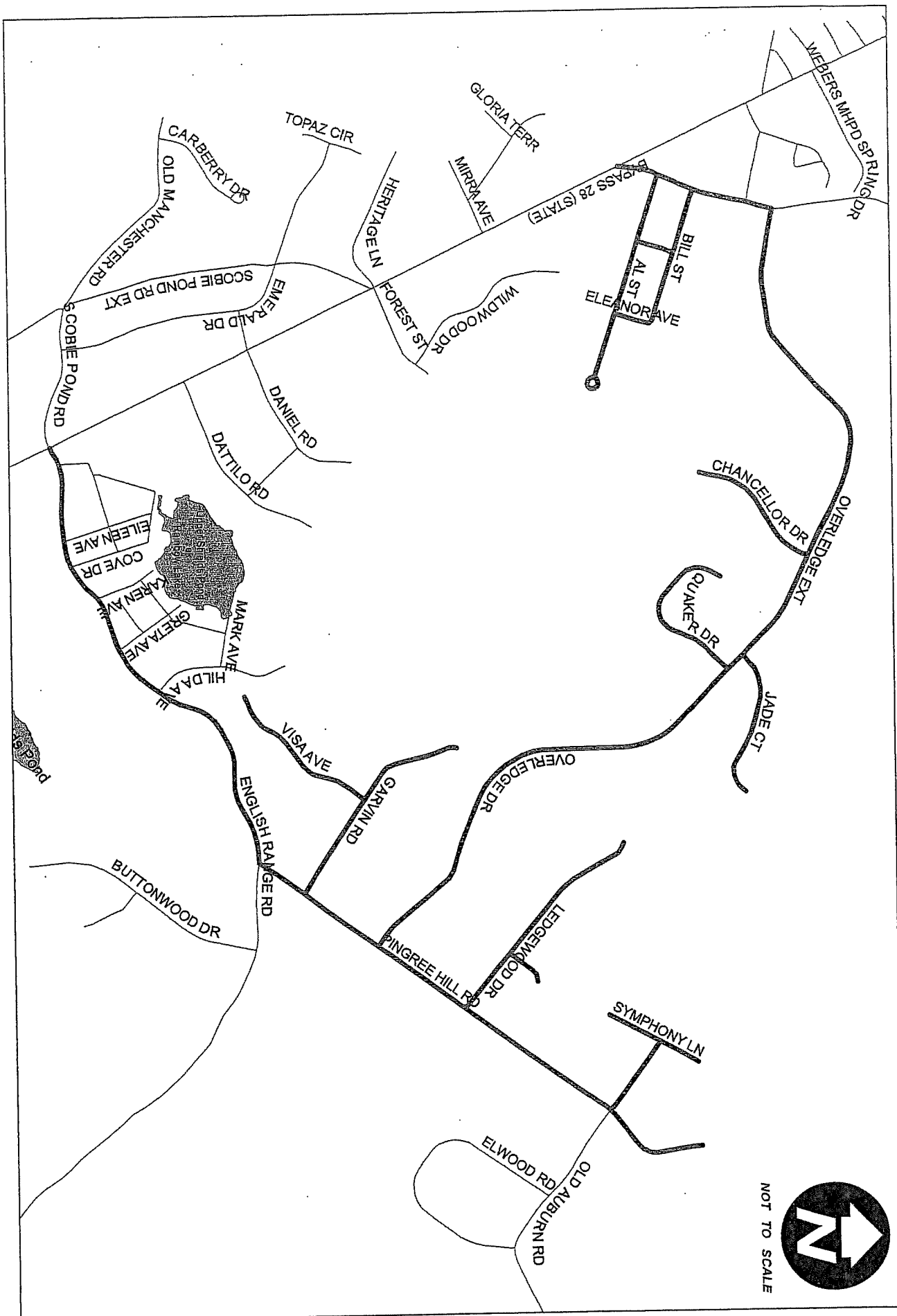
FY1991 through FY2015

Fiscal Year	Town-Wide Salt Use (tons)	10-yr aver.	5-yr aver.	Watershed Salt Use (tons)	10-yr aver.	5-yr aver.
FY15	4200	3977	3653	2772	2625	2411
FY14	5200	3914	3688	3432	2583	2434
FY13	3818	3940	3779	2520	2600	2494
FY12	1900	3952	3771	1254	2608	2489
FY11	3300	4097	3802	2178	2704	2509
FY10	3500	4258	4173	2310	2810	2754
FY09	4407	4211	4366	2909	2779	2882
FY08	5750	4041	4185	3795	2667	2762
FY07	2051	3825	4133	1354	2525	2728
FY 06	5158	4000	4392	3404	2640	2899
FY05	4465	4195	4342	2947	2769	2866
FY04	3503	3965	4056	2312	2617	2677
FY03	5486	3931	3897	3621	2595	2572
FY 02	3347	3745	3518	2209	2472	2322
FY 01	4910	3747	3608	3241	2473	2381
FY 00	3035	3516	4048	2003	2321	2672
FY 99	2708		3873	1787		2556
FY 98	3590		3965	2369		2617
FY 97	3796		3972	2505		2622
FY 96	7110		3886	4693		2565
FY 95	2160		2984	1426		1970
FY 94	3171			2093		
FY 93	3625			2393		
FY 92	3365			2221		
FY 91	2600			1716		

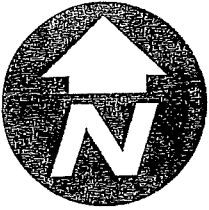
Note: Fiscal Year runs July 1 through June 30
i.e., FY10 is July 1, 2009 through June 30, 2010

APPENDIX D

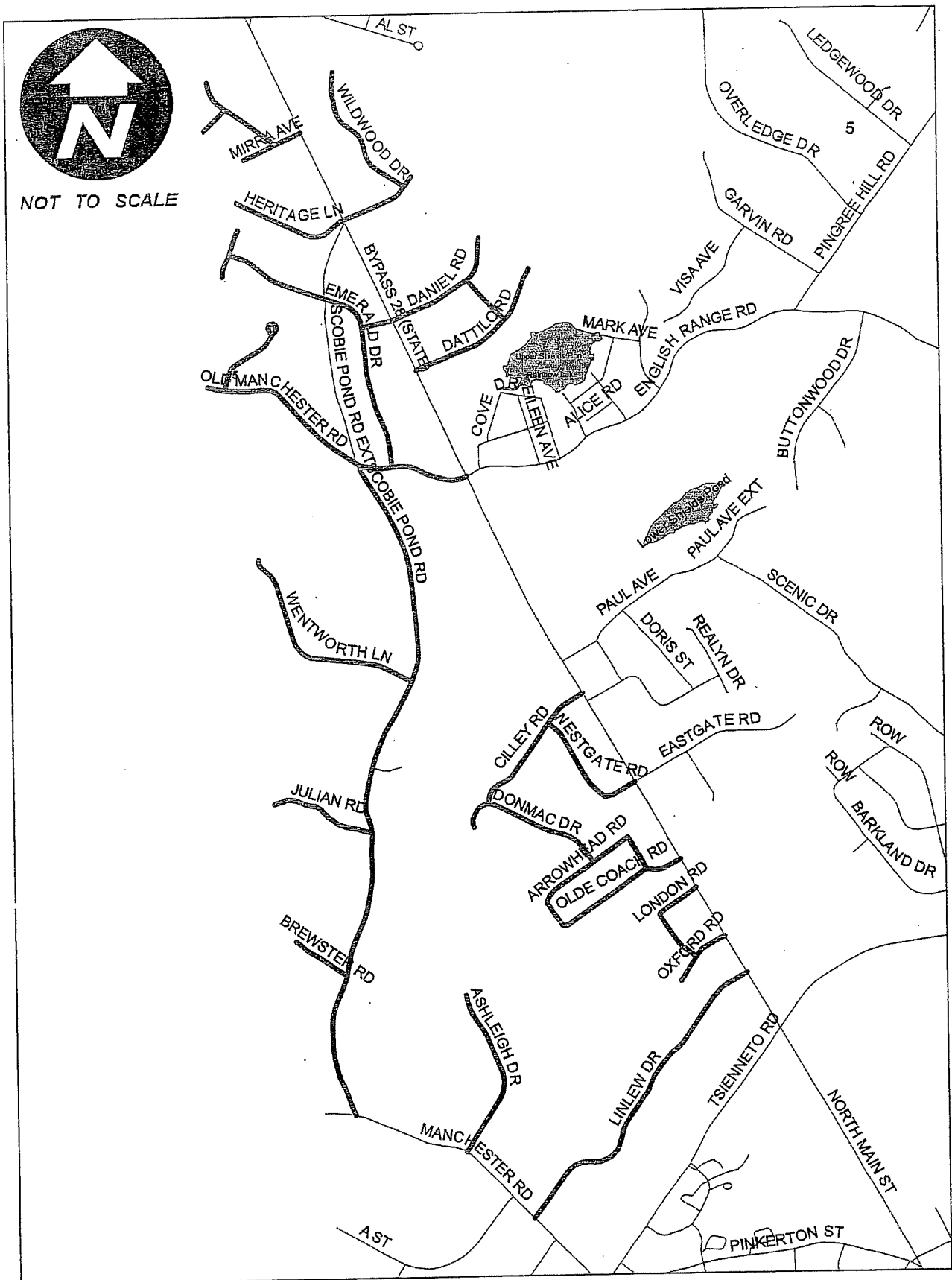
Derry Town-Wide Plow Route Maps



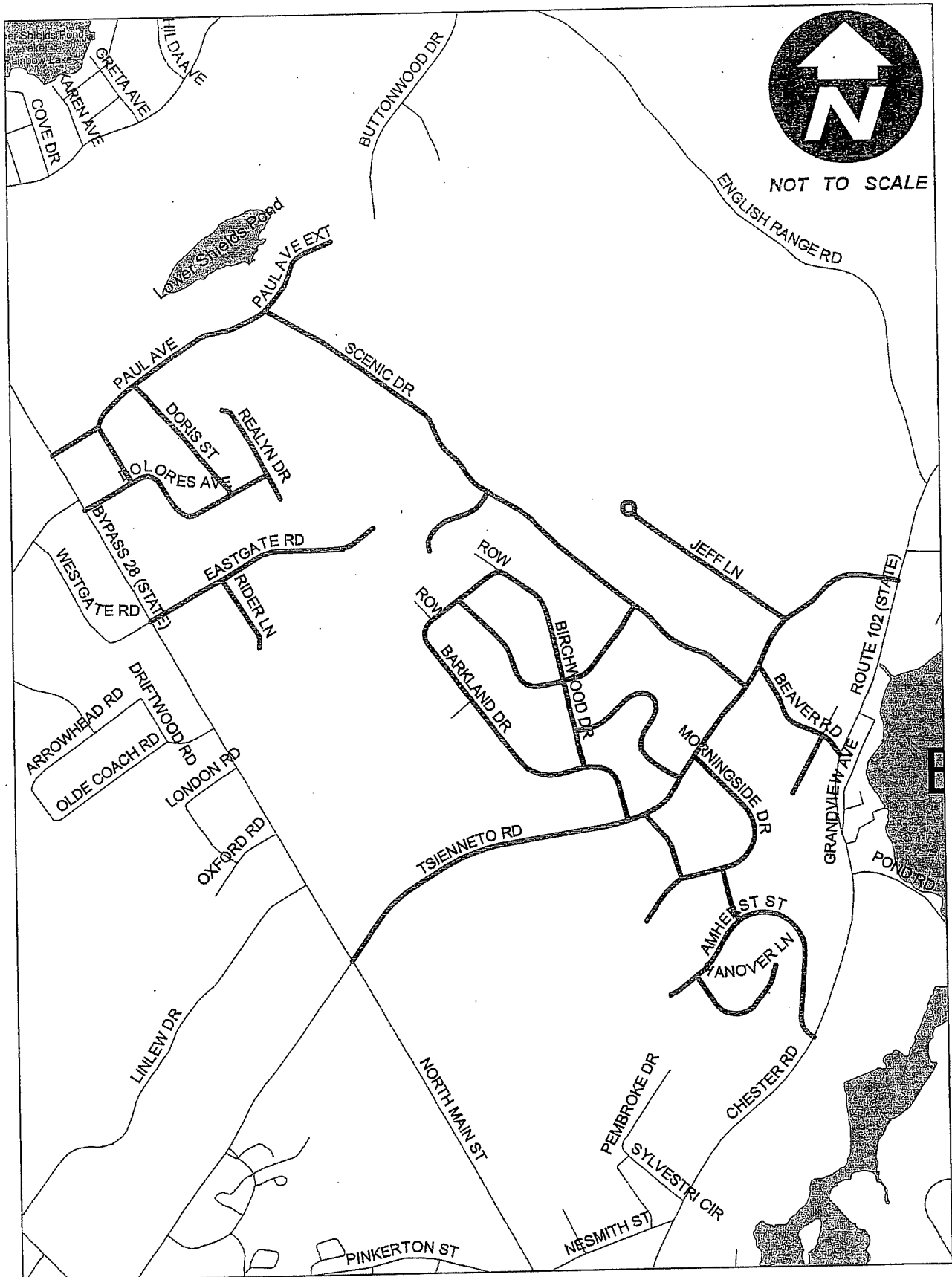
PLOW ROUTE 1



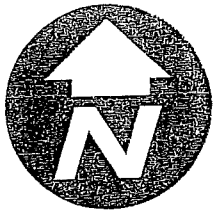
NOT TO SCALE



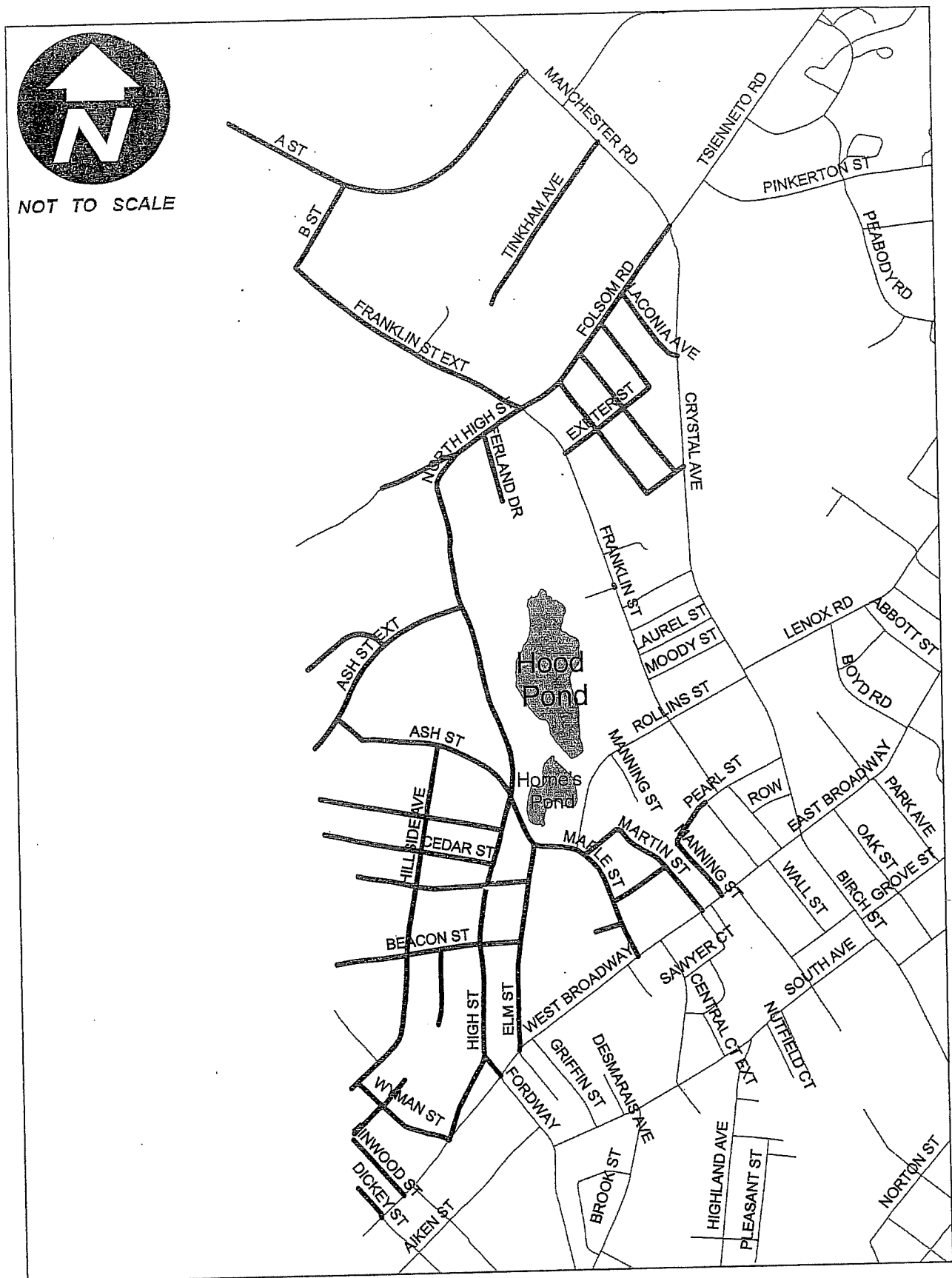
PLOW ROUTE 2



PLOW ROUTE 4



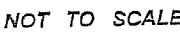
NOT TO SCALE



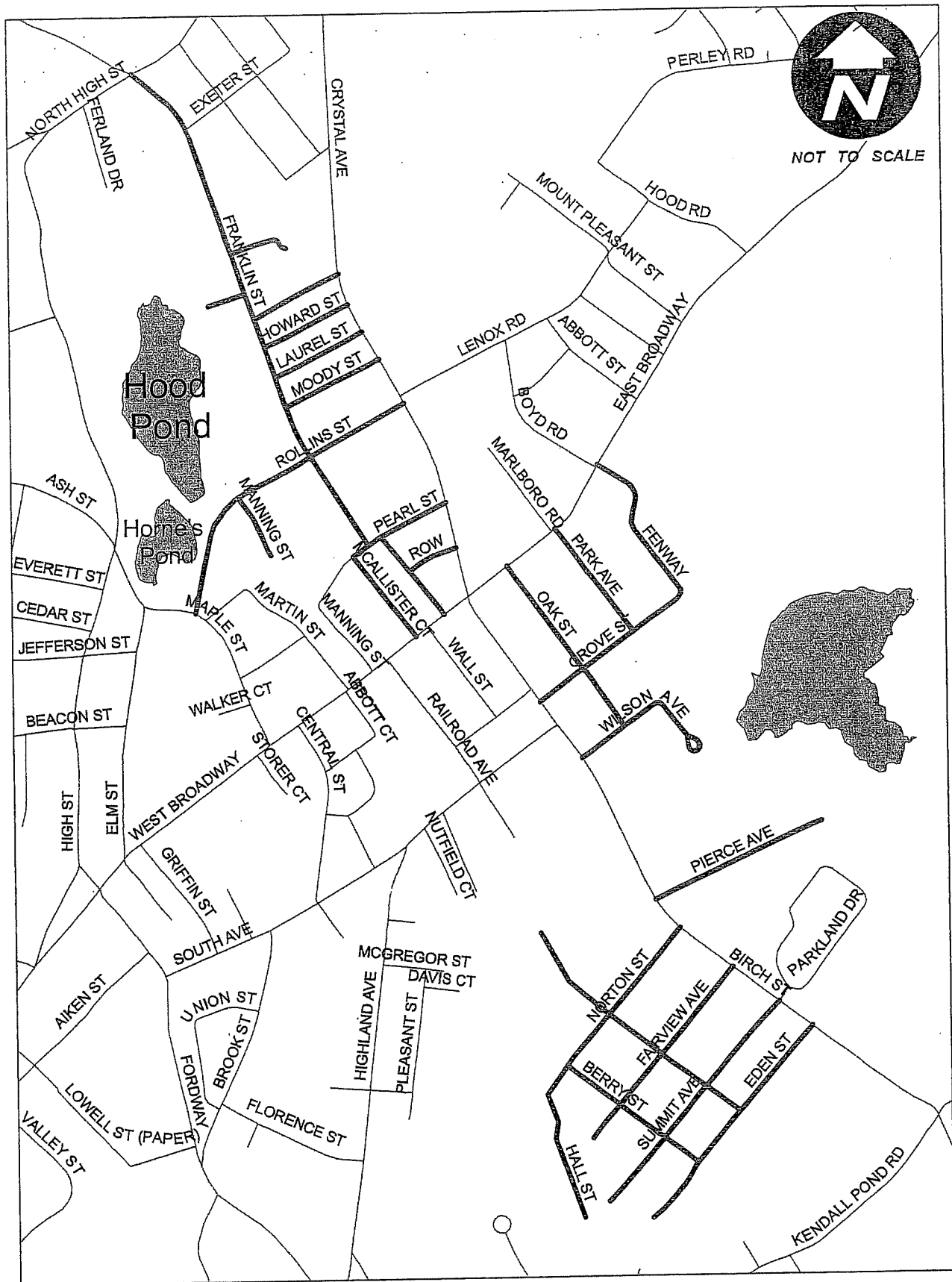
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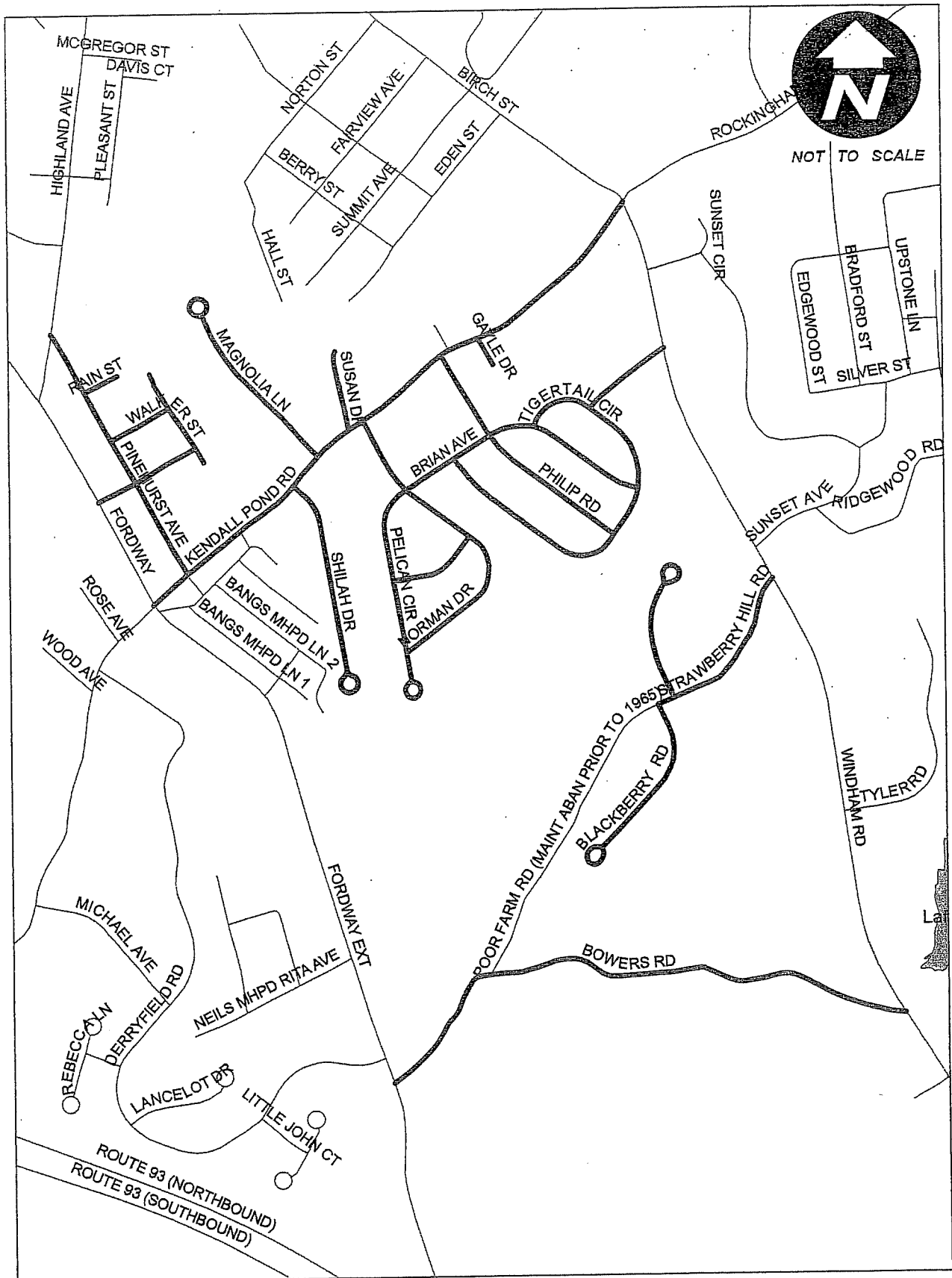
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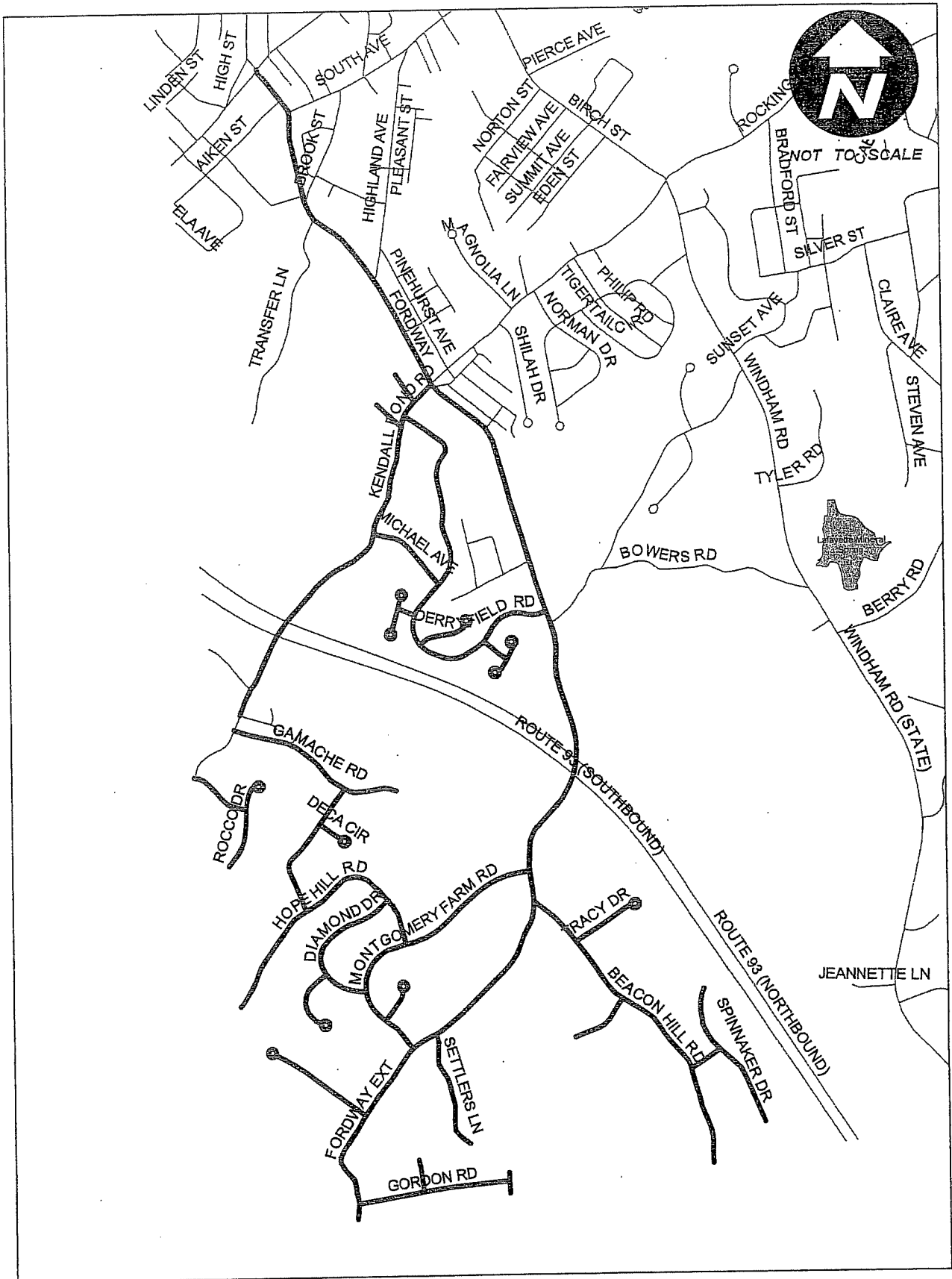
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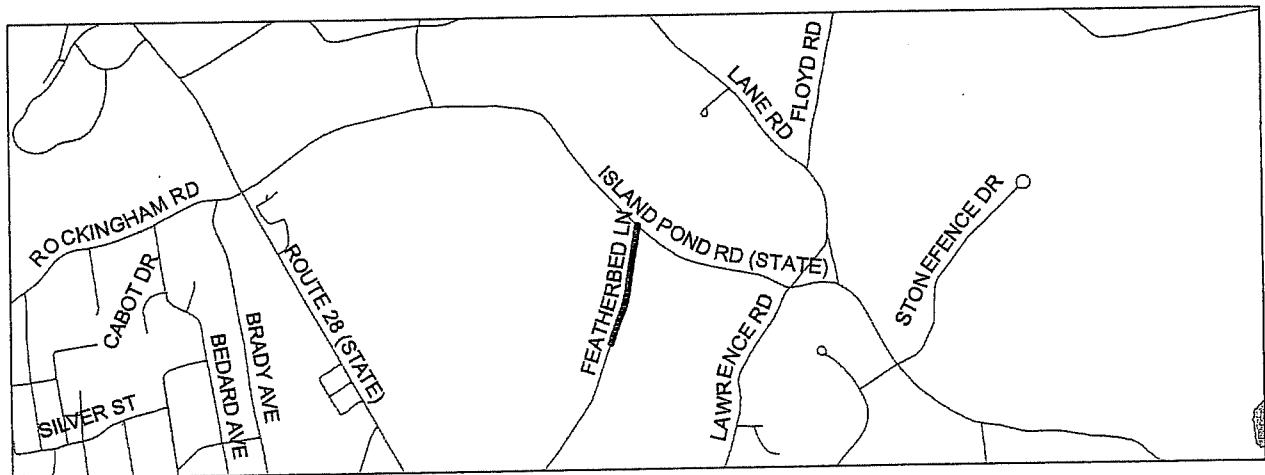
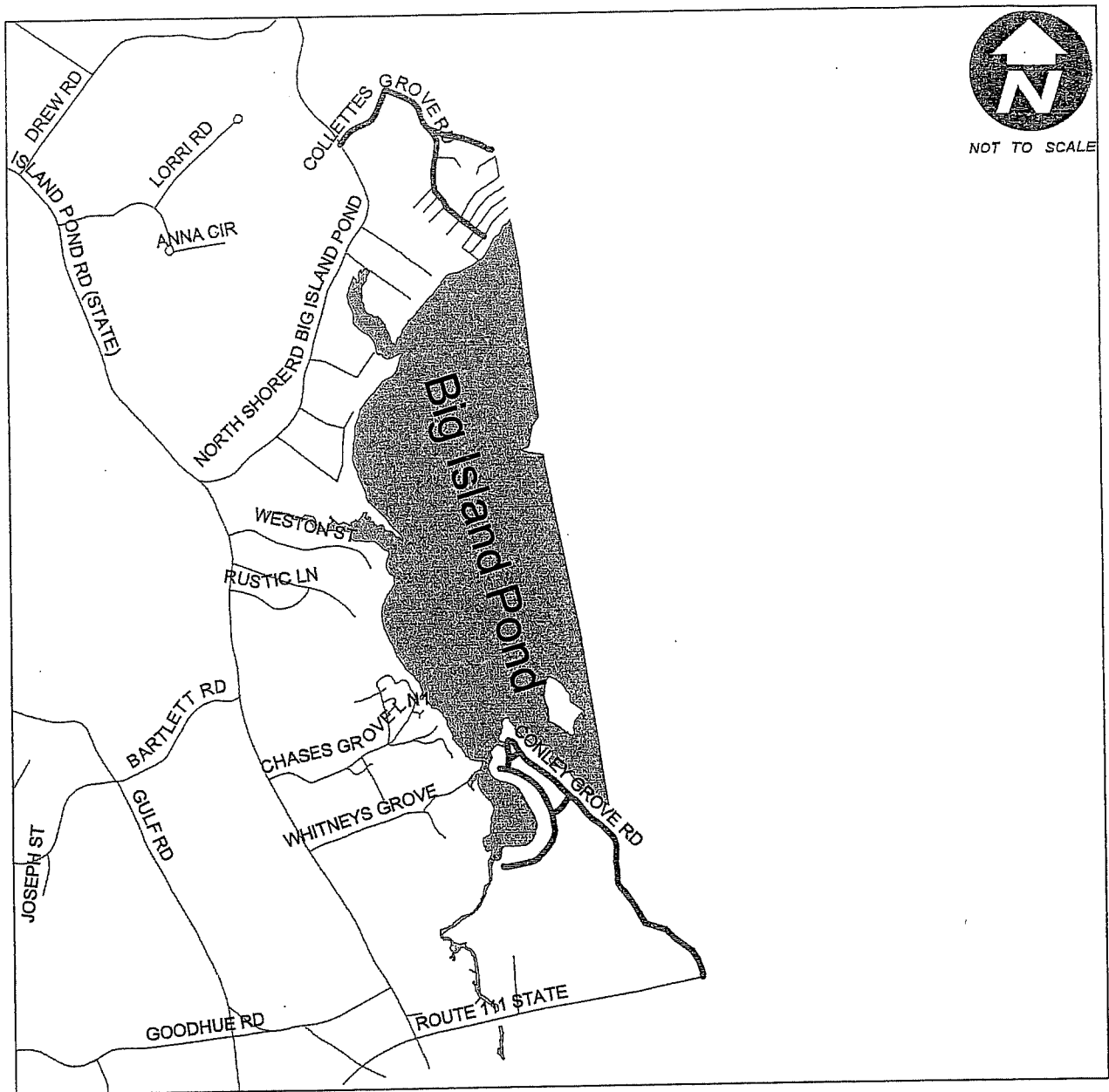
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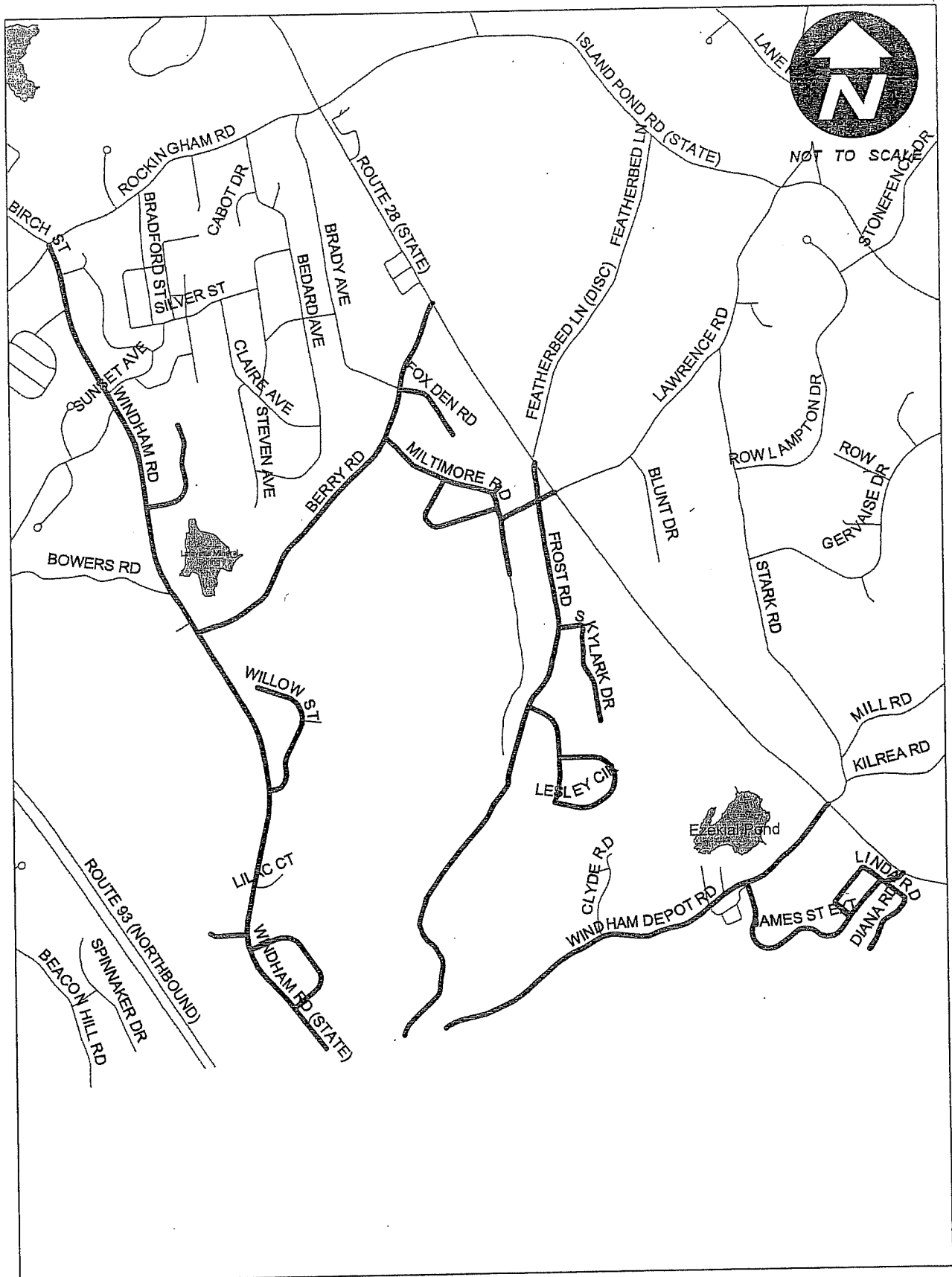
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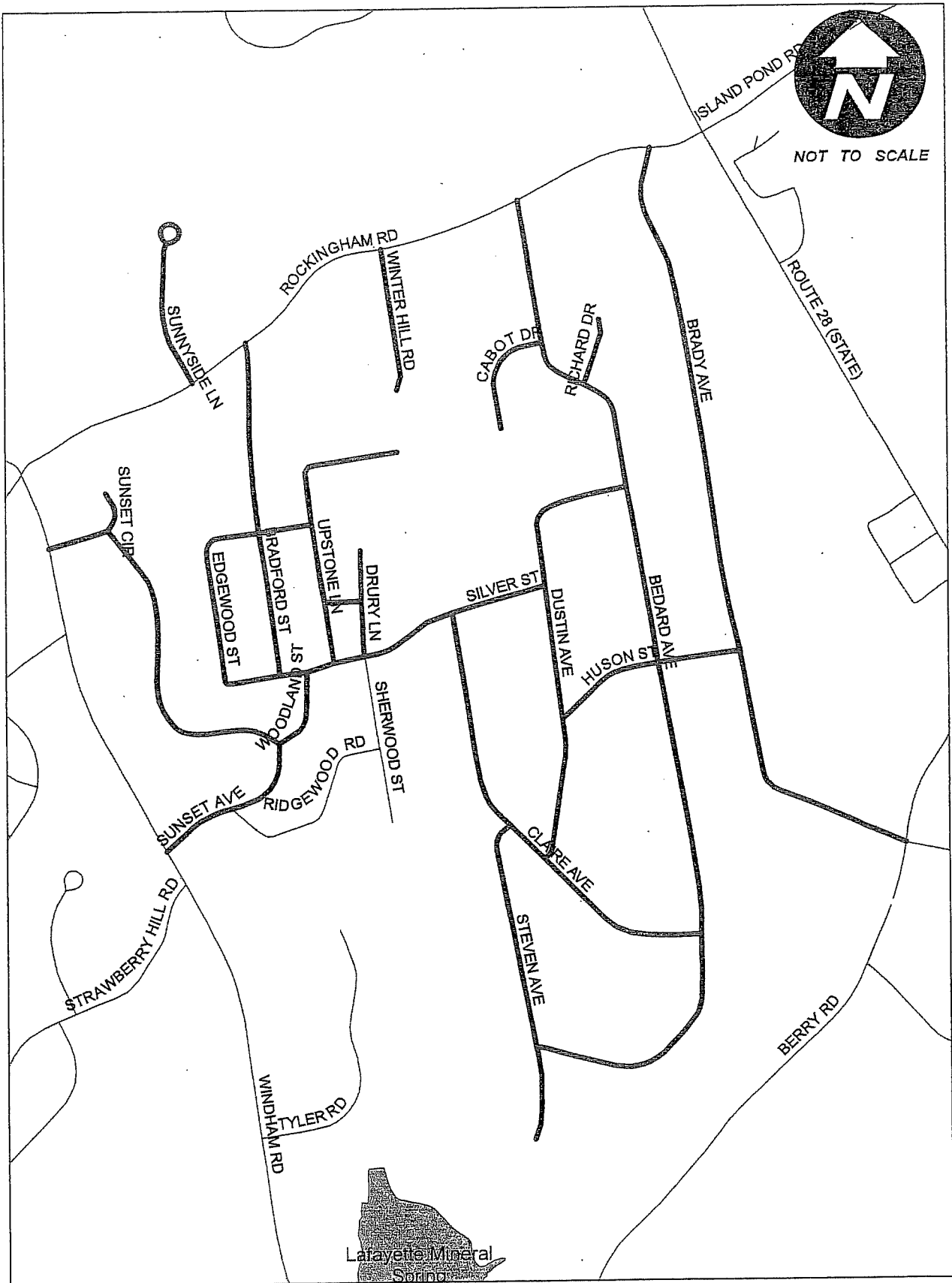
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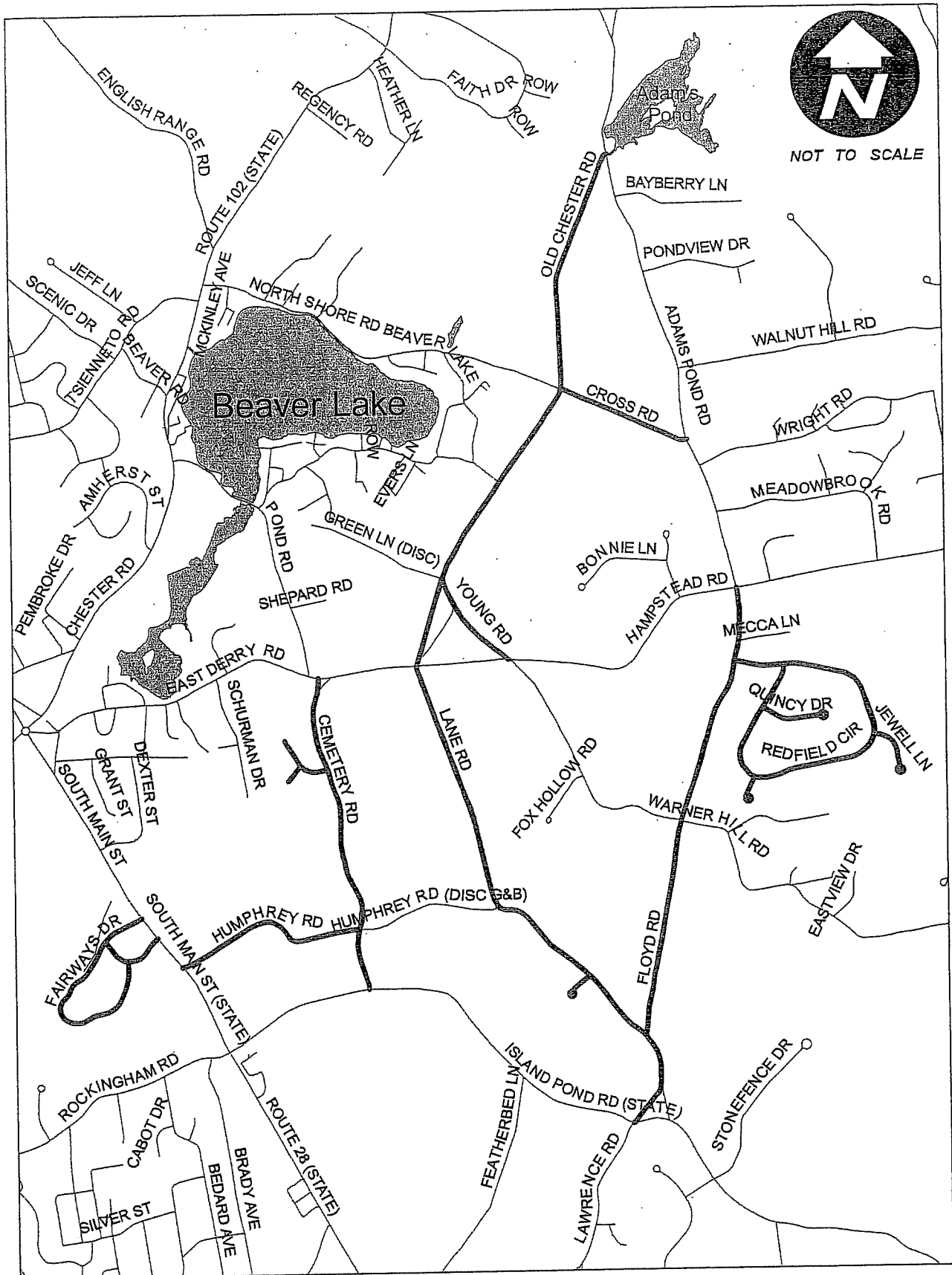
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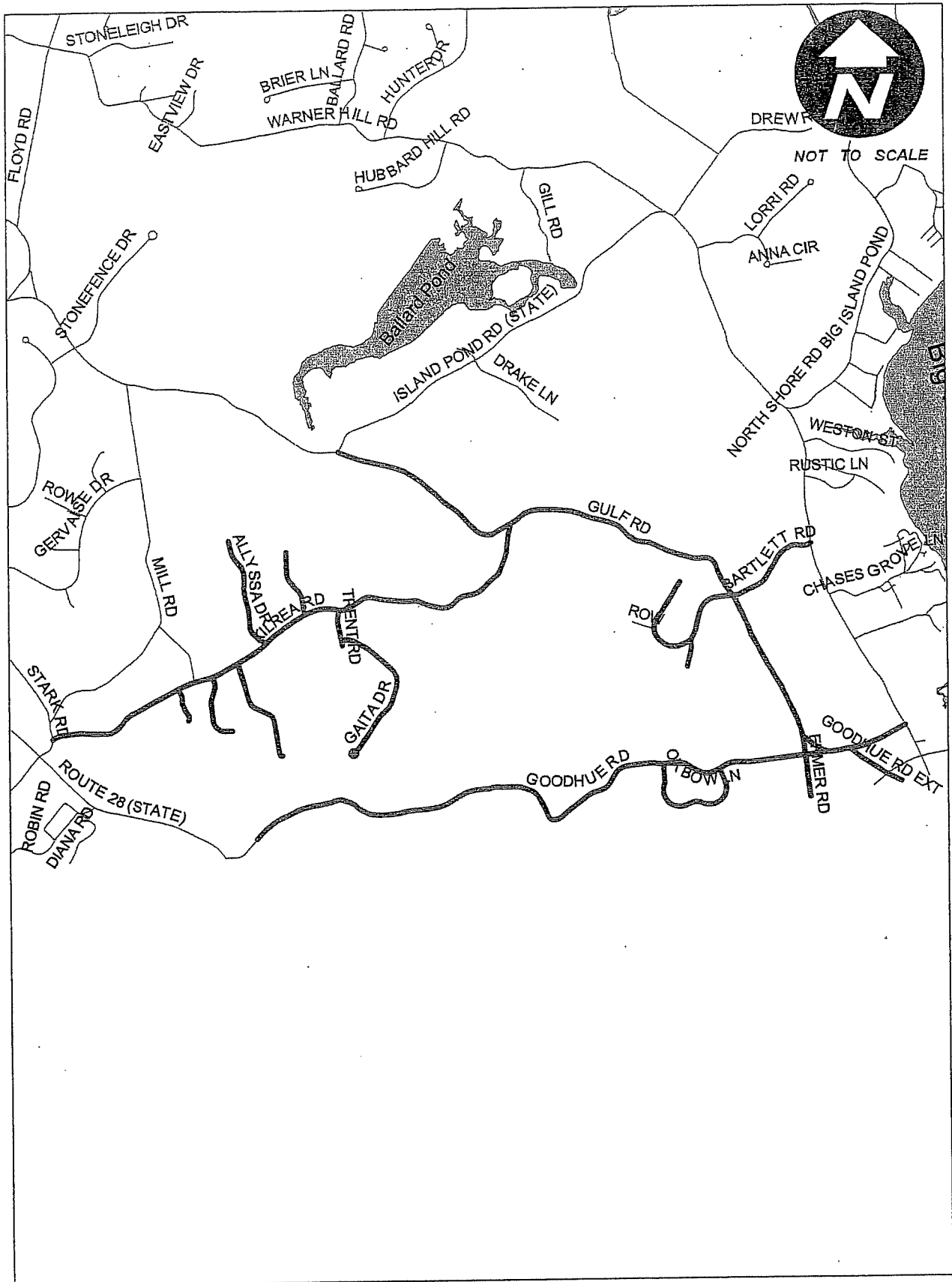
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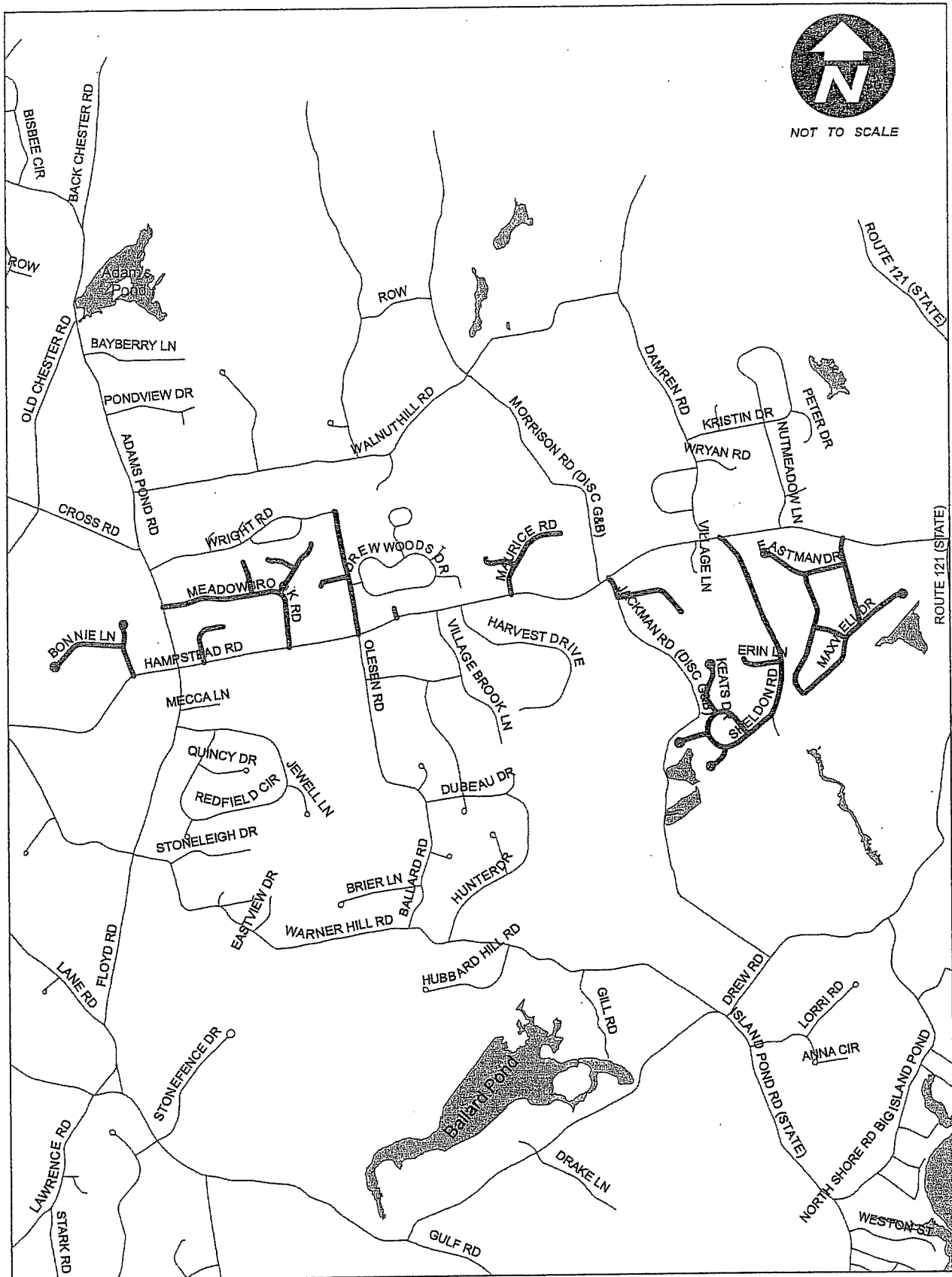
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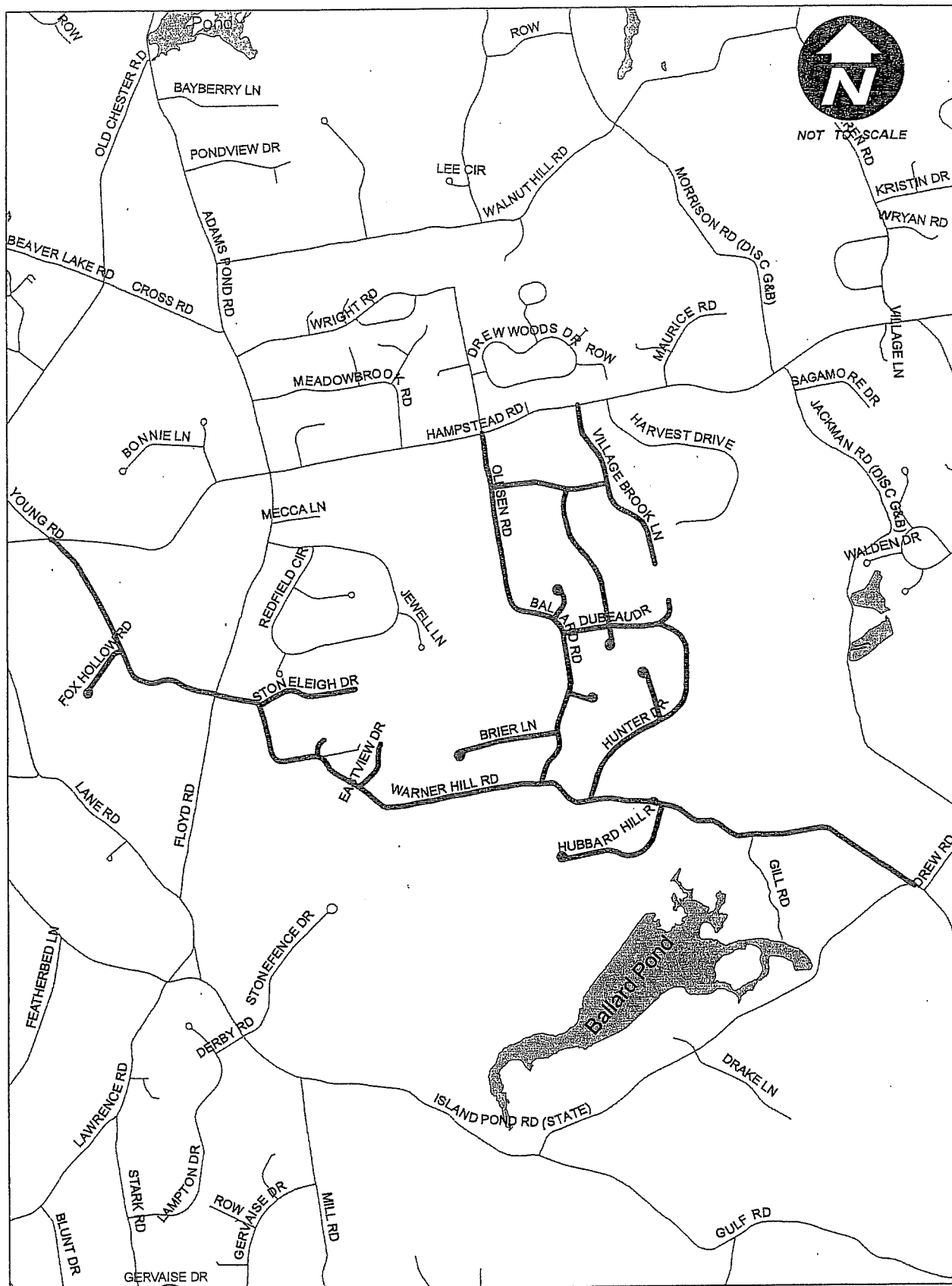
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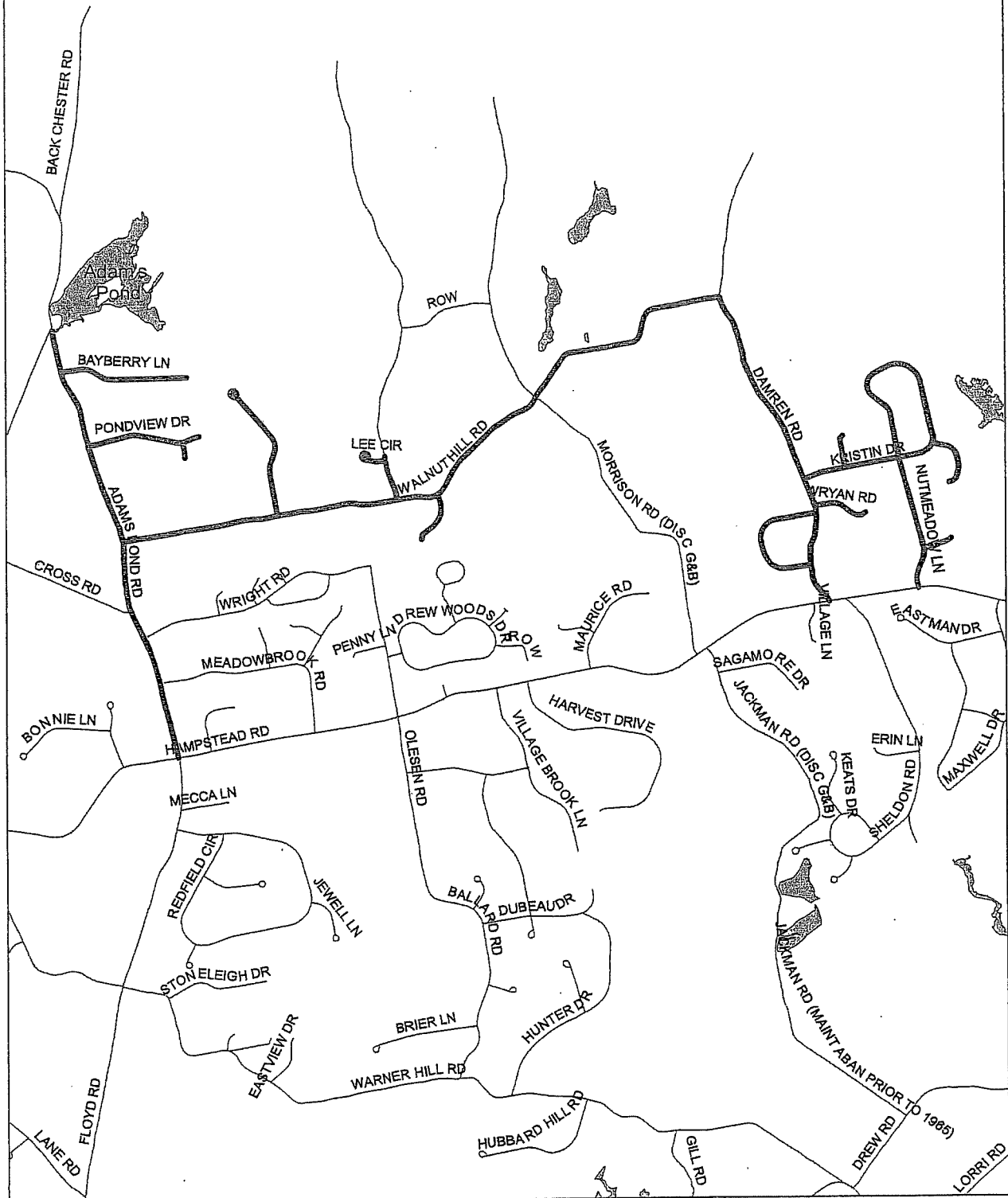
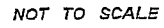
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PLOW ROUTE 17



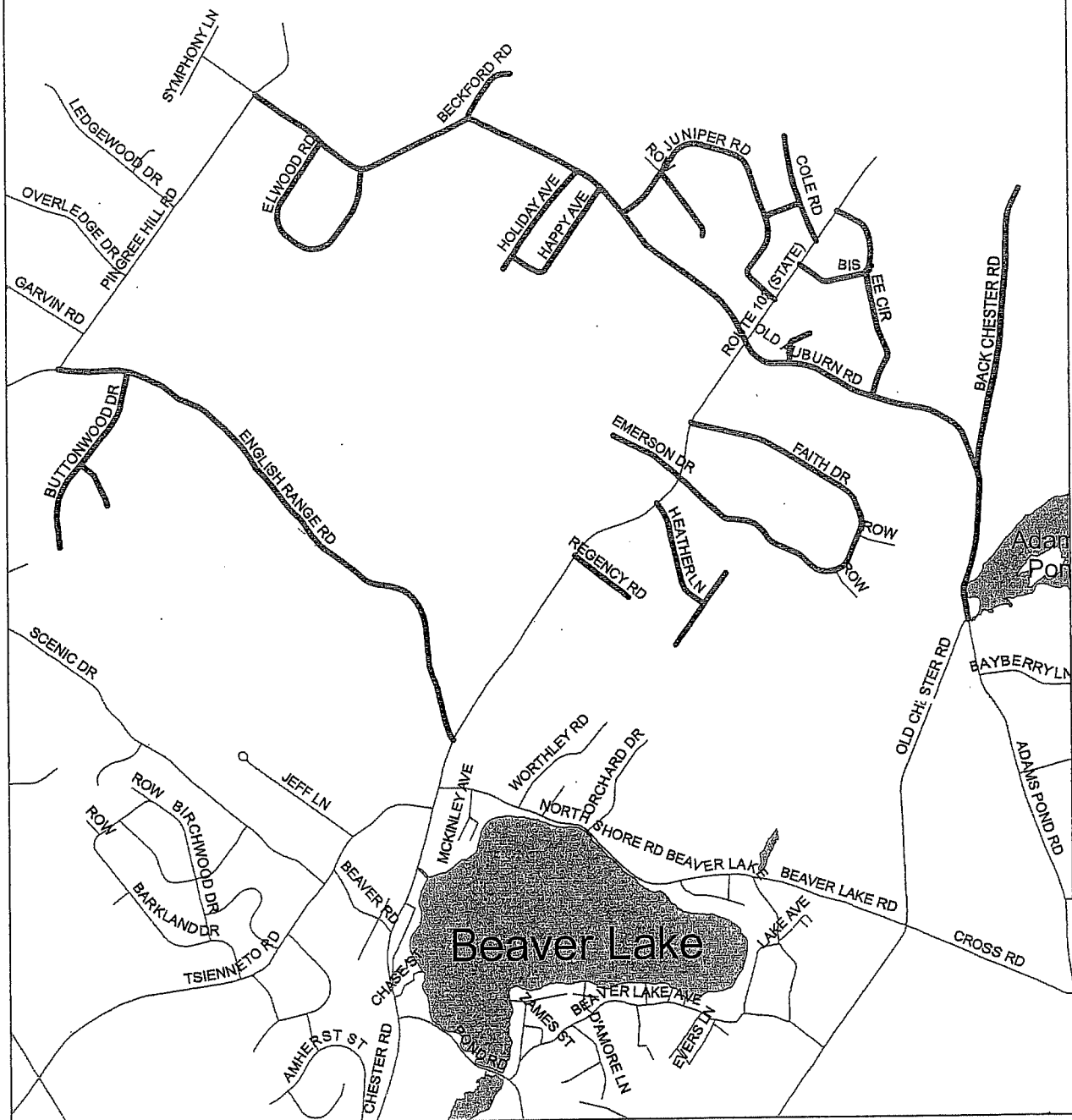
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PLOW ROUTE 19



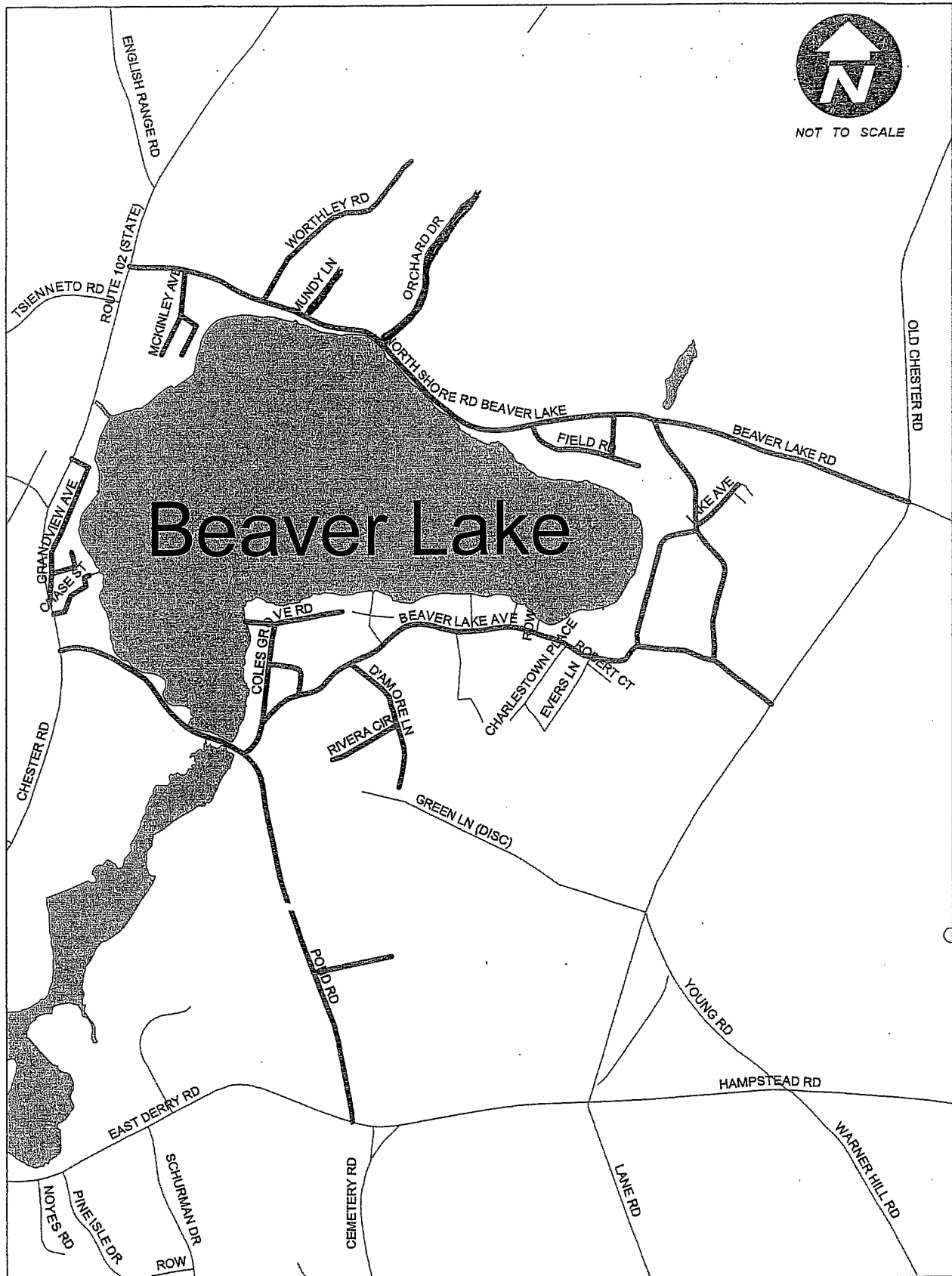
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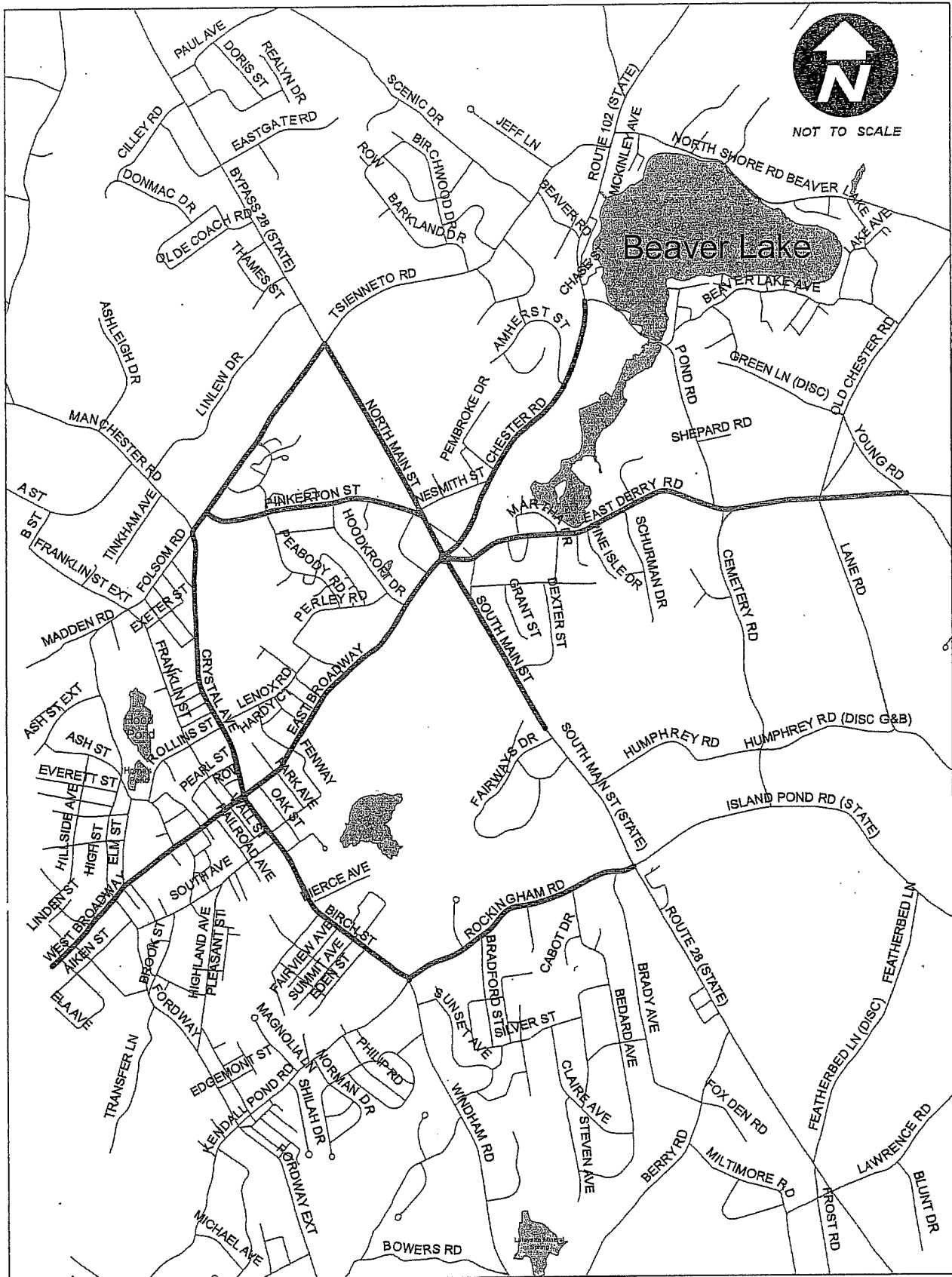
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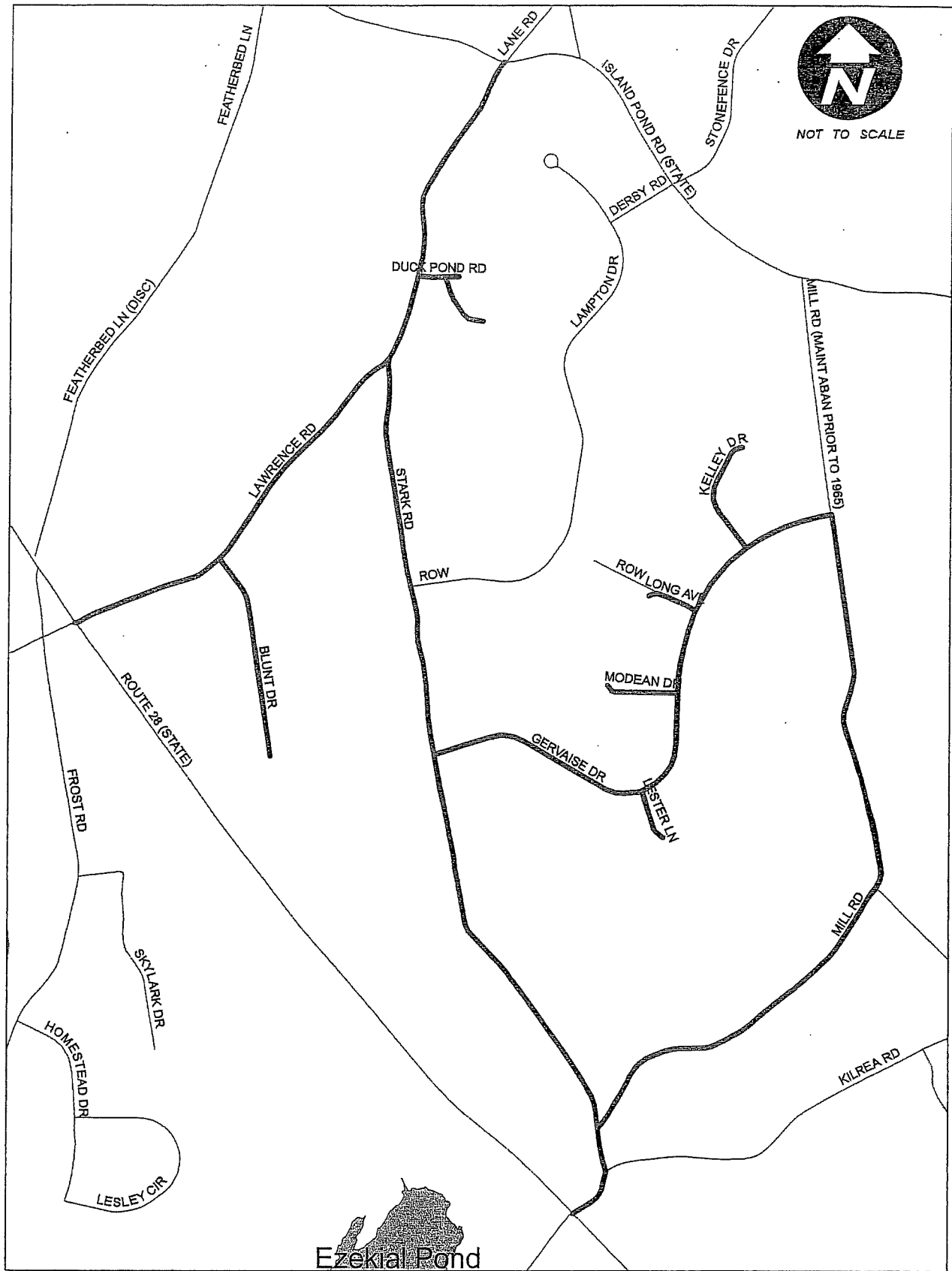
PLOW ROUTE 21



PLOW ROUTE 22



PLOW ROUTE 23



PLOW ROUTE 24

Appendix E

Draft DES TMDL Implementation Plan Considerations

TMDL IMPLEMENTATION PLAN CONSIDERATIONS

Paul M. Currier, DES Watershed Management Bureau

April 15, 2010

I. There are Four TMDL watersheds for which salt reduction implementation plans are needed. For DOT, I-93 should get a separate allocation from other DOT roads that includes the planned expansion. There would be a separate allocation for municipal and private salt use for each town in a TMDL watershed

Table 1

DINSMORE BK.	N. TRIB. CANOBIE LAKE	BEAVER BK	POLICY – PORCUPINE BK
DOT I-93	DOT I-93	DOT I-93	DOT I-93
DOT other roads	DOT other roads	DOT other roads	DOT other roads
Windham municipal	Windham municipal	Londonderry muni	Salem municipal
Windham Private	Windham Private	Derry municipal	Windham municipal
Windham Future	Windham Future	*Chester&Auburn	Salem private
		Londonderry private	Windham private
		Derry private	Salem future
		Londonderry future	Windham future
		Derry future	
123.1 tons salt/yr	26.9 tons salt/yr	5863.4 tons salt/yr	3,449 tons salt/yr

II. The measure of salt reduction success should be a rolling 10-year average of salt use. An interim measure of success for any given year would be the year's salt use weighted by the Winter Severity Index for I-93.

II. The starting point for all implementation plans is the "equally shared reduction" scenario presented in the approved TMDLs. The final implementation plans may contain different allocations for sectors, and a future growth allocation. These must be negotiated among DOT and municipalities.

A. Municipalities MAY negotiate on behalf of private sector salt users. Private sector allocations should be different from the initial TMDL allocation ONLY if there is a municipally-based plan for how private salt use will be tracked and a municipal commitment to help implement it.

III. In the absence of negotiated agreement among municipalities and DOT, sector allocations for municipalities and DOT should remain as in the TMDLs.

IV. In the absence of a municipally-based plan for how private salt use will be tracked and a municipal commitment to help implement it, private sector salt allocations should remain as in the TMDLs.

V. In the event that municipal salt reduction plans, DOT salt reduction plans, and discussions and negotiations among DOT, municipalities, and private sector salt users do not result in consensus-based sector allocations and plans for each sector that are expected to meet the overall watershed allocation, DES may either:

A. Prepare and publish an implementation plan, and use state law authorities to implement it as necessary; OR

B. Defer to EPA to implement the needed salt use reductions by using their NPDES permit authority. This might involve NPDES small MS4 stormwater general permits, issuing individual permits, and issuing general stormwater permits to categories of salt users (property owners and municipalities) under residual designation authority.

VI. The best scenario is one in which DOT, DES, and municipalities work together, leverage the FHWA earmark \$\$, and develop a long-term (probably a decade or more) strategic plan for overall salt use reduction.