



# SNOW REMOVAL POLICY RESEARCH PROJECT

Town of Truro

## Abstract

The purpose of this document is to give the Town insight for developing and implementing their own snow removal policy. Information was gathered from surrounding towns to understand how they operate and manage their snow removal activities, in particular – private roads. This is a working document that will strengthen with further comment from staff and elected officials.

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## Objective

The winter of 2014-2015 brought record breaking snowfall to the Town of Truro. Due to these circumstances, the Truro Department of Public Works (herein referred to as DPW) aided the Town with snow removal services for both Public and Private roads (emergency basis). Although the Town is not currently responsible for plowing private roads, requests were received by the DPW Director and/or the Town Administrator on numerous occasions. The requests for plowing private roads were granted if it were deemed necessary to avoid a public safety hazard. For example, citizens would call if an oil delivery truck was unable to deliver to their residence, if someone needed care from a visiting nurse or if they required critical medication. In addition, DPW assisted fire and rescue when responding to a call on a private road.

Not anticipating the severity of the winter, many of the homeowners and associations on private roads did not have snow removal contractors lined up in advance. As a result, the DPW was asked to aid in snow removal on these private roads to avoid various hazards to public safety. After discussions with staff, elected officials and citizens, it was agreed that an updated snow removal policy ought to be investigated to allow for consistent practices in the future.

The purpose of this document is to review and compare how other towns across the Cape have implemented their snow removal policies for their public and private roads. This will be a tool in reviewing the Town's practices in an attempt to keep the public and staff as safe as possible.

## Facts

The Town of Truro consists of approximately 40 miles of Town roadways and approximately 120 miles of private roadways. The condition of the private ways vary from gravel, bituminous pavement, dirt, sand etc. We do not have a current estimate on the percentage of paved vs. sand roads at this time, but are considering options to approach this topic. The DPW employs 13 employees, not including the Director. Out of those 13 employees, 9 of them plow. The DPW Director also assists with plowing. The remainder of the 4 employees assist with shoveling and/or salting the walkways.

The DPW has approximately 10 trucks for plowing, varying in size and capability. 6 of these trucks also are equipped with spreaders to distribute sand to the roads prior to plowing activities. Currently, the Town of Truro does not hire outside contractors for snow removal purposes.

## Massachusetts General Laws

This section describes the laws that pertain to snow and ice removal for municipalities. If the Town were to pursue accepting responsibility for private roads, Chapter 40 Section 6D indicates that an official ballot would be required at the annual town election.

### MA General Laws Chapter 40 Section 6C:

Section 6C. A city or town which accepts this section in the manner provided in section six D may appropriate money for the removal of snow and ice from such private ways within its limits and open to the public use as may be designated by the city council or selectmen; provided, that, for the purposes of section twenty-five of chapter eighty-four, the removal of snow or ice from such a way shall not constitute a repair of a way.

### MA General Laws Chapter 40 Section 6D:

Section 6D. Section six C shall be submitted for acceptance to the registered voters of a city at a regular city election if the city council thereof so votes, and of a town at an annual town election upon petition of two hundred registered voters or of twenty per cent of the total number of registered voters, substantially in the form of the following question, which shall be placed on the official ballot used for the election of officers at such city or town election:

Shall the city (or town) vote to accept the provisions of section six C of chapter forty of the General Laws, which authorize cities and towns to appropriate money for the removal of snow and ice from private ways therein open to public use?

YES.	<input type="checkbox"/>
NO.	<input type="checkbox"/>

If a majority of the votes in answer to said question is in the affirmative, then said section shall thereupon take full effect in such city or town, but not otherwise.

## Town Comparison Table

	Policy	Plow Private Roads	Travel surface width	Height clearance	Shoulder width	Road surface	Turnaround required	Yearly inspections
<b>Barnstable</b>	Yes	Yes	None	None	None	None	None	None
<b>Dennis</b>	Adopted 8/4/09	Yes	10' (1 lane)	14'	2' both sides	no ruts more than 2" deep	Yes	September
<b>Harwich</b>	Adopted 10/6/03	Yes	10' (1 lane)	14'	2' both sides	no ruts more than 2" deep	Yes	September
<b>Chatham</b>		Yes	12'	12'	2' both sides	no ruts more than 2" deep	Yes	September
<b>Brewster</b>		Yes	10'	12'	2' both sides	no ruts more than 3" deep	Yes	July 31st and Nov 1
<b>Eastham</b>	Adopted 9/8/15	Yes (petition)	20'	14'	2' both sides	no ruts more than 2" deep	Yes	September
<b>Wellfleet</b>	On hold							
<b>Provincetown</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

As portrayed in this table, the majority of the surrounding towns have implemented policies that initiate an inspection process every year to address which private roads are acceptable for plowing.

## Options and Estimated Cost Analysis

\*Assumption made as to the amount of regular hours dedicated to snow removal.

\*\*Assumption made as to the amount of overtime hours based on an average rate.

	Hrs	FY '12	Hrs	FY '13	Hrs	FY '14	Hrs	FY '15
5100 Overtime** \$44/hr	264	\$11,603.63	920	\$40,485.71	1,022	\$44,973.79	1,431	\$62,969.29
5200 Services		\$0.00		\$225.00		\$0.00		\$0.00
5400 Materials		\$7,635.43		\$8,458.02		\$19,439.96		\$33,062.91
Regular Hours* (\$26/hr)	1600	\$42,947.00	1,600	\$42,947.00	1,600	\$42,947.00	2,000	\$53,684.00
<b>Totals</b>	<b>1864</b>	<b>\$62,186.06</b>	<b>2,520</b>	<b>\$92,115.73</b>	<b>2,622</b>	<b>\$107,360.75</b>	<b>3,431</b>	<b>\$149,716.20</b>
Average Rate per SF @ 4,695,300 SF (From Totals)		\$0.0132		\$0.0196		\$0.0229		\$0.0319

	30 Miles	60 Miles	90 Miles	120 Miles
SF at 12' wide	1,900,800	3,801,600	5,702,400	7,603,200
Town Cost at FY'14 rate	\$43,462.89	\$86,925.78	\$130,388.67	\$173,851.57
Approximate Hours (\$40.95/hr)	1,062	2,123	3,185	4,246
Cost per mile	\$1,449	\$1,449	\$1,449	\$1,449

Note: This option would require hiring more staff and purchase of additional equipment/material.

	30 miles	60 miles	90 miles	120 miles
Contractor \$100/hr	\$106,151.85	\$212,303.70	\$318,455.54	\$424,607.39
Cost per mile	\$3,538	\$3,538	\$3,538	\$3,538

Note: This option considers an average rate as the type of equipment would differ on various roads.

Table 1 above explains what the DPW has expended over the past 4 Fiscal years for snow removal. Table 2 estimates what it would cost the Town to introduce plowing of private roads utilizing Town staff (several scenarios). Table 3 estimates what it would cost the Town to hire outside contractors for snow and ice removal. A unit rate was set per square foot of roadway to determine an estimated cost for Town responsibilities. A per mile fee was considered, however; the DPW maintains various parking lots that made it difficult to estimate by the mile. So an estimation of square footage was analyzed to calculate the rate per SF. This rate was then used to estimate the projected cost to consider plowing private roads which could then translate back to a per mile cost as seen in table 2 & 3.

The table includes various scenarios of how many miles of private roads could be plowed. This is assuming that an inspection process would be implemented to determine compliance with standards the Town would need to develop. Also, there could be stipulations on when plowing of private roads would be triggered, i.e. if the snowfall amount exceeds 1 foot – the Town would plow the private roads after the Town responsibilities were fulfilled. Another idea would be to contract out these services to private contractors.

Nonetheless, if the Town were to consider taking on more plowing responsibility, there would be a financial impact. This could result in purchasing additional equipment, additional material and/or hiring seasonal laborers. If the Town were to consider hiring outside contractors, the following provides the current going rate (obtained from a local contractor) for various equipment: 1 Ton pick up (\$85/hr), Front-end loader (\$97/hr), 6 Wheeler (\$140/hr), 6 Wheeler with wing plow (\$187/hr).

Here are a few alternatives to commence the discussions:

1. No major changes, update current policy and plow private roads on an emergency basis only.
2. Plow ALL private roads utilizing Town staff.
3. Plow ALL private roads utilizing outside contractors.
4. Plow private roads that meet certain criteria utilizing Town staff.
5. Plow private roads that meet certain criteria utilizing outside contractors.

## APPENDIX A - Town of Harwich

Minimum standards adopted by The Board of Selectmen, October 6, 2003

- The travel lane for any private road shall be no less than ten (10') feet wide. There must be at least one (1) travel lane for a plow to work that is a minimum width of ten (10') feet.
- Roadside clearance of any obstacles, including vegetation, shall be no less than two (2') feet either side. This includes, but is not limited to, fences, mailboxes, stonewalls, rocks, shrubs, trees or any other object that may be damaged by snow removal equipment. It also includes a shoulder that inhibits the movement of snow from the road to the shoulder during plowing.
- Height clearance shall be no less than fourteen (14') feet from the road surface. This is to ensure that branches or any other objects over hanging the roadway, when laden with snow, limit access of snowplows and emergency vehicles.
- There must be ample room for emergency vehicle to turn around if the road is a dead end. Space at the end of the road should be of sufficient size for emergency vehicles or town plows to be able to turn around in a safe manner
- Paved or unpaved private roads shall have no defects (potholes or ruts) exceeding two (2") inches in depth. Defects in the road surface must not deviate from grade more than two (2") inches. This includes, potholes, ruts, protruding manhole covers, catch basins and roots.
- All private roads shall have a visible street sign, which must be an acceptable Municipal Uniform Traffic Control Device. These are the six (6") inch standard green reflective metal signs with four (4") inch white letters. This sign is to be mounted on a round or square metal post with appropriate mounting cap. A new standard, adopted by the Commonwealth of Massachusetts, will require these signs to be nine (9") inches high with six (6") inch letters by January 2012. We recommend that any new installations adhere to this new standard. Please contact the Highway Department for information on companies that supply these materials.
- This department, each September, will perform yearly inspections of all private roads. Property owners will be notified as to the repairs required to bring their roads into compliance. Should a road not meet minimum requirements, all the homeowners will be notified through the various media outlets by the Highway Department of the deficiencies and be given the opportunity to make repairs. When the repairs are completed the Highway Department will, upon request, re-inspect a roadway to ensure that it complies with standards and notify homeowners of their findings. If it does, plowing and sanding services will be provided.

### **Before the storm**

If you mark the front of your property with reflectors, please be sure to place them at least one foot back from the pavement. This will enable us to clear to the edge of the road without damaging your lawn.

It is essential that cars be parked well off the roadways so that the plows can open the roads as much as possible.

Reduced visibility during a snowstorm sometimes makes it impossible to see mailboxes in time to avoid hitting them. Most often, it is the heavy, wet snow rolling off the plow that damages mailboxes. This cannot be avoided. Any installations within the road layout (mailboxes, sprinkler heads, etc...) are placed

at the owner's risk. We encourage residents to set their mailbox posts at the maximum usable distance from the road edge (two foot minimum is recommended).

### **During the storm**

Please drive slowly. Excessive speed is the number one cause of winter accidents. On many occasions, people have tried to pass a plow or sander. Inexperienced motorists often do not realize that four-wheel drive does not make a vehicle stop faster. This can create a dangerous situation for themselves, as well as other drivers. Please give snow removal vehicles the right of way, and stay at least 100 feet back from sanders. Not only will this give you a safer surface to drive on, it will also prevent your vehicle from being sandblasted. Please do not drive in winter storms unless it is absolutely necessary.

### **After the storm**

Before your final driveway cleanup, please check the street. If it is clean and opened up to its full width, then you are safe. If not, be assured that the plow truck will be back to fill in your driveway. This is not intentional. Like water, moving snow will follow the path of least resistance which, unfortunately, will be your freshly shoveled driveway. Please understand that neither the Town, nor its hired contractors, can come back to shovel or plow out your driveway. Another helpful hint for minimizing the windrow across your driveway can be seen in this [video](#).

If there is a catch basin in front of your house, you can help by making sure it is clear of snow and debris, which may prevent the road from draining properly.

Finally, please be patient. Snow removal is a very arduous and time-consuming task. Your DPW workers and hired snowplow contractors do not get a shift change. They work around the clock until the job is done. We strive for the safest roadways at a reasonable cost, and in the shortest period of time. The cooperation and support of Harwich residents and businesses is greatly appreciated.

As the snow starts, crews begin to sand their assigned routes. **Main roads and school bus routes are sanded first, with secondary roads being done as needed.**

When snow accumulation **has reached 2 to 3 inches**, plowing begins. Our primary objective is to keep the main roads open.

After the storm has ended, cleanup begins with the widening of all roads to ensure passability and to aid in drainage when the snow begins to melt. Crews continue to monitor all roads for icy spots and drifting snow. Usually, an application of salted sand is applied to all streets so that the riding surface remains drivable.

## APPENDIX B - Town of Barnstable

### Snow and Ice Control Operations Plan

#### I. Mission:

The mission of the Department of Public Works is to remove accumulations of snow and ice from town, county and most private roads, municipal parking areas and some town sidewalks/bike paths as rapidly and efficiently as possible. The safety and mobility of the community is of the utmost importance during any type of precipitation that may form ice and/or accumulating snow. The Department must respond immediately to each storm and the varying storm condition that may occur throughout the winter season to first maintain public safety on our roadways and as soon as possible to leave all other areas in an accessible condition.

#### II. Responsibilities:

The Department, through its Highway Division, has responsibility for snow and ice removal from:

- A. 461 miles of roads comprised of 271.19 miles of town roads and 190.05 miles of private roads.
  - 1. 151 miles or 30% of the roads are treated as primary and collector streets
  - 2. 310 miles or 70% of roads are treated as secondary or residential streets
  - 3. Private roads other than those listed on the “do not maintain list” receive snow and ice removal. Private driveways, easements, mutual access driveways and roads closed to the public do not receive snow and ice removal.
- B. 54 municipal parking areas containing 46 acres
- C. 90 miles of town sidewalk and four miles of bike path. Salt and sand treatment is limited to business districts.
- D. One major and four minor business districts.

#### III. Goals:

The Department's goal is to remove a large portion of the accumulated snow and ice from its areas of responsibility. The removal will be of sufficient width and depth to allow the adequately prepared public to travel at reduced speeds throughout the town. Removal is accomplished by applying a sand/salt mixture (assisted by liquid deicer at low temperatures) at various rates to create traction and speed the melting process. When required, plowing is used to remove excess or large accumulations of snow and ice in conjunction with the sand/salt treatment. The Department does not attempt to achieve bare pavement during any storm. The practice is far too expensive and the large quantities of salt required would be detrimental to the environment.

Under most circumstances, a large storm of 8" to 12" will require the following time frames to reach the previously described goals after the end of the precipitation.

- A. Primary or collector streets - 8 hours.

B. Secondary or residential streets - 16 hours

C. Sidewalks/Bike paths - 48 hours

D. Snow removal from business districts - 48 hours when needed. In the case of storms continuing for periods of 24 to 48 hours with accumulations of more than 12 inches, time delays proportionate to the depth of snow and length of storm will greatly increase the times listed in items B, C and D above.

#### IV. Authorization:

The Department operates pursuant to various state and municipal laws.

A. MGL Chapter 44 Section 31D pertains to incurring liability and making expenditures in excess of the available appropriation for snow and ice removal.

B. MGL Chapter 40 Section 6C pertains to appropriation of money for snow and ice removal from private ways.

C. Fiscal year snow and ice operating budget -pertaining to the available appropriation for snow and ice removal.

D. Town of Barnstable General Ordinance Article XII -pertaining to prohibitions of private property owners placing snow or ice onto a street or sidewalk and the removal of vehicles interfering with snow and ice operations within public ways.

#### V. Department Organization:

The Department officials, responsible for the administration, supervision and coordination of snow and ice control:

A. The Director of DPW is the official responsible for the oversight of the overall snow and ice control program.

B. The Highway Supervisor under general direction of the Director is the DPW official responsible for the direct supervision and administration of the operations.

C. The Highway General Foreman under the general direction of the Highway supervisor is the DPW official responsible for the detailed planning, organizing and coordinating operations.

#### VI. Situation:

The DPW Highway Division is located at 382 Falmouth Road, (Route 28), Hyannis, MA 02601. Telephone 790-6331 for snow and ice removal and 790-6330 for all other matters. Under normal conditions the Division operates on a five-day schedule, Monday through Friday, from 7:00 AM to 3:30 PM.

A. The Department of Public Works resources available to the Highway Division for snow and ice control are comprised of:

1. 52 DPW personnel (includes supervisory/administrative/mechanical repair staff and equipment operators).

2. 60 pieces of DPW equipment and 171 pieces of contractual equipment ranging from small sidewalk plows and pickup trucks to ten wheel trucks and heavy construction equipment.
3. A command center used to coordinate and communicate with DPW/Contractual personnel, fire/police personnel and the general public is located at the Highway Division Headquarters.
4. An equipment maintenance shop for repairs for DPW equipment during operations is located at the Highway Division Headquarters.
5. 3,000 tons of sand, 3,500 tons of salt, 300 tons of sand/salt mixture and 5,000 gallons of liquid deicer are stored at the Highway Division. 1,000 additional tons of sand/salt mixture and 2,000 gallons of liquid deicer are located at the Solid Waste Division.

## VII. Concept of Operations:

The Department's snow and ice operations are divided into four different phases.

### A. The preparation phase includes the following areas of preparation.

1. Pre-winter DPW equipment maintenance repairs and overall planning review etc beginning in September.
2. Employee training, contractor hiring, route designations and stockpiles of materials, fuels etc, are completed during October and November.
3. Supervisory personnel monitor weather forecasts and conditions from November to mid-April.

### B. The readiness phase is activated when weather indicators warn of impending precipitation that may form ice and/or snow.

1. Supervisory personnel review the various forecasts for precipitation start time, duration and amount. Based on these indicators and local conditions, an opening operational strategy is formed.
2. DPW personnel in all divisions are notified of the impending conditions and equipment is checked for readiness.
3. During off duty hours, usually in the late evening and early morning hours, a snow and ice watch, consisting of 2 highway foremen, may be required due to the uncertainty of the precipitation start time. In addition, the police department notifies Highway personnel when snow and ice conditions begin to occur.

### C. The Control Phase is activated as precipitation begins or as conditions warrant. During this phase various levels of response may be required.

1. Level One - sanding crews are dispatched to apply sand and salt on the primary and collector streets. These roads will receive constant attention throughout the storm. Secondary or residential streets and municipal parking areas are evaluated and if required, sand and salt are applied as the precipitation ends. In some case scenarios this

may commence without any precipitation present for the sole purpose of pre-treating roads for a more effective response.

2. Level Two - when it becomes evident through local conditions and up-dated weather forecasts that accumulating snow will be excessive, DPW/contractual personnel are dispatched to those areas that require plowing, including the sidewalks in the business portion of Main Street, Hyannis. As the storm ends and plowing is completed, sand and salt is applied to the effected areas. In some case scenarios contractors may be asked to respond to a meet point and standby before any precipitation is present for the sole purpose of a more effective response.

3. Level Three - addresses storms (blizzards) that exceed the available department and contractual resources. During this level, the Department's primary goal will be to keep major thoroughfares open for emergency vehicles. Private contractors with heavy construction equipment are hired to augment the existing forces. If an emergency is declared by the Town Manager, the Town of Barnstable Emergency Operations Plan will take effect. Assistance is requested from the Massachusetts Highway Department, Massachusetts Emergency Management Agency and Federal Emergency Management Agency. Communication and coordination with other town agencies and departments is continually maintained. Every possible resource available to the department is used to stabilize the condition and return the areas of responsibility to the established goals.

D. The cleanup phase is activated as the control phase nears completion.

1. Miscellaneous sanding and/or plowing duties are performed by DPW employees as required.

2. If required, sidewalk plowing begins with an emphasis on village centers and sidewalks adjacent to and radiating from public schools.

3. If required, as determined by the Director in communication with the Town Manager, excessive accumulations of snow are removed from the village business districts.

#### VIII. Interaction with Town Agencies/Public:

For the Department's plan to be successful, coordination and communication with other agencies and the public is of the utmost importance.

A. During any snow and ice operation

1. Police and fire personnel requesting assistance receive timely response by DPW equipment.

2. Public requests for assistance are reviewed by supervisory personnel for authenticity, type of response required and priority.

3. When weather conditions dictate the closing of municipal buildings or other facilities, the Town Manager will be notified, through the Director, of road and parking lot conditions by 5:00 AM or as soon as reasonable prior to scheduled openings for this decision. The Superintendent of Schools is advised of the present road conditions prior to school opening.

4. Updated road/storm conditions and the Department's progress in the operation are reported to the public and the news media upon request.

B. During severe storms

1. When plowing is curtailed due to low visibility, DPW equipment is based at the village fire stations to assist in emergency responses that may be required.
2. Town agencies having four-wheel drive vehicles assist in the effort to maintain the public safety and mobility.
3. When an emergency is declared by the Town Manager, the Town of Barnstable Emergency Operations Plan will Take Effect.
4. As Specified In The Town Code Snow And Ice removal (Adopted 3-61965, approved 3-25-1965 (Art. XII of Ch. III of the General Ordinances as updated through 7-7-2003, Section 206-5 Snow and Ice on Street Restricted (amended 11-6-1978, approved 6-1979), No person shall throw or put snow or ice into a street or on a sidewalk unless especially authorized by the Superintendent or his designee.

IX. Proviso:

The Department will, as weather conditions dictate, alter its plan of attack for a specific storm when the public interest and safety are better served.

## APPENDIX C - Town of Dennis

Minimum standards for private ways to be eligible for emergency winter maintenance, consisting of snow plowing and sanding only, in accordance with Massachusetts General Law Chapter 40 Section 6c; adopted by The Board of Selectmen, August 4, 2009.

1. This policy is in effect for private ways open to the public. Private ways restricted or closed to the public by signage or gates more than one week per year shall not be eligible for snow removal services from the Town in accordance with Mass. G. L. c40, s6c. Examples of signs posted on private ways closed to the public include “No Trespassing”, “Private-Residents Only”, or “Keep Out”, etc.
2. The minimum width for the travel surface of any private way shall be no less than (10’) feet wide and open to the public.
3. The height clearance shall be no less than fourteen (14’) feet from the road surface. This is to ensure access to snow plows and emergency vehicles.
4. The roadside shoulder shall be free of any obstacles, on both side of the way, including vegetation, fences, mailboxes, stonewalls, rocks, shrubs, trees or any other object that may interfere with snow removal equipment. This shoulder shall be maintained no less than two (2’) feet on both sides of the roadway.
5. There shall be an overall minimum of fourteen (14’) feet by fourteen (14’) feet corridor free from any vegetation and foreign objects. Shell and stone roadways will not be plowed.
6. There must be ample room for emergency vehicles to turn around if the road is a dead end. Space at the end of the road should be of sufficient size for emergency vehicles or town plows to be able to turn around in a safe manner.
7. Paved or unpaved private roads shall have no defects (potholes or ruts) exceeding two (2”) inches in depth. Defects in the road surface such as potholes or ruts must not deviate from grade more than two (2”) inches. Please contact the Department of Public Works (DPW) for possible remedy options (petition for grading, temporary repair, and acceptance of private way). When and if the Town appropriates funds, the Town may make emergency repairs to private roads that are integrated with the public road network at the discretion of staff in order to protect the Town’s investment in snow removal equipment.
8. Manhole covers, catch basins and roots shall be at or below grade.
9. The DPW will perform yearly inspections of all private roads and post a list of roads on the Town’s website and local newspaper by September 15th that do not meet the minimum requirements. The homeowners will be required to make repairs. When the repairs are completed the DPW will, upon request, re-inspect a roadway to ensure that it complies with standards and notify homeowners of their findings. If all minimum standards are met plowing and sanding services will be provided.
10. The Town of Dennis, its employees or sub contractors shall not be held liable for any damage to private property improvements while performing snow removal operations. Improvements such as, but not limited to, stone walls, fences, irrigation lines, cobblestones, mailboxes, lawns, shrubs or trees adjacent to the way and damaged as a result of snow removal operations will not be repaired or replaced by the Town or its agents.

## APPENDIX D - Town of Eastham

Minimum standards adopted by The Board of Selectmen, at a public hearing on Tuesday, September 8, 2015.

1. For the first year of the program (2015-2016) only paved private roads will qualify for snowplowing.
2. The minimum width for any private road shall be no less than twenty (20') feet wide and it must be accessible by either a public road or a private road that will also be plowed.
3. Roadside clearance of any obstacles, including vegetation, shall be no less than two (2') feet either side. This includes, but is not limited to, fences, mailboxes, stonewalls, rocks, shrubs, trees or any other object that may be damaged by snow removal equipment. It also includes a shoulder that inhibits the movement of snow from the road to the shoulder during plowing.
4. Height clearance shall be no less than fourteen (14') feet from the road surface. This is to ensure that branches or any other objects over hanging the roadway, when laden with snow, do not limit access of snowplows and emergency vehicles.
5. There must be ample room for emergency vehicle to turn around if the road is a dead end. Space at the end of the road should be of sufficient size for emergency vehicles or town plows to be able to turnaround in a safe manner.
6. Paved private roads shall have no defects (potholes or ruts) exceeding two (2") inches in depth. Defects in the road surface must not deviate from grade more than two (2") inches. This includes, potholes, ruts, protruding manhole covers, catch basins and roots.
7. All private roads shall have a visible street sign, which must be an acceptable standard green reflective metal signs with white letters. This sign is to be mounted on a round or square metal post with appropriate mounting cap. Please contact the Highway Department for information on companies that supply these materials.
8. If accepted, the road will be plowed after a minimum of 2" of snow has fallen. Private roads will be plowed only after main roads and public roads have been plowed and cleared. No sanding services will be provided for private roads.
9. Each September, the town will perform yearly inspections of all private roads that have applied for plowing. The results of these inspections will be listed on the town's website. Should a road not meet minimum requirements, the homeowners on the road must correct the deficiencies and make necessary repairs. When the repairs are completed, town staff will, upon request, re-inspect a roadway to ensure that it complies with standards and notify homeowners of their findings. If it does, plowing services will be provided.
10. The Town of Eastham, its employees or sub contractors shall not be held liable for any damage to private property improvements while performing snow removal operations. Improvements such as, but not limited to, stone walls, fences, irrigation lines, paving, drainage systems, cobblestones, mailboxes, lawns, shrubs or trees adjacent to the way and damaged as a result of snow removal operations will not be repaired or replaced by the Town or its agents.

## APPENDIX E - Town of Brewster

The following standards were compiled in an effort to address Snow and Ice removal operations on private roads/ways in the Town of Brewster. In particular, surface conditions, widths, clearances, and roadside obstacles are identified as obstructions to safe, cost-effective snow and ice removal operations. These issues inhibit emergency response for rescue personnel and can cause considerable damage to snow plow equipment. In some cases, damaged vehicles/equipment may need to be removed from the snow removal effort. Some of these items cause delays in the removal process, which in turn causes delays in our efforts in other parts of town. The minimum standards are as follows:

1. Inspections will be completed by July 31st of each year. Results (i.e. failed roads/ways) will be posted on the Town Website and in the Cape Codder in September. Re-inspection of failed roads/ways will be completed by November 1st of each year providing ample time to address deficiencies. Substandard roads/ways will not be plowed. A third inspection will be completed upon notice that the work is complete.
2. The minimum travel width shall be ten (10) feet.
3. Roadside clearances shall be two (2) feet from the edge of pavement on each side. Vertical clearance shall be no less than twelve (12) feet along the traveled portion of the road.
4. All roadways (paved and unpaved) shall be free of defects (potholes or rutting) exceeding three (3) inches in depth. All potholes shall be filled to the approximate level of the surrounding roadway.
5. All private roads/ways shall have a visible street sign and be open to the public.
6. There must be ample room for an emergency vehicle to turn around if the road is a dead end. Space at the end of the road should be of sufficient size for emergency vehicles or town snowplows to be able to turn around in a safe manner.
7. The entire length of road/way shall meet these standards. Sections of the road/way, beyond a location where any of these standards are not met, will not be plowed.

The minimum standards outlined above are meant to serve as a guideline. It is understood that there will be exceptions to these standards. Exceptions will be determined on a case-by-case basis, and must be in keeping with the general intent of this policy.

It is the town's intention to undertake inspections during the summer of 2008. The failed or deficient roads will be posted as described in the aforementioned plan. However all roads will be plowed during the winter of 2008/2009. We will again re-inspect these roads in the summer of 2009, following the procedure as laid out in the plan; and only plow those roads that meet these guidelines in the winter of 2010.

## APPENDIX F - Town of Wellfleet

Policy is on hold.

## APPENDIX G - Town of Provincetown

A policy has not been implemented as of yet.

## APPENDIX H - Town of Chatham

The following are the minimum standards to prevent damage to Town equipment during snow and ice removal. If private roads do not meet these requirements for the winter of 2014 / 2015, plowing and sanding services will not be provided.

1. The travel lane for any private road shall be no less than (12) feet wide.
2. Roadside clearance of any obstacles including vegetation shall be no less than two (2) feet either side.
3. Height clearance shall be no less than (12) feet from the road surface.
4. There must be ample room for emergency vehicles to turn around if the road is a dead end.
5. Paved or unpaved private roads shall have no defects (potholes or ruts) exceeding two (2) inches in depth.
6. All private ways shall have a visible street sign, and be open to the public.
7. The Highway Department will perform yearly inspections of all private roadways each September and a reinspection in the first week of December which will be posted in the Cape Cod Chronicle.