Highway Factors Attachment – New Jersey Turnpike Authority Winter Operations – Snow and Ice Control Manual

Mount Pleasant, PA

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NEW JERSEY

TURNPIKE AUTHORITY

MAINTENANCE DEPARTMENT

PARKWAY & TURNPIKE DIVISIONS

Winter Operations-

Snow and Ice Control Manual

December 16, 2015

CHAPTER I
GENERAL PROGRAM

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INTRODUCTION

The purpose of this Manual is to disseminate policies, instructions, techniques and information pertaining to snow and ice control operations of the New Jersey Turnpike Authority.

This Manual is intended to serve as a general guide and reference to promote uniformity of practice for snow removal and ice control. It is neither intended to discourage individual initiative nor is it intended to restrict the flexibility of the operation.

The Manual has been prepared in several sections appropriate for separate selective distribution, where desirable. It will be revised and updated, when and where practical, to keep current with improved methods and changes as they develop.

It is the intent that the data contained herein will be of such a nature that the supervisor will be able to operate within any unit under any weather conditions encountered.

It is the basic policy to maintain a "BARE PAVEMENT" at all times consistent with storm conditions.

SECTION I – SNOW CONTROL CENTERS

1.1 PURPOSE

A central snow control room will be established and maintained at the Statewide Traffic Management Center (STMC). One division snow control room will be established in each of the four divisions to assist in the various activities associated in snow removal and ice control. These snow control rooms are to be used for any ice and snow condition or other emergency when required, or as directed by the Director of Maintenance. These areas are Turnpike Northern Division and Southern Division, Parkway Northern Division and Southern Division.

1.2 RESPONSIBILITY

A. STMC SNOW CONTROL ROOM

The Director of Maintenance or his designee shall be responsible for operation of the STMC Snow Room. The STMC Snow Room will serve as a center of coordination, communications, and information regarding roadway snow removal and ice control operations.

B. TURNPIKE AND PARKWAY DIVISIONS – NORTH & SOUTH

Each Roadway Superintendent shall be responsible for the operation of a Division Snow Room. The Division Snow Room will direct and coordinate all snow removal and ice control activities within its jurisdictional limits, and will maintain communication with the STMC Snow Room.

1.3 OPERATION

A. STMC SNOW CONTROL ROOM

The STMC Snow Room will be activated whenever a storm alert exists and one or more of the Division Snow Rooms are opened and remain in continuous operation for the duration of the storm until the clean-up stage is reached.

Personnel assigned shift schedules and responsibility for its operations will be in accordance with the snow room schedule which is maintained by the Superintendent of Snow Operations or alternate in his absence which is the Building Maintenance Manager or Chief Maintenance Engineer.

The STMC Snow Captain designated for each shift shall have the following responsibilities.

1. During his/her period of assignment, he/she shall be readily available for contact for emergency purposes by Traffic Operations, Director of Maintenance or his designee.

2. Upon being so contacted, he/she shall notify, alert or activate such individuals as may be required (Roadway Superintendents, Supervising Crew Managers, Operations, State Police, etc.)

B. DISTRICTS/DIVISIONS

The Roadway Superintendent upon being alerted will evaluate the information and, if conditions warrant, activate the respective District/Division personnel. The Superintendent will immediately notify the Snow Captain in the STMC Snow Room of the action taken. Upon being activated, the Division Snow Room will go into continuous operation for the duration of the storm.

Weather, road conditions, manpower and equipment status reports will be sent to the STMC Snow Room every hour on the hour after the Division Snow Room operations begin.

Extraordinary conditions such as roadblocks, traffic tie-ups, etc. shall be reported immediately to the STMC Snow Room. Each report shall include remedial action instituted by the District, or required by State Police. As soon as the condition returns to normal, the STMC Snow Room must be notified.

Manpower and Equipment reports will be sent to the STMC Snow Room as soon as possible whenever a shift commences and at significant changes during the shift.

Each Division Snow Room will call its own contractors after notifying STMC Snow Room in accordance with its needs and in accordance with its organized plans. Contractor call-out and plowing times along with the number of trucks reported for plowing or standby shall be reported to the STMC Snow Room and updated with the weather and road conditions report. Time-off and stand-by times shall be included in the report. Any unusual circumstance involving contractor operations shall be noted.

1.4 RECORD OF OPERATIONS

All Snow Rooms shall keep a bound log of their winter operations. All complaints, time of alerting, shift changes, personnel on duty, all outside phone calls and notations of important events occurring are to be entered in this log. At the end of each shift, the log shall be signed by the Shift Supervisor or Superintendent with a copy being sent in the final storm report.

SECTION II – WEATHER

2.1 WEATHER FORECASTS

Weather forecasts will be provided by a third party forecast service and distributed via email to key personnel and staff on a daily schedule as follows:

a. 5:30 a.m. (prior to peak morning commuter travel period & shift changes)
b. 2:00 p.m. (prior to peak evening commuter travel period &
c. shift changes)
d. 10:00 p.m. (shift changes between 9 p.m. & 12:30 a.m.)

In the event of adverse weather in the forecast, information will be updated on a three (3) hour cycle. If the forecast indicates weather conditions which would indicate the need to activate snow and ice control activity, the weather service will issue a “WARNING” with the anticipated conditions, start of precipitation and details for specific maintenance districts.

Once a storm is near or underway (when we have activated manpower, and at least one District is to be at least on a stand-by basis) the weather forecast will be updated on an every three hour basis.

Once a storm has passed and the weather service anticipates a return to normal conditions, the weather service with issue an “ALL CLEAR” with the anticipated conditions, and details for specific maintenance districts.

2.2 FORECAST TERMS

In all radio transmissions, phone calls, and reports, the following standard terms should be used in order to describe the weather conditions.

A. FREEZING FOG

Dense fog which develops with below freezing temperatures can deposit a thin layer of ice on road surfaces even though there is no precipitation.

B. FREEZING RAIN/FREEZING DRIZZLE

Glaze created when rain or drizzle freeze at the surface or on objects near the surface; such as, trees, bridges and power lines.

C. SLEET

Water droplets freeze into ice droplets well before reaching earth’s surface.

D. SNOW

A continuous precipitation event, lasting several hours, varying in intensity but falling hard enough to accumulate if temperatures are low.

E. SNOW FLURRIES

Sporadic snowfall, not continuous in nature, tending to start and stop. Snow flurries can fall intermittently for long periods and not accumulate. Snow showers/squalls occur in localized areas and may result in some accumulation.

F. SPECIAL STATEMENT

Issued when action might be required but situation is too uncertain or localized to warrant a Storm Warning. This statement will also be used for special events other than ice and snow; such as, flooding, high winds, severe thunderstorms, etc.

G. STORM ALERT

Indicates the potential for a snow and ice event scheduled to occur 6 to 36 hours away. An alert is to be used for informational or planning purposes and is not a call to mobilize.

H. STORM WARNING

Indicates an excellent chance for a major snow or ice event which will require immediate action. This statement will also be used for special events other than ice and snow; such as, flooding, high winds, severe thunderstorms, etc.

I. TIME

When reporting time, it should be provided as standard time only.

J. ALL CLEAR

Issued when the potential for snow and ice has ended. The statement may be specific to maintenance districts or roadway. This statement will also be used for special events other than ice and snow; such as, flooding, high winds, severe thunderstorms, etc.

2.3 WEATHER INFORMATION

During the storm, updates shall be provided by the STMC Snow Room. If there are significant changes or at the request of the Director of Maintenance, the information shall include but not be limited to the following:

1. General storm conditions
2. Duration of storm
3. Precipitation expected, to include type; and if snow, accumulations
4. Times of critical changeovers in precipitation
5. Temperatures; current and expected
6. Wind velocity and direction
7. Additional accumulations expected and probability
8. Icy or freezing conditions on viaducts or bridge decks with estimated times
9. When necessary, humidity factors and fogging conditions

SECTION III – CALL OUT GUIDELINE

3.1 PREDICTED STORMS

A. REGULAR WORKING HOURS

1. STMC Snow Room

Upon receipt of a weather forecast in which a storm activity is predicted, the Snow Captain will proceed as follows:

All alerts, warnings, or special statements will be received by the Snow Captain and, also, immediately transmitted to the affected District Offices. Ongoing communications with the affected Districts will be maintained as updated information is received throughout mobilization or until storm cancellation (All Clear) occurs.

2. Districts

Upon receipt of such reports, the Superintendent will evaluate the information with the Supervising Crew Manager(s), and if conditions warrant, activate in accordance with the prepared plan for the conditions. He will notify the Snow Captain if any action is taken.

3. Field Observation

Should a serious and threatening weather condition be observed in any of the Districts without that District having been alerted of such conditions, that District shall immediately activate itself, contact the STMC Snow Room and advise the Superintendents, or their designees, and other Districts which may be affected. The Superintendent of Snow Operations will advise the Snow Captain on duty and the Director of Maintenance.

B. NON-WORKING HOURS

1. Alert

This situation means a storm is expected to arrive in four hours. The Superintendent of Snow Operations will communicate with the Superintendents with a storm update.

2. Warning

Should the Superintendent of Snow Operations receive a weather warning from our Weather Service or via Traffic Operations, which receives weather reports via telecommunications during non-working hours, he will immediately contact the Superintendent in the affected area and advise of the updated weather forecast. The Superintendent will determine if activation is necessary.

Prior to each snow season, it will be the responsibility of the Superintendent of Snow Operations, or his designee, to discuss this plan of activation for call outs during non-working hours.

3.2 NON-PREDICTED STORMS

A. REGULAR WORKING HOURS

1. STMC Snow Room

After being contacted by the weather service, Operations or Districts, the Snow Room Manager will activate the Command Center Snow Room and transmit information to the affected Districts.

2. Districts/Divisions

Upon receipt of such reports, the Superintendent of Snow Operations will evaluate the information and, if conditions warrant, activate in accordance with the Districts prepared plan under these conditions. They will then immediately notify the STMC Snow Room of the action taken.

3. District or Field Observation

Should a serious and threatening weather condition be observed in any of the Districts without the District having been alerted of such condition, that District shall immediately activate itself, contact the area Superintendent and Superintendent of Snow Operations and advise the other Districts. The Superintendent of Snow Operations will notify the Director of Maintenance and a decision will be made whether to activate the STMC Snow Room.

4. During non-working hours when non-predicted weather conditions cause **isolated** road problems, reports are received via radio or phone by Traffic Operations. Traffic Operations will refer to the Emergency Call-Out roster and notify the appropriate Superintendent or Crew Manager who, in turn, will contact the necessary Maintenance personnel.

SECTION IV - EQUIPMENT

4.1 EQUIPMENT READINESS

The proper operation of plows and spreaders as instructed by the District Equipment Managers and Equipment Trainers shall be the responsibility of the Roadway Superintendent.

Heavy drift clearing should be attempted only with equipment of appropriate size and type, adequately ballasted or otherwise equipped for such work. Contractor's trucks must be ballasted and equipped according to specifications and may be rejected if not properly prepared for snow removal work.

At the end of each emergency, equipment will be inspected and any necessary repairs made as soon as possible. Snow Representatives will inspect plows on contractor's trucks upon completion of plowing. If repairs are needed, appropriate District Garages should be notified immediately giving plow number and description of parts needed.

All Contractors blade edge replacements are to be reported by the Snow Representative in charge of the section, giving Contractors name, snow section, plow number and number of edges in need of replacement.

4.2 EQUIPMENT CALIBRATION

A. CHEMICALLY TREATED SALT

A liquid dispensing unit or truck mounted units shall be calibrated prior to the snow season according to the instructions contained in the Liquid Chemical Dispensing Unit User's Manual. The calibration of the unit in the Yard is dependent on the front end loader bucket size assigned.

B. SPREADER CALIBRATION

Prior to each winter season, every spreader truck must be calibrated to insure the selected application rate is attained during a storm. Periodic calibration checks of the equipment must be performed during the winter season in order to detect a possible minor equipment malfunction which may invalidate calibration settings previously determined.

Calibration of spreaders should be done using calibration work sheet in accordance with procedures put forth by the Equipment Section.

C. MAGNESIUM CHLORIDE CALIBRATION (ANTI-ICING)

A liquid chemical dispensing unit shall be calibrated prior to the snow season according to the instructions contained in the user's manual. Periodic calibration should be checked during the snow season.

4.3 WINTERIZATION OF EQUIPMENT

Items completed for Winterization of Dump Trucks:

1. Power wash and degrease truck chassis and engine.
2. Drain fluids.
3. Clean/Replace and grease fittings.
4. Clean/Replace hydraulic hoses and fittings.
5. Install filters: oil, fuel, air, coolant, separator, hydraulic, transmission (inner & outer), and air compressor filter.
6. Blow out and clean radiator and cooler.
7. Replace wipers, check lights, torque tires, clean, prime and paint rusted areas; undercoat chassis, clean fuel lines, install new manual fuel primer units, and paint engine.
8. Grease all fittings. Clean, free up and lube tail gate, handle and linkage.

9. Check control box; check and set body height and alarm buzzer.
10. Remove batteries; clean battery box, cables, and terminals, clean and check batteries.
11. Clean and lube pintle hook, replace pintle lock pin. Check/Replace glad-hands.

Items completed for Winterization of Plows and Spreaders:

1. Clean, mount, grease and adjust.
2. Clean/Replace hydraulic lines and fittings.
3. Drain and replace auger motor oil.
4. Clean and secure ground speed sensor.
5. Check all functions.
6. Calibrate and set control box.

4.3A BODY VIBRATORS:

All dump body vibrators shall be inspected and tested for proper operation. Switches shall be connected for operation during pre-season preventative maintenance and disconnected at the end of the season when salt spreaders are disconnected.

4.4 DUMP BODY HEIGHT

During pre-season inspection and preventative maintenance all dump bodies shall be inspected in order to ensure maximum height does not exceed thirteen (13) feet. All body height limit switches shall be inspected for proper operation. Key switches shall be activated for winter operation. Key switches shall be deactivated at the end of the season when salt spreaders are disconnected.

4.5 PLOW INSPECTION

Prior to the beginning of the winter season and following each recurring storm, all snow plows, both Department and Contractor assigned, should be inspected to see that they are in operable condition. Any faults in the equipment found during the inspection should be noted and steps taken immediately to make required repairs. This should be done using the following guide:

A. MOLD BOARD

1. Check for bends or cracks
2. Check condition of cutting edge, replace if needed
3. Check bottom of mold board, behind cutting edge for excessive wear
4. Check plow sides and (curb guard) wrap around(s) for excessive wear
5. Prior to the snow season, cover front of mold board with aluminum paint. If the mold board is rusty, remove the rust with a wire brush before applying the paint

B. SEMI-CIRCLE

1. Check for bends and cracks
2. Check for loose rivets and bolts

3. Check for mushroom condition. The mushroom assembly should be free to rotate in the housings. It should also be adjustable both up and down (check this by actually turning the adjustment handle and observe its motion). While making that check, make sure that the threads are not stripped
4. Grease the caster assemblies (when fittings are provided), caster stems, caster stem adjusting screws, and trunnion plates. During plowing, caster assemblies shall be lubricated every eight (8) hours
5. Check the trip springs
6. Check the lifting chain

C. PLOW PUSH FRAME

1. Check for bends or cracks
2. Check for loose rivets bolts
3. Lubricate the forward eye bar and rear latch pin swivel (plows with large semi-circle only). If fittings are provided, grease should be used. If there is no presence of fittings, standard lubricating oil is sufficient. Eye bar and latch pin swivel should be lubricated every eight (8) hours during plowing operations.
4. Check truck frame where push frame is attached

D. HYDRAULIC SYSTEM

1. Check the oil level
2. Check the pump condition and operation
3. Check the lift ram condition and operation
4. Check the condition of hydraulic hose
5. Check the hydraulic system for leaks

E. LIFT FRAME

1. Check for bends, cracks, and loose bolts

F. CUTTING EDGE

1. Check the cutting edge bolts. If they are loose, tighten them. If they are missing, replace them.
2. Replace the cutting edge when worn or damaged. When the cutting edge is replaced, replace the wear shoe and wrap around curb guard, as necessary.

G. SNOW PLOW GENERAL

1. On contractor plows, check the presence of two attaching rivet pins (push frame to lift frame) and one semi-circle locking pin.
2. Make an overall visual check of the plow for any obvious defects that may not have been spotted on the individual checks such as, poorly matching components, misalignment or missing parts.
3. The entire plow shall be painted each off-season, if required. The plow face, the caster adjustment screws or mushrooms, or

hydraulic ram pistons are not to be painted. The caster adjustment screws should be lubricated with grease. The plow face should be coated with aluminum paint. The hydraulic piston should be placed in the retracted position.

4. Power reversing snow plows have similar check points and should be inspected.

4.6 PLOW HANDLING

A. STORAGE

When the plows are in operating condition, they should be placed in the yard so that they can be easily mounted on the truck during a snow storm. A good method for doing this is placing the plow on blocks so that the connection tabs line up perfectly with the tabs on the truck that it is assigned to. This line up should be made with the truck loaded since it will probably be loaded when the plow is attached during a storm.

Plows are stored in a “ready” position so as to permit a truck to drive up to the plow. This will minimize hookup time.

Alternate off-season storage during the period April 15th to November 1st, should be as follows:

B. LUBRICATION

The plow should be properly lubricated on or about November 1st each year - according to Section 4.3 of this Manual, if applicable. Additional lubrication shall be added during the plowing season in accordance with Section 4.3.

C. MOUNTING

Have a sufficient number of cotter keys or hitch pins on hand so that the plow can be connected properly. See that all necessary accessories are available from District stock rooms. The plow should be mounted on the truck and the operational parts tested. This means raise and lower the plow, checking the hydraulic system and if it is a reversible plow, checking the rotation by hydraulically removing the plow to see that it is functioning. Test the trip springs to see that they are working. Any malfunctions should be corrected immediately. The plow and truck assembly should be completely ready for operation by November 1st each year.

D. ADJUSTMENT

While the plow is mounted on the truck, the mushrooms should be adjusted so that the cutting edge is properly adjusted above the pavement in front of both mushrooms in accordance with the type blade being used.

Check all lights to see that they are operable and adjust the plow lights so that they will illuminate the proper area in front of the plow.

4.7 ASSIGNED CONTRACTOR PLOWS

All contractor assigned plows and plow parts should be checked. Receipts should be given to the contractor for any equipment removed from this yard.

Caution should be taken with plow parts. If the ram is left extended, it will rust and not work the next season. Combination lift frames should be checked carefully. If bent or cracked, the District Garage should be notified.

Some contractors turn in all their small equipment for storage as well as their plows. These pieces must be marked so that the contractor gets the same equipment back for the next season.

When a contractor gives up his section, all plows and equipment are to be brought to the respective District for reconditioning, thus insuring a new contractor receiving said equipment in good condition. The District should check to make sure all equipment and plows have been returned by the old contractor, thus discouraging false claims on lack of or loss of equipment. Further checks should be made by District personnel who are familiar with all equipment.

4.8 OPERATION OF TAILGATE TYPE SPREADERS (SWENSON)

The tailgate type spreaders are hydraulically operated and in-cab electrically controlled.

A. AUGER CHAMBER COVER PLATE

The auger chamber cover place is usually kept locked in a horizontal position. This permits the truck to be used for regular maintenance operations without filling the auger chamber.

When preparing the unit for spreading, place the cover plate in a vertical position. This then becomes an anti-spill plate and prevents the loss of material over the back wall of the spreader regardless of the position of the dump body.

NOTE: The anti-flow plate (salt plate) is used only when spreading. When spreading wet sand, cinders, etc., the anti-flow plate (salt plate) must be removed to allow sufficient feed of material.

B. DUMP BODY TAILGATE

Open the tailgate as wide as possible from the bottom and set the stop chains so that the tailgate will not bear against the cover plate in the vertical position.

C. SPINNER ASSEMBLY

The spinner assembly is hinge mounted which permits the assembly to be shifted from left to right. The location of the "fall" of material on the spinner disc controls the direction of the spread pattern. Shifting the spinner assembly to the far left gives a spread pattern behind the truck and to the extreme left. When the spinner assembly is shifted to the far right, then the spread pattern would be behind the truck and to the extreme right.

When the spinner assembly is set approximately in the center of the hopper opening, the spread pattern would be behind and to the left of the truck.

To increase the width of the spread and spinner speed, the selector knob should be turned clockwise. To decrease the width of spread, the knob should be turned counterclockwise until the desired width is obtained. The same procedure applies to the volume (auger) control. All or any changes can be made while the truck is in motion. Changing the speed of the spinner does **not** affect the speed of the auger or vice versa.

During the spreading operation, both the spinner and auger can be stopped by turning the electric "on-off" switch to the "off" position without changing the settings of the auger and spinner controls. It is recommended that both the auger and spinner control settings be left indexed to a setting other than one when the truck is not spreading (i.e.; at the end of the storm, leave both controls where normally used, never leave in "off" setting). It is further recommended that the spreader valve be exercised at least weekly. This can be done very easily with or without the spreader installed on the truck. With the truck engine running and the spreader control switch in the "on" position, slowly index the auger and spinner controls through each setting. This will cause the spools in the spreader valve to rotate and should prevent the buildup of rust in the valve body.

At the end of each storm, the entire spinner assembly should be removed from the truck and stored in a safe place. The two spinner hoses should be coupled together and the exposed couplings on the truck covered with the hydraulic coupler covers.

4.9 SPREADERS, CLEANUP AND STORAGE

After each storm, all spreading and plowing equipment incurring dump or hopper body, undercarriage, augur, spinner, etc., must be thoroughly cleaned of any de-icing chemicals including salt.

Immediately after April 15th and before June 1st, after spreaders are thoroughly washed, cleaned and dried; chip, peel and wire brush any rust spots, raised paint surfaces and bare metal on spreader to remove all loose paint, scale, excess oil

or tar. Spray or brush paint all bare metal surfaces with zinc chromate primer. After spreader is prepared for finish painting, the entire spreader shall be sprayed or brush painted. After spreader is cleaned and painted, apply heavy coat of oil to all chains. Arrange with District Garage personnel for spring checkup, repair and preparation for summer storage. Do **not** remove spreader from truck until garage personnel have inspected spreader and checked out operation of truck mounted spreader components.

Prepare spreader for summer storage as follows:

A. HYDRAULIC SPREADERS

1. Spreader to be set up for off the ground storage on platform stands, hangers, wooden blocks, etc. Make certain that spreader has proper drainage to prevent accumulation of rain water.
2. Connect hydraulic hoses together.
3. Protect hydraulic quick couplers from corrosion with grease.
4. Lubricate and protect all components with oil or grease, where necessary.
5. Prime and paint any parts that may have been marred during repairs. Use zinc chromate primer.
6. Throughout the off-season, both the spreader's auger and spinner control valves must be exercised. This can be done very easily without the spreader installed on the truck. With the truck engine running and the spreader control switch in the "on" position, slowly index the auger and spinner controls through each setting. This will cause the spools in the spreader valve to rotate and should prevent the buildup of rust in the valve body. Finally, it is recommended that both the auger and spinner control settings be left indexed to a setting most commonly used during normal winter spreading operations before the spreader switch is turned to the "off" position.

NOTE: Immediately after last summer operation, or not later than October 15th, all spreaders used in summer operations are to receive cleanup, mechanical checkup and repair to be ready for ice control operations by November 1st.

4.10 SPECIAL EQUIPMENT PREVENTATIVE MAINTENANCE

A. Every Crew Supervisor is to inspect all plows (and related equipment; such as, pumps, yokes, casters, mushrooms, etc.) assigned to their section.

B. Each Crew Supervisor will contact their designated District Equipment Manager and inform them as to what repairs are needed. The District Equipment Manager shall determine whether repairs will be performed in

the garage. The District Equipment Manager will make the necessary arrangements.

C. All snow fighting equipment is to be serviced, repaired and ready for operation by November 1st.

D. Whoever operates special equipment is responsible to perform the daily and/or weekly preventative maintenance checks that are required by the Equipment Section.

4.11 DUMP BODY HEIGHT

The Dump Body Height warning buzzer and switches should be adjusted and set by the garage personnel as part of the normal procedure for snow equipment preparation. The warning system is ***extremely*** important and should be checked before, during and after utilization of the dump body. All Supervisors must emphasize the importance of checking the body limit buzzer. Remember, the ***Operator is Responsible*** for the safe operation of his/her vehicle.

SECTION V – FIELD OPERATIONS

5.1 CREW MANAGERS/GENERAL FOREMEN DUTIES

A. GENERAL

Upon activation by the established call-out procedures, the Area Crew Manager/General Foreman or his designee is authorized to take such action as is necessary for the alleviation of roadway icing conditions and for the removal of snow from the road surface in order to achieve wet pavement as soon as practical following a storm. This action includes the initial mobilization of his assigned personnel.

When planning to combat winter storms, two types of storms must be recognized. First, a spreading type storm when total snow accumulation is less than 2". Most often no plowing is required for this type of storm. When required, it is generally to push snow or slush from the highway after the applied chemical has reacted and/or the storm has stopped.

Second, a general storm condition would be one where snowfall is anticipated to exceed 2" or more and plowing is an anticipated activity. During this type of storm, chemicals should be applied so that it will aid a plowing operation. Chemicals should be applied as soon as the storm starts. Spreading should follow immediately after each road plowing, if storm is continuing and temperatures are above 25 degrees.

The Area Crew Manager/General Foreman will apply their knowledge and experience in spreading chemicals and in plowing to properly maintain their assigned area during a storm.

B. CALL OUT AND OPERATIONS

Upon being alerted, the Area Crew Manager/General Foreman is to notify his crews and advise them of the action to be taken. During non-working hours, he is responsible for mobilizing his crews.

C. SCHEDULING

It is the responsibility of the Area Crew Manager/General Foreman to schedule the men and equipment so as to insure an effective operation. A spreading and plowing plan shall be prepared so that the emergency work required on the Parkway shall be taken care of in the best interests of the Authority, particularly the vehicular traffic.

During snow removal and ice control operations, the Area Crew Manager/General Foreman shall schedule meals and rest breaks for his crews in accordance with the Union Contract. No crew or crew member(s) shall take time for meals without first obtaining approval of the Area Crew Manager/General Foreman or Supervisor in charge.

Contractors will have their breaks and meals scheduled by the Authority snow rep after communicating with the Area Crew Manager/General Foreman or Supervisor of that area.

D. EQUIPMENT

Upon receiving an alert, the Area Crew Manager/General Foreman with their Supervisors are to make certain that all equipment is operational and in storm readiness condition. Equipment is to be left in storm readiness condition at the end of the normal work day period. Each Friday afternoon and before a holiday, all equipment shall have spreaders with spinners attached, and truck bodies ready for salt loading.

E. REPORTING

Each storm will have different stages. Those stages will be declared by the STMC Snow Room. Examples of these stages are:

Forecast
Alert
Response Level
End of Storm Event

When we are in a storm activity, it will be defined as Level I, II, III, IV, V, and VI, based on the intensity of the storm, the effort involved for snow and ice control operations and the involvement of contractors.

Definitions may include the amount or intensity of snowfall.

When we are in snow and ice control activities, the manpower reports should identify that manpower during the normal work day that is assigned specifically to snow and ice control, and other manpower shall not be included in the manpower reports.

Hourly Manpower reports are to continue from the time the storm “Alert B” phase has been declared until the “End of Storm Event” has been declared.

Forecast Stage –
To obtain enough information to advise people of an existing storm which is approaching our area or the potential of a storm and what effects this might have on our roadway.

Alert Stage
When enough information has been obtained from the forecast stage to give a good probability when precipitation can be expected to begin.

Level I - Early Warning/Spot Salting
When any individual or group of Districts are opened and with a minimal complement of equipment being manned and equipment is being checked and prepared to go into operation, but not yet dispatched. Supervisors are patrolling and monitoring air surface and roadway temperatures. When personnel are called in for a particular section in an area that needs attention (icy ramps, bridge decks, overpasses, etc.) isolated squalls, local storm conditions, etc.

Level II – Light Salting/Plowing – All Authority Spreaders
When any group of Districts are open with all Authority spreaders manned and deployed in anticipation of winter precipitation. Trucks are strategically positioned throughout roadway.

Level III – Full Salting & Plowing – Authority Staffing @ 3:2 Ratio
When any group of Districts are open with all Authority spreaders manned and deployed in anticipation of winter precipitation. Trucks are strategically positioned throughout roadway. The forecast duration of the weather event is anticipated to require driver relief in order to ensure the continuous operation of Authority equipment until roadway conditions return to normal.

Level IV – Full Salting & Plowing – Level III plus Spreader Teams
When Level III (above) is in effect and spreader contractors have been called in to supplement Authority resources.

Level V – Full Salting & Plowing – Level IV Plus Plow Teams

When Level IV is in effect and because of snow fall intensity and forecasted accumulation, contractor plow teams are required to supplement Authority resources.

Level VI – Full Salting & Plowing – Level V plus Loader Teams

When Level V is in effect and because of snow fall intensity and forecasted accumulation, contractor loader teams are required to supplement Authority resources.

Clean-up Stage - "All Clear" Issued by Weather Service

This stage will begin when all precipitation has stopped and the roadway is blacktop from fog line to fog line. Cleanup would include; working on shoulders, bullnoses, ramps and service areas and involve continued utilization of contractors or using just Authority resources as response levels are reduced and contractor assets released.

End of Storm

The STMC Snow Room will determine and advise every other snow room when a storm is considered over in each District. Once a storm is declared over, the following reports are due to the Superintendent - Snow Operations by noon the next working day:

1. Snow and ice reports with all necessary information completed.
2. Manpower availability reports completed properly.
3. Non-Maintenance verifications forms (when necessary)
4. Copy of snow log book for each event.
5. Any problems that existed during a storm including contractors, when necessary.

At the completion of each storm, Maintenance personnel will organize all information provided by each area and present each storm folder to Superintendent of Snow Operations office by 2:30 p.m. This procedure will be followed for Alert Levels, Isolated Stages and all levels of a Storm Activity. District reports shall be made directly to the STMC Snow Room within one (1) hour of mobilization; thereafter, according to the established schedule for the duration of the storm. If the conditions warrant, reports to STMC Snow Room may be made more frequently. The following information shall be included in the District report:

1. Manpower and Equipment
   Emergencies and equipment breakdown are to be reported at once.

2. Road and Traffic Conditions
   Emergencies such as heavy drifting and an imminent blockage are to be reported at once.

3. Weather

When snow or icing conditions initially develop, the area Snow Captains shall report the condition directly to the Command Center Snow Room. During storms producing general snow conditions, the rate of snow fall shall be reported as light, moderate, and heavy snow intensities. The snow accumulation reported shall be the average depth of snow determined by measuring two or more separate undisturbed locations off the roadway where no drifting is evident. All reports shall also include local temperature readings in Fahrenheit.

DISTRICT STORM STATUS REPORTS

An explanation of the codes being used for the District Storm Status Report is as follows:

1. Status of Event

This would be the various stages that a storm would be classified:

A. Forecast
B. Response Level
C. Storm Activity
D. Conditions
E. Temperatures
F. End of storm event

2. Operating Mode

What is being done (S-Salting Only; S/P-Salting and Plowing; P-Plowing, Standby, etc.)

3. Personnel Section

A. RP - Roadway Personnel
B. SP - Shop Personnel
C. CS - Crew Supervisor
D. MG/SC - Managers/Snow Captains
E. CL - Clerical
F. NR - Non-Roadway Operators
G. SR - Snow Reps
H. CCSR - Command Center Snow Room

4. Equipment Section

A. CDL - Equipment requiring commercial driver's license
B. LDR - Loaders
C. PKU - Pickup Trucks
D. GDR - Graders
E. DWN - Down equipment

5. Material Usage

Self-explanatory

6. Contractors

A. SUP - Supervisor
B. PLW - Plows (S - Stand-by / O - Operating)
C. LDR - Loaders
D. GDR - Graders
E. PU/A - Pickups with arrow-boards
F. SPR - Spreaders
G. SPR/PLW - Spreaders and Plows

7. Weather Conditions

CL-Clear; CD-Cloudy; R-Rain; SL-Sleet; SN-Snow; F-Fog

8. Prices

The prices at the bottom of each column are average prices for the entire roadway.

9. Road Surface

D-Dry; W-Wet; I-Ice; SC-Snow Covered; SL-Slush; IS-Ice Spots; DT-Dusting; SS-Soft Snow; PS-Packed Snow

10. Special Roadway Conditions

These sections are to be completed when there are problem areas. Specific definitions for travel status would be:

1. Unrestricted (All lanes and ramps open)
2. Passable (all lanes and ramps opened but sections snow covered)
3. Restricted (some lanes closed, but traffic still flowing)
4. Closed (sections of mainline and/or ramps closed to traffic). As much detailed information as possible should be provided in this section.

F. PLOWING CONTRACTORS

Area Snow Captains shall be responsible to report any contractor equipment discrepancies to the Command Center Snow Room.

5.2 SUPERINTENDENTS

Roadway Superintendents are responsible for their assigned Division and Districts. He/she will serve as the liaison between each of the Crew Managers/General Foreman and the STMC Snow Room, activating the Crew Managers/General Foreman when an emergency weather call out is received. He/she is to assist the Area Crew Manager/General Foreman with special needs,

coordinating equipment, manpower assignments and materials availability as well as providing status reports on weather and road conditions in his/her assigned geographical area. They must advise the STMC Snow Room when arriving to their area.

5.3 MATERIALS

A. DE-ICING MATERIALS

The choice of material is dependent upon weather and road conditions. Materials available include the following:

1. Sodium Chloride

Sodium Chloride (salt) is most effective for melting purposes at temperatures above 26 degrees F., becoming slower acting as the temperature drops.

2. Magnesium Chloride w/OBFE or Type I

A chemical, which when added to Sodium Chloride (salt), increases de-icing effectiveness at lower temperatures. .

3. Magnesium Chloride Type II

Magic-O is used as an anti-icing device which is applied to the roadway with a calibrated spray bar prior to a storm. Manufacturer suggested rates and application are to be followed.

4. Chemically Treated Salt

All salting material is delivered already pre-treated with magnesium chloride blended chemicals.

5. Miscellaneous Materials

As the state of the art changes relative to new de-icing materials becoming available for highway use, the Authority will utilize these materials under stringent controlled conditions.

B. APPLICATION OF DE-ICING MATERIALS

The proper use of chemicals, abrasives, or chemical abrasive mixtures is dependent not only on present roadway and weather conditions, but also on materials available. The effects of peak traffic periods, approaching nightfall or daybreak, predicted temperature changes, and end of storm, must be considered and evaluated prior to selecting the proper materials and rate of application.

Adverse roadway conditions existing at low temperatures but which are expected to rise would generally be treated in accordance with recommendations for the lower temperature. If the time of day, trend and weather forecast is such that a drop in temperature may reasonably be

expected, treatment shall be in accordance with the recommendation for the lower temperature.

Spreading should not be done at low temperatures **if the pavement is dry and snow is blowing clear.** Chemicals applied under these conditions are not only wasted, but will act on the dry blowing snow and wet the pavement.

Generally, chemically treated salt will be used as a de-icing material. The following chemical application rates are expected to provide satisfactory driving conditions.

Magnesium Chloride with additive is a liquid chemical that can be mixed with salt to be used as a de-icing material. De-icing is defined as an operation where a treatment of a deicer is applied to the top of an accumulation of snow, ice or frost that is already accumulated on the pavement surface. This could also be applied at earlier stages of a storm to help prevent bonding to the road surface.

Anti-icing is defined as a snow and ice control strategy for prevention of a strong bond between frozen precipitation or frost and a pavement surface by timely application of a chemical freezing point depressant.

Effective temperature is the lowest temperature in which the cost of the application is justified by the results obtained.

Eutectic temperature is the freeze point of a solution based on the percentage of chemical in that solution and not the volume.

5.4 SPREADING PRACTICES

A. SPREADING

The application of winter chemicals, including rates, patterns and number of spreads, should be guided generally by recommendations previously addressed. Prior to each winter season, every spreader truck assigned to a snow section must be calibrated to assure the selected rate will be applied during a storm.

Timing of the initial application is very critical. The initial spread should be applied when there is a light accumulation on the pavement to hold and contain the material spread. If the pavement becomes slippery prior to this, it may require an earlier spread.

It is possible that portions of the snow section are different due to various physical conditions and will require an additional spread during some storms. However, these known troublesome areas should be judged and treated separately and not used as a barometer to evaluate and

subsequently direct complete spreads of the entire section. In order to conduct an efficient operation, constant observation of the pavement surface conditions must be maintained.

Width of spread (throw plus roll) should be restricted to insure that all the material discharged is retained within two feet of the outer edges of the full traveled lanes. Reduction of the spread width will increase the concentration of the chemical where it is needed and increase the effectiveness of the application.

Spreading operations should be conducted at vehicle speeds between 20 and 25 mph. Air turbulence created at speeds greater than 25 mph makes it very difficult to retain all the material discharged within the desired area.

One truck may effectively spread two or more lanes simultaneously. Spinner and auger speeds must be adjusted to obtain the proper rate of application and spread pattern to retain the material only within the lanes being spread.

Although bridges normally freeze before the roadway, care and good judgement should be exhibited in the use of de-icing chemicals.

Accumulations of snow and ice along gutter lines and sidewalk areas of all bridges should be removed wherever practical at the earliest opportunity following a storm.

NOTE: **DO NOT SPREAD IN TOLL LANES**

Figure #3

SUGGESTED SNOW AND ICE TREATMENTS

CONDITION	TEMP	CHEMICAL TREATMENT	PLOWING TREATMENT
Sleet, Freezing Rain	30 - 32°	1st Pass – 250 Lbs. per Lane Mile - Chemically Treated Salt	None Required
Snow, Less than 2 Inches	30 - 32°	Same as above	Possibly none required except to push back slush/snow on shoulders
Snow, More than 2 Inches	26 - 32°	1st Pass – 500 Lbs. per Lane Mile - Chemically Treated Salt 2nd Pass – 500 Lbs. per Lane Mile - Chemically Treated Salt	See Note #1
Snow Covered Roadway	Below 25°	Generally to be treated as a routine spreading operation See Note #2	Routine Plowing See Note #2
Snow – Roadway Clear	Below 25° Wind Blowing	Treat icy spots as they develop. See Note #2	See Note #1

NOTE #1: If forecast indicates snow, plows should be mounted in anticipation of the storm beginning.

NOTE #2: For those weather conditions when the temperature is below 25 degrees, field consideration must be given to the next 24 hour forecast including anticipated temperature ranges, precipitation, wind conditions and the terrain.

5.4A SPREADING PRACTICES – REFERENCE TABLES

Additional reference tables from the Federal Highway Administration are found in Chapter 5-FHWA Recommended Anti-Icing Practices and Application Tables.

5.5 PLOWING

Plowing may be done by Authority Maintenance forces or contractor services. Although the initial snow/ice removal action taken shall be the spreading of de-icing materials, snow plowing should begin as soon as the snow is of sufficient depth to be handled by the plow. Based on weather forecasts of anticipated snow depth, plows should be in readiness. The term “sufficient depth” may seem

vague; however, the time to start plowing is dependent on many things, such as weather forecast, temperature, humidity and traffic conditions. In general, **two or three** inches of snow accumulation can be mechanically pushed from the pavement. The snow shall be plowed from the highway from gutter to gutter. In every case the snow is to be pushed as close to the gutter line or curb line as possible.

NOTE: During heavy accumulations in severe storms, it is not uncommon on major routes to keep only the main traveled road clear initially.

A. PLOWING FORMATIONS

When plowing snow, certain truck formations are more desirable than others. The following pages have seven diagrams of suggested plowing formations. Each plowing formation presented contains a space for motorists to pass. All attempts should be made to maximize efforts to push the snow from all travel lanes to eliminate windrows as much as possible. Extreme caution should be taken when plowing overpasses as to not have any snow fall on the surface below.

B. PLOWING PRIORITIES

Plowing operations shall be performed using the following priority list:

1. Mainline, Plaza & Ramps

2. Service Areas

3. Crossovers and State Police (helicopter pads are to be included in the State Police priority level; although not to be addressed until **after** the precipitation has stopped, then it should be addressed immediately)

4. Commuter Lots

5. NJ Transit, overpasses, service roads, gas stations, disabled vehicle lots, loading dock ramps at Raritan South and Union.

6. Toll Plaza lots, Authority facilities.

7. Service Areas, information centers, sidewalks.

8. Driveways and parking areas at radio tower sites.

C. PLOWING PRACTICES

The plowing operations should also be carried out in such a manner to prevent, as much as possible, the depositing of snow upon sidewalks or sidewalk areas. **Particular attention must be paid when plowing**

bridge overpasses where reduced speed is required to prevent snow, ice or objects from being thrown onto roadways below.

Plowing speed is dependent upon type of pavement, highway design and weather conditions. **Normal speeds of 20 mph are used except on land service highways and bridges, where reduced speeds are necessary. In built up areas, care should be taken not to throw the snow on other roadways, sidewalks, private property, etc. The major portion of the plow's weight is carried by mushroom and/or wear shoes.**

Curbs, protruding manholes, catch basins, treadles, etc., are to be brought to the attention of plow operators so that injuries to workers, damage to equipment and highway appurtenances may be minimized.

Frequent checks of the plow blade are necessary during a storm in order to detect abnormal wear, tears or breaks in the blade. If a critical defect is discovered, the blade should be changed and the plow readjusted to avoid damage. A standard 6" cutting edge shall be replaced whenever any portion of the edge measures **4 inches or less.**

D. CONTRACTOR SERVICES

Private contractors are hired to supplement Authority forces for plowing operations. The contractors are subject to terms of the Authority agreement for fully operated equipment.

Contractors are hired to plow identified snow sections in District and Central Maintenance areas. The contractors are required to familiarize themselves with their sections to include locations of bridges, curb, protruding manholes, etc., to avoid possible damage. A pre-snow season meeting should be scheduled each season with all concerned parties in attendance.

5.6 DEPARTMENT SNOW REPRESENTATIVES

A. ASSIGNMENTS

In order to insure adequate and proper control of the snow removal and ice control operation, the Authority will assign a representative to a snow section for which a plowing contractor has been engaged.

B. RESPONSIBILITIES

The Snow Representative is responsible to the District Superintendent or Supervising Crew Manager, and therefore should maintain close contact with that Manager during the entire operation. The Snow Representative does not have the authority to call or direct the contractor to assemble his forces. This responsibility lies with the Supervising Crew Manager. Snow Representatives shall become familiar with and be

guided by Authority policies and procedures, as they apply to the snow removal and ice control operation.

C. AVAILABILITY

It is the Snow Representatives responsibility to be available when called by the District. If he/she will not be home he/she should call the Supervising Crew Manager and advise him/her where they can be reached. The District will call or contact the Snow Representative when needed and give him/her instructions.

D. DUTIES

When the contractor has been called for plowing or spreading a snow section, the Authority Snow Representative assigned to that section will record the time the contractor's equipment started plowing operations.

It is the Snow Representative's responsibility to check the make, model and license number of each truck being used against the information contained in the organization records in order to ensure that the trucks being used are on file in Central Maintenance. If there is any discrepancy, the Authority Snow Representative will immediately contact the Supervising Crew Manager and furnish the make, model and license numbers of both the truck originally assigned and the truck substituted. In all cases this information must be recorded and the Command Center Snow Room advised prior to the end of the storm.

Authority snow contracts require that all trucks be properly ballasted and be equipped with tire chains whenever it is deemed necessary by the Authority representative in charge.

During the progress of a storm, the Authority Snow Representative shall keep in close contact with the Supervising Crew Manager or Area Crew Supervisor on whose section they are working to report progress and conditions. The District office should be immediately contacted in the event of an emergency, such as the blocking of a lane or roadway by drifts, traffic jams, broken down equipment, etc. If a contractor's truck becomes disabled, the Authority Snow Representative will record the length of time the truck is out of service and furnish the Supervising Crew Manager with such information.

The Representative's reports shall show if the Contractors Superintendent was on the job and the hours worked.

Authority Snow Representatives shall make periodic inspections of plow blades in accordance with Section IV of this Manual. They will also make sure contractor plows are raised when going through plazas to avoid

hitting treadles and that speed is reduced when plowing overpasses to avoid debris from falling to the surface below.

When the Snow Representative believes the contractors plowing operations are completed, they will contact the Supervising Crew Manager/Crew Supervisor to request permission to terminate the contractors plowing operations. Each Snow Representative will keep a record of the "time out" and "time off" for each storm, so that he/she will be in a position to produce this record in the event that there is a discrepancy between the Departments records and the time claimed by the contractor. He/she will also keep a record of time that the contractor takes out for meals and refueling.

E. SNOW REPRESENTATIVES/CONTRACTOR GUIDELINES

The following guidelines have been set up for your information pertaining to assignments, responsibilities and duties of snow representatives.

a. Flashlight

1. Snow representatives are required to work in extremely hazardous conditions and should be familiar with the areas in which they may be assigned.

2. Snow representative vehicles should be equipped with the following equipment.
   a. Safety vest
   b. Portable strobe light (2) (if applicable)
   c. CB radio
   d. Parkway radio/maintenance channel
   e. Boots, work gloves, shovel
   f. Flares
   g. Ballast

3. Snow reps should be familiar with the proper operating procedures of Authority radios. All accidents, disabled vehicles or any other problems should be reported to the nearest Maintenance Yard. If radio is not operating, use public telephone service.

4. Once assigned a plowing route by the Supervising Crew Manager, snow reps should proceed with filling out the Contractor Daily Report of Snow Removal Form. One (1) Form for each truck or loader should be filled out.

5. After all information is noted on the form, snow reps should proceed to check each plow for proper adjustment. The crew should then be briefed on the route they will be

plowing, with emphasis being placed on distances between trucks, plowing speeds and turn around points.

6. Unless instructed otherwise, contractors should lift their plows before entering and exiting the toll plazas.

7. At least once every loop plow blades should be checked and mushrooms adjusted, etc.

8. Snow reps should see that contractors be given breaks at four (4) hour intervals, while still maintaining plowing operations. Example: half of crew breaking/half plowing.

9. Assign designated parking areas for contractor trucks.

BASIC GUIDELINES:

1. Know your area
2. Check your plow, adjust mushrooms
3. Maintain 500' between vehicles
4. Maximum speed - 20 MPH
5. Check plow blade every loop
6. Be prepared for bad weather

RADIO SIGNALS:

Below is a list of radio signals to be used when reporting an incident. All calls should be directed to Parkway Communications, unless the system is split. Parkway will notify us of the split. All calls will be directed to the closest Maintenance Yard.

Signal 11	Auto Accident	**Signal 29**	Call by phone
Signal 13	Aid to Motorist	**Signal 30**	Return as directed
Signal 20	Change Location	**Signal 33**	Attempt to location
Signal 21	Radio Check	**Signal 41**	Any messages for this car
Signal 22	Going out of Service (give location)	**Signal 60**	At lunch/supper off road
Signal 23	In or returning to service (give destination or location)	**Signal 62**	Off the road for parts
Signal 26	Meet car or person	**Signal 63**	Dead animal or debris
Signal 28	What is your location?		

A - Alpha
B - Bravo
C - Charlie
D - Delta
E - Echo
F - Foxtrot
G - Gulf
H - Hotel
I - India
J - Juliet
K - Kilo
L - Lima
M - Mike
N - November
O - Oscar
P - Papa
Q - Quebec
R - Romeo
S - Sierra
T - Tango
U - Uniform
V - Victor
W - Whiskey
X - X-ray
Y - Yankee
Z - Zulu

SNOW REPRESENTATIVE READINESS:

a. Be available 24-hours a day - 7 days a week
b. Authority vehicle - maintain radio, CB
c. Check contractor equipment
   1. Windshield wipers
   2. Blades
   3. Mushrooms
   4. Tires
      -If items 1 to 4 are not up to par, send the truck back to the end of the line
   5. Strobes
   6. CB
      -If item 5 or 6 are not up to par, make a note to the Crew Manager and on the paperwork
d. Go to starting point and notify your assigned supervisor

REPORTING DOCUMENTATION:

a. Make sure sheets are in your possession
b. Sample to be discussed
c. Loader, Grader, Arrowboard - No standby time
d. Down time to be recorded
e. Do not incorporate break on sheet
f. Must plow or spread for at least 4-hours for a one-half (1/2) hour meal
g. Snow Representative Verification Form to be handed in at completion of tour of duty
h. Paperwork accountability between Snow Representatives

BREAKS:

a. Prior to going on break, Snow Reps must call Crew Supervisor to obtain permission to go on break.
b. Snow Rep to call in service area Snow Rep for permission to break.
c. Service area Snow Rep will not allow breaks if groups of trucks are already in.

d. Equipment assigned to plazas will break on site.

PLOWING:

a. Snow runs are to be maintained unless altered by Crew Supervisor
b. Proper spacing of trucks
c. 500 feet between trucks
d. Proper position of plow in formation
e. Snow Reps to be behind trucks
f. Authority vehicles will be assigned to contractor group and responsible to plow shoulders and salt pavement.

PLAZAS:

a. Raise plows through toll plazas

SECTION VI - MISCELLANEOUS

6.1 PUBLIC INFORMATION

The Director of Operations or his designee shall furnish traffic conditions, road conditions and other pertinent information to the proper authorities.

All responses to inquiries from news agencies during or following snow removal operations shall be issued by the Director - Public Affairs. Information will be provided to the Director - Public Affairs by the Director of Maintenance or his designee.

The Director of Maintenance or his designee will evaluate conditions as they will affect the public and determine the most effective method to inform them.

Response from the designated personnel shall be made only if he/she is thoroughly informed and knowledgeable of the conditions within the areas that is the subject of the inquiry. Such respondents should limit themselves to that area only.

6.2 REMOVAL OF UNOCCUPIED OR DISABLED VEHICLES

The necessary removal of any vehicle from the roadway, which is interfering with required maintenance operations, must be accomplished in accordance with the following:

A. If an employee of the Authority observes or receives notification of an unoccupied or disabled motor vehicle or other object of any nature which is standing wholly or partially upon the traveled portion of the road and constitutes a hazard to traffic or will hamper snow removal or interfere with other Maintenance operations, he/she shall transmit such information to Operations and request that they arrange to have the vehicle or object removed as soon as possible.

B. If the request submitted to Operations does not result in the removal of the vehicle and the Maintenance operations cannot be delayed any longer, the Supervising Crew Manager may cause the removal of the vehicle utilizing Authority forces and equipment. The vehicle or object shall be moved to the nearest practicable shoulder area, median or undeveloped sidewalk berm so that the required work can be accomplished. Operations shall then be notified that Authority forces have performed the removal and their assistance is no longer required.

C. Operations shall maintain a permanent record for each vehicle or object removed, which shall indicate the name of the person ordering the removal, the date and time of day and the make and license number of the vehicle, or additional information sufficient to identify the object if other than a motor vehicle was removed.

6.3 TEMPORARY PERSONNEL FOR EMERGENCY SNOW REMOVAL WORK

In the event of a severe prolonged storm, operating conditions could arise where relief for our forces could best be obtained by enlisting short term assistance of selected personnel permanently assigned in other units of the Authority or the temporary hiring of additional personnel not within Authority service.

Temporary hiring of personnel will be authorized only upon receipt of approval of the Executive Director after consideration of recommendations submitted to him by the Chief Maintenance Engineer who is responsible for coordination of additional personnel needs from the area Superintendents.

Types of personnel, rate of pay, hiring procedures, payroll reporting and medical and workman's compensation requirements must comply with current established Authority regulations.

6.4 SIDEWALKS

Clearing of walkways, etc., at Maintenance Facilities and State Police barracks is the responsibility of Maintenance personnel. The State Police Station Commander or his designee will notify the STMC Snow Room when snow removal is required. It is still anticipated that in the event of a light covering or ice condition, the stations would assign their own personnel to spread salt on walkways.

Clearing of walkways and sidewalks adjacent to toll plazas will be the responsibility of Tolls Utility personnel.

ADDITIONAL CHAPTERS – PENDING

2 - STMC SNOW ROOM

3- ANTI-ICING PROGRAMS

4- RESPONSE LEVELS & AUTHORITY SPREADER ROUTES

5- SUPPLEMENTAL RESOURCES CONTRACTOR SPREADER ROUTES, PLOW TEAMS & LOADERS

6-PERSONNEL

7 MAINTENANCE MANAGEMENT- STORM STATUS & INCIDENT REPORTING

8– AUTHORITY SNOW REPRESENTATIVES

9 AUTHORITY SNOW REMOVAL ASSETS

10 KEY LOCATIONS

11 FHWA RECOMMENDED ANTI-ICING PRACTICES & APPLICATION TABLES