



Highway Factors Attachment – Pennsylvania Turnpike Commission maintenance manual

Mount Pleasant, PA

HWY20MH002

(61 pages)

TABLE OF CONTENTS

Chapter	Title	Page
1	Organizational Structure	2
2	Planning, Scheduling & Budgeting	5
3	Winter Services	9
4	Shoulders	38
5	Unpaved Surfaces	42
6	Paved Surfaces	48
7	Drainage and Drainage Systems	56
8	Guiderail, Barrier & Attenuator Devices	66
9	Line Painting	69
10	Utility Crossings	71
11	Emergency Operations	75
12	Signs & Traffic Services	84
13	Facilities, Building Grounds and Storage Areas	91
14	Property Damage	93
15	Tunnel Maintenance	95
16	Roadside Maintenance	98
17	Bridges	110
18	Rental Equipment	131
19	Radio Communications	133
20	Agility	135
21	Service Plaza Agreements	137
22	Interchange Agreements	139
23	Media Relations & Legislative Inquiries	141
24	Quality Assurance	144
	Appendix A through M	148
	Glossary	218

CHAPTER 2

PLANNING, SCHEDULING & BUDGETING

Table of Contents

Title	Page
2.1 Introduction	6
2.2 Planning	6
2.3 Budget	8

Chapter 2 -- Planning, Scheduling and Budgeting

2.1 Introduction

The overall objective in Turnpike maintenance planning is to establish an adequate maintenance program capable of accommodating all travel in an orderly, safe and efficient manner. Roads and structures must be maintained with the least amount of inconvenience to the traveling customer, the greatest degree of safety and with full consideration of the property owners adjacent to the Turnpike.

This section addresses planning and scheduling an important aspect of Highway Maintenance Operations. Careful planning provides many benefits. First, planning is necessary to ensure that each part of the organization will know when, how and what to contribute toward maintaining the highway system. Planning also enables us to focus attention on our objectives and to gain economical operations. Cost is minimized because of the emphasis placed on consistent and efficient operations. Lastly, plans facilitate achieving directed goals.

Various management considerations are instrumental in determining and evaluating alternate courses of action. Selecting a course and deriving a plan is based on available resources, budgets and maintenance needs.

Maintenance Planning is the process that begins well before the work is actually scheduled and concludes with the weekly scheduling documents. This task is often difficult because the many variables which affect the maintenance; however, it is possible to plan and schedule most maintenance activities.

Some variables that may be controlled are: 1) having the correct materials at the job site when needed, 2) scheduling the type and amount of equipment, and 3) having labor available to perform the required tasks. The purpose of making a plan is to take care of controllable factors in the best way possible and to cope with the adverse effects of those factors which may cause disruption.

2.2 Planning

Maintenance Strategic Plan - The Central Office formulates a long range strategic plan, which takes into consideration the projected needs and formulates guidelines for

expenditures within the prescribed allocations. The period included by this type of planning ranges 3-5 years. These long range plans establish realistic goals which the Maintenance Department works toward. The strategic plan includes the broad guidelines that must be followed in the district annual work plan so that long range goals or objectives may be attained.

District Annual Work Plan - The Annual Work Plan is currently being developed.

Work Scheduling Calendar

Work Activity	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Manual Patch	X	X	X	X	O	O					O	X
Manual Patch Emergency	O	O	O	O	O	O	O	O	O	O	O	O
Tunnel	O	O	O	O	O	O	O	O	O	O	O	O
Spray Patch	X	X	X	X	O	O					O	X
Spot Mill	X	X	X	O	O					O	X	X
Base Repair	X	X	X	X	O							X
Crack Sealing				X	X	O				O	X	X
Recycling	X	X	X	O							O	X
Spall Repair	X	X	X	X	O	O				O	X	X
Shoulder Stabilization	O	O	O	X	X	X				X	X	X
Drainage – Cleaning	O	O	O	O	O	O	O	O	O	O	O	O
Drainage – Repairs	X	X	X	X	X	X	O	O	O	X	X	X
Sidedozing	X			X	X	X	O			O	X	X
Restoration – Disaster	O	O	O	O	O	O	O	O	O	O	O	O
Storm Patrol	O	O	O	O	O	O	O	O	O	O	O	O
Graffiti	X	X	X	X	X	O				O	X	X
Interchange Cleaning	X										O	X
Tower Access Roads	O	O	O	O	O	O	O	O	O	O	O	O
Mowing	X	X	X	O	O						O	X

X = Period of Expected Performance O = Periods of Possible Performance
 Blank = Periods When Activity Usually Should Not Be Scheduled

2.3 Budget

This will be addressed as Annual Work Plan is implemented.

CHAPTER 3

WINTER SERVICES

Table of Contents

Title	Page
3.1 Introduction	10
3.2 Winter Related Activities during April and May	12
3.3 Winter Related Activities during June, July & August	15
3.4 Winter Related Activities during September, October & November	17
3.5 Winter Related Activities during December, January, February & March	27
3.6 Stockpile Planning and Development	37

Chapter 3 -- Winter Services

3.1 Introduction

No other facet of maintenance requires more diligence and preparation than snow removal and ice control; perhaps because no other maintenance function is less tolerant of failure. Few things have a greater impact on the customer than the service rendered by our maintenance forces during the winter months. This chapter discusses all phases of snow removal and ice control operations, from the required planning through the necessary follow-up activities at the conclusion of each storm.

The primary maintenance objective during the winter months is to keep the Turnpike in a safe and passable condition and to provide highway safety and serviceability to the customer in the most efficient and cost effective manner. All lanes should be maintained to bare roads to the best of each section's ability.

Due to the dynamics of winter storm events, Levels of Service vary according to the time of day, day of week, elapsed time since start of event, traffic volume, storm intensity and specific local weather conditions. The ultimate goal of ice- and snow-free roads may be fully achieved only after a storm event has ended.

Planning, preparing and scheduling of resources must occur far in advance of winter storms. In fact, a successful winter services program is a **year-round activity** and requires a continual **focus on fundamentals**. Preparations for next winter's operations begin on the last day of the previous winter season.

Focus On Fundamentals

Fundamental resources that must be ready for deployment include:

- **People:** Equipment Operators, Foremen and Managers who possess the knowledge and skills needed to perform their jobs well.
- **Materials:** Sufficient quantities of the correct materials for conditions, in the right locations and ready for proper application.
- **Equipment:** The right types and pieces of equipment properly maintained and available when and where needed to perform winter operations.

- **Schedules & Reporting:** Detailed operational assignments for people, equipment and materials ready to achieve Levels of Service goals for each priority during and after winter storm events, along with properly reporting the work that has been completed, including equipment, materials and manpower.

Communications

Efficient, accurate and timely transmission of information before, during and after winter storm events among parties who need to know, including PTC staff and external partners.

Situational Awareness

Having accurate and up-to-date awareness of road and weather conditions is an important component of Situational Awareness. Successful snow and ice control operations require continual monitoring of weather conditions, weather forecasts and resources deployed. Such monitoring provides awareness of current and changing conditions. This knowledge is indispensable for communications among relevant parties dealing with the winter storm event.

Contingency Planning

Having plans to address potential challenging situation is an important component of contingency planning. Situational awareness is essential to contingency planning. Temporary redeployment of resources may be necessary if conditions warrant. Situational awareness supports decisions to activate contingency plans.

Standardized Roadway Condition Descriptions

PTC and PennDOT define six winter roadway conditions. These definitions support effective communications among PTC staff, its partners and customers. See Appendix A.

Chapter Organization and Scope

This chapter discusses all phases of ice and snow control operations. As nearly as possible, it chronologically lists all winter-related activities starting with those performed in the spring, continuing with summer and fall activities and concluding with the winter season. Employees throughout PTC perform these activities.

Changeable conditions during winter storms require flexibility of operations. Ice and snow control is a highly complex and varying task requiring knowledge and expertise. The types and amounts of deicing materials to be applied and determining plowing versus spreading are field decisions and must be made by the management team at the District/Section Levels.

Subject to weather conditions and irregular winter schedules, the PTC will continue to perform such other maintenance activities as stated in Section 3.5.12, Dark Hours Training and Other Activities Performed during Winter Season. However, because of the major impact that winter storms have upon our society, other maintenance activities are secondary to the ice and snow control program.

3.2 Winter Related Activities during April and May

A successful ice and snow control program must be approached as a year-round activity. If adequate preparations have not been completed by the time the first snow falls on the ground, it will be impossible to do the job efficiently no matter how good or experienced the maintenance department has become.

Figuratively speaking, it may be said that the next winter begins on the day that this winter ends. Beginning winter preparations about nine months ahead allows ample time to focus on the fundamentals, particularly the people, equipment, and materials that must be ready for deployment by the start of the next winter season.

In preparation for next winter, topics addressed during the spring season include:

1. Review of operations for the winter that just ended through and end of season After Action Review (AAR). See Appendix B.
2. Inspection, repair and storage of equipment.
3. Inventory and storage of winter materials (end of season inventory to be completed by May 15th annually).
4. Cleanup and repair of stockpiles.

3.2.1 End of Season Review of Winter Operations

District & Section End of Season Review

The best way to start preparing for next winter is to review what happened last winter. Use AAR's to document winter operations. Conduct a Section AAR at the end of each winter season by April 15th or shortly after the last winter storm event while the operational aspects of winter services are still fresh in everyone's minds. Participants should include all maintenance personnel that were involved with winter activities. The Section AAR's should then be reviewed at the District level at a final winter close out meeting and compiled into one District AAR to be submitted and reviewed by Central Office.

The District Superintendent must send a memo outlining the results of the District AAR to the Director of Maintenance by April 30th. Documenting and sharing what each district learned about improving winter operations will better prepare the Maintenance Department for next winter.

Additionally, the Director of Maintenance may request an AAR after any specific event in addition to the required end of season AAR.

AAR's reveal what worked well and what did not. AAR findings should trigger short-term corrective actions and contribute to long-term planning. An example of a short-term corrective action is ordering and installing a replacement engine for a snow blower. Problem areas and opportunities for improvement that require more time, resources and planning often involve:

- Equipment routing, cycle times and scheduling of personnel
- Materials supply and application rates
- Agility agreements
- Shift schedules
- Call out procedures
- Situational awareness
- Contingency planning

Address any longer-term items or issues identified during the spring AAR's and resolve them prior to the start of the next winter season, whenever possible.

Central Office End of Season Review

The Chief Operating Officer, Director of Maintenance and Central Office staff will review the results of the District AARs in May of each year. This review will also include the District Superintendents, District Operations Manager, District Resources Manager and Automotive Equipment Supervisors.

The Central Office AAR should evaluate each District's ice and snow control operations. Use the AAR to identify best practices, particularly new and innovative practices. Items noted in the District reviews that require Central Office action should be addressed at the appropriate time. As with District AAR's, topics covered during Central Office AAR's should include:

- Equipment routing, cycle times and scheduling of personnel

- Materials supply and application rates
- Agility agreements
- Shift schedules
- Call-out procedures
- Situational awareness
- Contingency planning

The results and action items should be incorporated into the Winter Work Plan, Snow Academies and the Foreman and Maintenance Manuals.

3.2.2 Winter Equipment Inspection, Repair and Storage

The months of April and May are the best times to inspect snow removal equipment. This allows time to evaluate the condition of the equipment and to schedule needed repairs and maintenance so that the equipment is in proper working condition for the next winter season.

The Director of Maintenance determines the equipment inspection protocol. This may involve a set inspection procedure to follow each year or the inspection procedures may be left to the District Maintenance Superintendent to decide. In the latter case, inspection methods will vary depending on the type of winter and the age and general condition of each Section's snow removal equipment. Documented results of inspections, including needed repairs and maintenance, is essential to the preparation for the upcoming year. A Winter Equipment Checklist is included in Appendix C.

Foremen are responsible for scheduling repairs and maintenance so that equipment is in good working order by the start of the next winter season. The Automotive Equipment Supervisor should monitor progress and verify that all needed repairs have been completed.

3.2.3 Winter Materials Inventory and Storage

Qualified personnel are to inventory all winter materials at each stockpile location where they reside in accordance with the current SAP Plant Maintenance standards. Material moved between stocking areas shall be "transferred" in SAP Plant Maintenance and "issued" from current materials when used.

The following are key milestones:

- Complete adjustments and reconcile with SAP Plant Maintenance inventories after each storm or at a minimum monthly.
- Complete end of winter physical inventory by April 30th.
- Complete data input including adjustments and reconciliation into the SAP Plant Maintenance system by May 15th.

Annually, by March 1st, FEMO will provide Maintenance with a list of any storage facilities in which they anticipate repairs or rehabilitations for the upcoming year. Superintendent will instruct the Foreman on depletion of inventory and where to move remaining salt.

3.2.4 Spring Cleanup of Maintenance Stocking Areas

Following FEMO Model Stockpile Guidelines, maintain stocking areas in a neat and orderly condition at all times.

District Maintenance Superintendents and Foremen are responsible for ensuring that stockpiles meet the Commission's expectations. The annual spring cleanup of stockpile locations deserves special emphasis. At this time, clean and repair bins and storage buildings, as needed, before transferring remaining salt and other environmentally sensitive materials into them (see Section 3.4.13, Winter Material Storage and Environmental Considerations). Soil- and salt-staining cleanup must comply with FEMO Model Stockpile guidelines. Salt laden aggregate produced by the cleaning of stockpile grounds both during and after the winter season which cannot be recovered and reused will be disposed of using residual waste handling procedures.

3.3 Winter Activities during June, July and August

Winter Services is a year round priority for PTC. The following sections explain what activities must be accomplished during the summer months to ensure that the Commission is prepared for an effective winter season. Having a comprehensive equipment plan, along with preparation of snow routes and development of proper training materials, are all part of the strong fundamentals that help ready the Commission for winter. Planning for contingencies is also a key part of winter preparation. Above all, effective communication, both within the Commission and externally to other key stakeholders, helps to keep the winter services strategy on track.

Included in this section is information about:

1. Review truck section routing and straight-lines.

2. Review/repair equipment.
3. Review/repair of material storage including brine making/storage facilities (FEMO).
4. Review and verify Equipment Operator certifications.
5. Review and update Snow Academy presentation and Winter Services Guide.

3.3.1 Truck Section Routings and Straight-lines Review

District Superintendents should meet with each Foreman and review the previous year's truck routing and straight-lines. Any modifications/adjustments identified through the AAR process should be incorporated. Also, any infrastructure changes should be identified and incorporated.

3.3.2 Winter Equipment Review/Repair

Repairs or modifications identified on the post winter equipment checklist should be addressed during this time period. Any repair or replacement parts should be ordered and installed. Implementing any AAR findings with regards to equipment should be completed. Annual and/or preventative maintenance such as painting of plows, greasing/oiling of spreaders and live bottoms, cleaning and storage of liquid dispensing equipment should be planned and completed during this time period.

3.3.3 Material Storage Including Brine Making/Storage Facilities (FEMO) Review/Repair

Facilities should be reviewed for any needed modifications or repairs during this time period. Reviews must be done jointly with FEMO and Maintenance personnel due to each having their own responsibilities. Implementing any AAR findings with regards to facilities should be completed. Building replacements/repairs need to be planned and completed prior to fall/winter activities. Brine makers and tanks are to be inspected, cleaned and flushed annually. Any needed plumbing or electrical repairs will need to have notifications placed into SAP for FEMO to schedule and complete.

3.3.4 Equipment Operator Certification

Commission policy requires that all Operators be certified to operate the equipment safely and maintain it properly. The District Maintenance Superintendent must ensure that sufficient numbers of workers are trained and certified so that snow removal equipment can be operated as required according to the Section Winter Shift Schedule.

Summer months are a good time to train Operators in the basics of snow removal operations. While this season of the year prevents the actual plowing of snow, it does not preclude training and testing on items such as:

- Trucks, graders and loader operations
- Mounting and adjusting the plow
- Familiarity with plow and spreader control
- Driving skills involving turning and backing
- Clearance judgment for the front, wing and tow plow.

Annual presentations by the Maintenance Department will cover equipment readiness, personnel, command/control and other topics relating to each District Plan.

3.3.5 Snow Academy Presentation and Winter Services Guide Review

Annually, the Snow Academy Development Team will reconvene to review any recommendations from the previous year's AARs. Any additions, corrections or deletions will be incorporated into the final document in a timely manner so that the document can be reproduced in preparation for the upcoming season's training. In addition to the Snow Academy presentation, the PTC's Winter Services Guide information, such as, personnel, equipment and facilities will be updated as required.

3.4 Winter Related Activities during September, October and November

The months of September, October and November are critical to preparations for upcoming winter operations. Fall season activities affect other seasons' work and deal with the full span of resources and capacity available to PTC to perform its winter services. This section details the responsibilities and necessary actions that prepare the Maintenance Department to handle routine and emergency services when winter arrives.

The section opens with two essential topics: situational awareness and contingency planning. Both of these topics require strong up-front efforts so that downstream activities benefit.

1. **Situational Awareness:** The fall tasks deal with assuring that processes for gathering timely, relevant and accurate information are understood and in place. To disseminate that information, adequate communication equipment and knowledgeable staffing must be available when needed.

2. Contingency Planning: The process that prepares PTC to effectively handle unexpected, non-routine or emergency situations – and such situations include all aspects of winter services.

The section continues by describing other elements of fall season preparations necessary for safe and effective operations during both routine and extreme winter conditions, including:

3. General maintenance of stockpiles.
4. Shift planning and updated call lists.
5. Identify Mobile Emergency Teams (MET's).
6. Review adverse weather protocols and contingency plans (Weather Emergency Traffic Management Plan).
7. Identify and review weather forecasting services.
8. Equipment inspection, calibration and dry runs.
9. Material types, storage and quantity.
10. Conduct winter preparedness meeting.
11. Major improvements of stocking areas.
12. Storage facilities.
13. Winter Materials Storage & Environmental Considerations
14. Sampling Material.
15. Snow Fence.

3.4.1 Situational Awareness

Situational awareness is a state-wide incident communication process for use on not only the Turnpike but all of Pennsylvania's highway systems. For the PTC, the use of Trip Talk and ENS help to notify our traveling customers of our road conditions.

The Situational Awareness process is not limited to the winter season. PTC's Operation Center is utilized 24/7 365 days a year.

From November 1 thru March 31, road conditions are monitored and updated in the Emergency Notification System (ENS) in accordance with the PTC protocol.

Situational awareness for winter activities includes:

- Being fully informed about weather forecasts.
- Ensuring timely communications with all PTC participants, external partners and the public.

- Having complete understanding of procedures and actions necessary to provide accurate assessment of a winter event.
- Fostering a perspective that enhances the ability to address developing events.

Section and District Offices are to implement the PTC's plans and procedures for providing timely and accurate information to ensure situational awareness for PTC personnel, external partners and the customers regarding winter storm events.

Sections in this chapter provide guidance for creating situational awareness:

- Central Office Command
- PTC District Command
- Weather Emergency Traffic Management Plan
- Weather Forecasting
- Emergency Procedures
- Proactive Call Procedures
- Operations Center Communications

Field personnel are responsible for a variety of situational awareness activities:

The Foreman monitors field conditions and communicates current conditions through the ENS and through the PTC Operations Center.

Weather conditions dictate the winter weather emergency roadway traffic levels.

Examples of information that may be requested during an event are as follows:

- **Personnel** – Available number of personnel and the number currently on-duty; manpower status reports by section.
- **Equipment** – Types and number of equipment required and the types and number in service by section.
- **Materials** – Current material totals listed by section.
- **Roadway Conditions** – Current condition as defined using the Standardized Roadway Condition Descriptions.

3.4.2 Contingency Planning

Contingency plans are courses of action developed in advance to accommodate unexpected, emergency or non-routine events. Contingency planning is necessary preparation to address winter storm situations that are not part of the established winter

operations plan. The PTC contingency plan is outlined in the PTC Weather Emergency Traffic Management Plan.

3.4.3 General Maintenance of Stockpiles

The general maintenance of stockpiles includes but is not limited to the proper storage and handling of all winter material including salt, anti-skid, premix material, CMA, calcium chloride and sodium chloride, etc. It is every employees duty to perform good housekeeping measures within the stockpile such as keeping materials within storage bins, sweeping up salt and antiskid, as well as, keeping equipment and garages clean and in an orderly fashion.

3.4.4 Shift Planning and Call Lists

Districts should have call lists already established by section. A review of the lists should be conducted to ensure all employees working within the section for the winter are included. Winter shifts must be established and bid by the first week in November.

3.4.5 Identify Mobile Emergency Teams (MET's)

The METs and related procedures are currently being developed.

Both receiving and sending organizations are responsible for supplying information and accomplishing activities associated with MET functions.

Receiving Organizations must prepare:

1. Resources needed – manpower and equipment
2. Logistics information, crew meet locations, times, radio and telephone contact information
3. Plan of operation
4. Approximate duration of activation
5. Identification of available resources including materials and equipment parts
6. Administrative procedures for payrolls and expenses as well as AAR completion

Sending Organizations must prepare:

1. Assessment of their own needs and forecast for the next 48 hours
2. Shift and manpower information
3. Identification information and types of equipment being deployed

4. Radio and telephone contact information
5. Questions for receiving organization

See Appendix D, MET Checklists for Receiving and Sending Organizations.

Emergency Procedures

The Maintenance department has established procedures that are activated during emergencies caused by severe winter weather, flooding or other disasters.

The Maintenance department maintains a call list available on the PTC shared drive at the following location: [W:\Maintenance\ Maintenance All](W:\Maintenance\Maintenance All).

This list includes:

- District and Section telephone numbers
- Telephone numbers of designated Central Office, District and Section personnel
- Telephone number of other pertinent agencies such as the Accuweather, Weather Bureau, Emergency Management Agency and State Police.

3.4.6 Review Adverse Weather Protocols and Contingency Plans (Weather Emergency Traffic Management Plan)

All information regarding the PTC Weather Emergency Traffic Management Plan is updated and disseminated via the Operations, Safety and Incident Response Department (see Appendix E). See Appendix F for dynamic message sign guidelines.

3.4.7 Identify and Review Weather Forecasting Services

PTC has a statewide weather forecasting contract to forecast winter events and provide advanced warning. For additional information regarding the current statewide contracts, please contact Maintenance Division Resources & Programs Manager.

Possible other sources of weather sources include:

- National Oceanic and Atmospheric Administration (NOAA)
- Accuweather
- The Weather Channel
- Local media

3.4.8 Equipment Inspection, Calibration and Dry Runs

Inspections

Each Section is required to establish an equipment inspection review date prior to winter shifts. All trucks are required to have a 63-01 (Operators Daily Report for Mobile Equipment) completed along with a dry run sheet. Loaders, graders and blowers must also have a formal inspection completed unless a preventative maintenance (PM) was performed within three (3) months of the winter preparedness date (November 15).

Calibration of Winter Equipment

All truck and spreader combinations shall be calibrated every year. Calibration is necessary to ensure that the equipment is working as specified and that proper amounts of solid chemicals, liquid chemicals and/or abrasives are discharged at each setting. This information is then used in conjunction with the guidelines for material application rates to select the proper auger setting for the desired application rate.

Important notes on calibration are:

- All Sections will calibrate with salt since salt is the most expensive deicing material and is the focal point of environmental concerns.
- Auger and spinner settings are to be the same through the Turnpike. A matrix will be supplied to each AES prior to calibration for consistency purposes.

Dry Run

After equipment route assignments have been completed in accordance with equipment allocation guidelines and strip maps, each Foreman shall ride the assigned route of every piece of snow removal equipment in his or her assigned section with each Operator. To ensure effective dry runs use the Dry Run Checklist (Appendix G).

Conduct dry runs in daylight as well as in dark hours. This practice will assist the Operator in noting items or situations that can be easily overlooked during dark hour operations.

Identify all drains, roadside obstructions, depressions and overhead bridges or other potential obstructions that may interfere with plowing operations.

3.4.9 Material Types, Storage and Quantity

Sections are responsible for maintaining salt inventory levels throughout the winter season as follows:

- Initial fill of all salt storage stockpiles quantities must be 90% of working storage capacity by November 1st.
- Maintain a minimum of 80% of working storage capacity throughout the winter season.
- The determination to fill the salt stockpiles at the end of the season will be made by the Director of Maintenance. This is for budgeting and planning purposes.

3.4.10 Conduct Winter Preparedness Meeting

Central Office Winter Preparedness Meeting

Central Office will conduct their winter meeting annually in the month of October. For the Central Office meeting, the Director of Maintenance conducts the meeting and is attended by all essential Central Office staff, District Superintendents, Operations Managers, Resources Manager, Foremen, and Automotive Equipment Supervisors. The purpose of the meeting is to discuss current PTC policies and procedures to be followed throughout the coming winter.

District Maintenance Winter Preparedness Meeting

Districts shall conduct their winter meeting annually in the month of November prior to the start of winter shifts. For the District Office meeting, the District Superintendent conducts the meeting and is attended by all District Operations Manager, Resources Manager, Foremen, Assistant Foremen and Automotive Equipment Supervisors. The Field Operations Manager should make every effort to attend all District Winter meetings. The purpose of the meeting is to discuss any information conveyed at the Central Office meeting including, but not limited to, current PTC policies and procedures to be followed throughout the coming winter. Also, any specific district or section requirements should be conveyed at this meeting. It is the Foreman's and Assistant Foreman's responsibility to ensure that all information from the winter meetings is conveyed to their employees at the section level.

Additionally, elements of winter operations plans, contingency plans and other aspects of winter services applicable to the local conditions are the primary topics for discussion.

Suggested agenda items include:

- Outcomes from the previous end of winter AAR
- Priorities
- Shift schedules
- Union issues
- Call out procedures
- Equipment care
- Spreader calibration
- Plowing and spreading techniques including materials application rates
- Non-snow removal and dark hour activities
- Environmental considerations and FEMO guidelines
- Contingency plans
- Situational awareness
- Weather forecasts and forecasting services
- Training opportunities as available
- Other items at the discretion of the District Maintenance Superintendent

As preparation for the fall season District meeting, District Maintenance Superintendent should ensure that items from the spring AAR meeting are reviewed (see Section 3.2.1, End of Season Review of Winter Operations). Outstanding items from the spring AAR should be addressed, as necessary, at the fall meeting.

Based on the outcomes of the fall meeting, all winter services planning, equipment assignments, schedules and personnel assignments are to be completed in accordance with the winter preparedness date.

The Maintenance department can also utilize PTC information systems (Roadway Weather Information Systems [RWIS], Emergency Notification Systems [ENS], radio or telephone) as tools to establish contact with districts for storm tracking capability.

3.4.11 Major Improvements of Stocking Areas

Prior to making improvements to any facility, check with the Regional Facility Managers in FEMO to ensure compliance with Labor and Industry guidelines.

Annually, a request for major upgrades should be submitted to the Director of Maintenance by the District Superintendent for FEMO concurrence and inclusion in their capital plan.

3.4.12 Storage Facilities

The PTC utilizes various types of storage facilities, including, but not limited to, Domes, Barns and Bay Storage Facilities

The following list of material storage facilities includes a brief description of the buildings currently used by the PTC.

These are examples for 4 foot high walls.

Diameter Size (ft)	Design Capacity (tons)	Working Capacity (tons)
60	1,500	1,000
80	2,500	1,800
110	4,300	3,500
120	6,600	5,500

- **Dome Storage** - When loading the wood dome buildings, salt should never be stored against the panels that comprise the building shell.
- **Barn Storage** - The barn type storage building is ideal for sites requiring less than 1500 tons of storage capacity.
- **Bay Storage Bins** - Bay storage bins can be utilized depending on the amount of salt to be stored, multiple bins can be constructed.

General dimensions of these buildings are 20' x 30' per bin with a vertical clearance of about 15 feet. Because of this relatively low vertical clearance, all salt must be dumped in front of the building and carried in by a front-end loader.

The front of this building is open, and when the building is full, the salt is partially exposed. Therefore, follow these environmental protection guidelines to guard against leaching and runoff:

Extend the bituminous pad on which the building is placed for a distance of 20 feet past the front of the building.

- Do not overload the building so that salt spills out past the front of the building.

- When fully loaded, cover the front of the salt pile with tarpaulins.
- Keep the immediate area around the building clean of salt spillage that will normally occur when loading the building with trucks. This is especially important for the pad surface in front of the building.

3.4.13 Winter Material Storage and Environmental Considerations

When storing winter materials as described below, ensure all Stockpile Academy Guidelines are followed.

Anti-skid Material – Anti-skid material by itself can be stored in any accessible area of the storage site. Segregate anti-skid material from other materials, keep it in manageable quantities, and store it in a location that gets maximum exposure to the sun to help guard against freezing or stored inside. For safety reasons, form the anti-skid piles with no overhangs or irregular shapes.

Treated Winter Materials – Treat stockpiles of anti-skid material with either bagged calcium chloride or salt to help prevent freezing. The Section Foreman makes the decision to treat or not to treat anti-skid materials with calcium chloride or salt.

When treating with bagged calcium chloride, the recommended rate is 60 pounds of calcium chloride per ton of anti-skid material. When treating with salt, the recommended ratio is one ton of salt for each ten tons of anti-skid material.

Depending on the climate, the amount and type of anti-skid stockpiled, and the percentage of moisture content, the recommended quantities of calcium chloride or salt may need adjustment. Some sections located in the southern part of the state go through winter with little or no treatment of anti-skid stockpiles while some other higher elevation locations may have to increase the suggested quantities.

If anti-skid is treated by any method, protect the environment by controlling leaching and runoff from the chemicals used. All mixed material shall be handled in the same manner as salt, following stockpile guidelines.

Salt (Sodium Chloride) – Salt deliveries start in the fall and all initial fill requirements should be at capacity by November 1st. Thereafter, as the salt is used, deliveries continue throughout the winter to replenish supplies. During the initial stocking and the following deliveries, take special care to minimize adverse environmental effects by loading and piling all salt in the approved manner and keeping salt storage locations neat and orderly.

Salt may not be delivered to any location that is not properly prepared in accordance with the PTC's most recent policy and quality assurance requirements for salt storage areas.

Bagged Calcium Chloride – Bagged calcium chloride is to be stored on pallets and, whenever possible, stored in a dry, well-ventilated building. Bagged calcium chloride is to be used in the same order that it is received.

Calcium Magnesium Acetate (CMA) – CMA is utilized in environmentally sensitive areas such as designated Service Plazas and/or where the use of rock salt is prohibited. Liquid deicing chemicals require a storage vessel made of a non-corrosive material such as polyethylene. Depending on the type of chemical solution, periodic agitation or circulation may be required. The storage vessel should be thoroughly flushed with water whenever the type of chemical being stored is changed.

3.4.14 Sampling of Material

All materials shall be tested for conformance to contract specifications by Quality Assurance within the Engineering Department.

3.4.15 Snow Fence

Snow Fence installation/removal/storage – The PTC's representative shall design and mark the area where the snow fence is to be installed. The Foreman should contact PA 1-CALL to identify utilities. Snow fence(s) should not be placed outside of the right of way without prior approval from Director of Maintenance.

- Install and remove snow fence in accordance with the following schedule:
- Install after November 1st and remove by April 15th. The District Maintenance Superintendent can opt to leave the snow fence up year round with approval from the Director of Maintenance.
- Snow fence shall be stored at the Section.

3.5 Winter Activities during December, January, February and March

Effective winter operations build on a strong foundation of year-round preparations. Fundamental resources, including people, equipment, and materials, must be in place and ready to deploy before the first snowfall of the season. Efficient deployment of resources requires advance planning, including scheduling personnel, allocating equipment and

arranging timely deliveries of materials. Good working relationships with external partners must be established before winter begins.

A winter storm is a dynamic event that unfolds over hours and days. Changing conditions during a storm require continual monitoring. Information about ongoing operations, including roadway, traffic, and weather conditions, must be shared within the Commission and with external partners. Timely communications provide the situational awareness that enables adjustments to snow fighting tactics as needed to achieve the PTC goals, including implementing contingency plans when conditions warrant.

This section describes how careful planning and the right resources properly deployed produce a successful ice and snow control program. Topics addressed include:

1. Objectives of winter operations and definitions of key terms and concepts
2. Priorities
3. Storm callout procedures
4. Materials applications and storm plowing procedures
5. Specialty equipment (plows, spreaders, blowers, graders, trucks, loaders, etc.)
6. Tower road and access roads
7. Cleanup of roadways and stockpiles
8. Frost heave
9. Review of equipment damage or breakdown
10. Care and cleaning of equipment
11. Issue of winter materials and storm reporting in SAP
12. Dark hours training

3.5.1 Objectives and Definitions

The primary maintenance objective during the winter months is to keep all turnpike roadways in a safe and passable condition. Operations will proceed as quickly and efficiently as possible but within the limitations imposed by weather conditions, availability of resources, environmental concerns and employee safety requirements.

The PTC will make every effort to achieve its stated goals. However, natural emergencies (e.g., regional or statewide blizzard, flood or extremely low temperatures, ice storm causing downed power lines/trees, major bridge closing due to ice jam, etc.) and unforeseen situations (e.g., salt shortages, diesel fuel supply/quality issues, homeland security events, crashes, etc.) may prolong the PTC effort from fully achieving all goals. Maintenance management should use their judgment based on experience and training in conducting proactive and/or remedial work to overcome roadway snow and ice hazards.

As each storm is unique and varies as to intensity, precipitation type, duration and track it is important to emphasize that these are guidelines to assist Maintenance staff in making sound, consistent, informed and practical decisions in the exercise of their respective snow and ice control duties and responsibilities.

A ***spreading storm*** is a winter storm having a minimal accumulation of snow, sleet, or freezing rain or a combination of the three. Application and reapplication of deicing and/or anti-skid materials will occur when warranted during the course of the storm. Plowing may be required to clear snow or slush from the highway during the storm and/or after the storm has ended.

A ***plowing storm*** is a winter storm having greater accumulation of snow, sleet or freezing rain or a combination of the three. Plowing will be the predominant activity to remove snow and/or ice from the highway. Application of deicing and/or anti- skid materials will normally occur at the beginning of the storm to prevent the bonding of snow and/or ice to the pavement surface. Reapplication of deicing materials and/or anti-skid may be needed during the storm as warranted to insure traction by vehicles and/or to prevent bonding of snow and/or ice to the pavement surface.

Standardized Roadway Condition Descriptions – See Appendix A.

3.5.2 Priorities

This section details the guidelines for snow removal by priority.

1. First Priority – Mainline, Interchanges, Key Connectors, Service Plaza Ramps, Access Gates
2. Second Priority – Plowing back shoulders
3. Third Priority – Wide Areas, Gate Cleanup and Access Roads not previously treated
4. Fourth Priority – Tower Roads, Interchange Cleanups, Parking Lots

3.5.3 Storm Callout Procedures

The District Superintendent and Foreman shall establish storm call out procedures to activate the maintenance organization when adverse weather is imminent. These procedures will specify a method of notifying the Foreman or designated assistant, with authorization to call out operators immediately.

3.5.4 Material Applications and Storm Plowing Procedures

PTC Application Rates Guidelines -- See Appendix H.

This section details the guidelines for snow removal.

Plowing Operation

- Plow trains are a recommended plowing method for use on PTC roadway and should be spaced close enough to prevent vehicles from disrupting the plowing pattern.
- Plow train trucks should be positioned as shown in the drawings located in Appendix I.
- Use of a shadow vehicle is required whenever plow train operations are in use. Use of First Responder vehicle or spare pick-up with message board is acceptable.
- Application of deicing materials should be completed by the trucks located within the travel lanes. The shoulder truck should NOT be spreading.
- The application rate for each truck must be adjusted so the application per lane mile meets the PTC's application rate guideline. See Appendix H.

Spreading Operation

- Roads may be treated with straight salt or a chemical enhancer.
- A salt/anti-skid mix can be used when conditions are such that straight chemical applications are not effective due to lower temperature or additional traction is needed.
- Although the decision to use a straight chemical application or a salt/anti-skid mix is basically a field decision, following the recommended application rates will help to provide a consistent level of service while conserving materials.
- Liquid enhancers may be used as pre-wetting agents to augment the activation of the salt. Sodium chloride (salt brine) should primarily be used as the pre-wetting agent when the temperature is above 15 degrees. When the temperature falls below 15 degrees, calcium chloride should be used as the pre wetting agent. With both materials, the recommended application rate is between 6 and 12 gallons per ton.
- Ultimately, field personnel must decide the final selection of deicing materials or a combination of materials based on availability and experience.

Anti-icing

Anti-icing is the application of a chemical freezing point depressant to prevent bonding between frozen precipitation or frost and a pavement surface. At temperatures below 15°F, falling snow is generally dryer which allows it to blow over the roadway surface. Under these conditions, anti-icing is not recommended. The decision to perform anti-icing may be made by using the PTC's Anti-Icing Decision Tree contained in Appendix J.

3.5.5 Specialty Equipment

Under certain conditions, the PTC uses specialty equipment.

Snow Blowers – Snow blowers can be used to remove deep snow, clean interchanges, gore areas, bridge decks and areas that require the movement of large volumes of snow.

Graders – Useful in plowing operations, graders can also remove ice and packed snow because of the down pressure that can be applied to the under carriage blade. Negatives are that they are slow when compared to trucks and cannot spread deicing materials.

Anti-icing Trucks – Anti-icing trucks are designed for pre-treating the roadway surface prior to the start of a storm event. Refer to PTC Anti-icing Decision Tree, Appendix J.

3.5.6 Tower Road and Access Roads

Operators should exercise care and use slower plowing speeds when working in areas of tower and access roads to avoid potential damage.

Also, caution must be utilized when plowing tower and access roads to avoid windrowing snow in front of private drives or accesses. Equipment Operators should use reasonable care when plowing residential areas to minimize homeowner inconvenience. Slower speeds can reduce windrows.

3.5.7 Cleanup of Roadways and Stockpiles

The time for cleanup operations is after the travel portion of the roadway has been properly treated. Cleanup activities will open drainage systems, providing a place for both snowmelt and future snowfall.

The following areas may require additional attention as part of the cleanup operation:

- Auxiliary lanes such as interchange ramps
- Median barriers and guide rail
- Super elevated curves
- Bridge expansion dams
- Inlets and drainage devices
- Gore areas
- Intersections
- Potential drift areas
- Access gates
- Wide areas
- Tower roads
- Median crossover
- Stockpile parking areas
- Bridge decks – NOTE: Removal of excess snow from bridge decks decreases the “dead load” and reduces icing conditions created by freeze-thaw cycles.

3.5.8 Frost Heave

Frost heave is a result of freeze-thaw cycles that can occur often during the winter months. Frost heave causes vertical movement of highway sections most often at bridge approach slabs and paved shoulders. All Maintenance personnel engaged in roadway work or patrols during the winter season should remain alert to report frost heave conditions to the District Superintendent as soon as they are noticed.

3.5.9 Review of Equipment Damage or Breakdown

Following each winter storm, Equipment Operators are responsible for cleaning and checking their equipment and for reporting repairs required to the Foreman. The Foreman, upon receiving the 63-01 Pre Trip, Post Trip Inspection Form, should schedule repairs for the equipment and provide the Auto Mechanic, Automotive Equipment Supervisor and Operations Manager with a list of needed repairs.

3.5.10 Care and Cleaning of Equipment

The Commission has a large investment in equipment, and to protect this investment, the following applies:

- After each storm, the Foreman must ensure should the Equipment Operator wash all pieces of equipment that is exposed to either chemicals or anti-skid materials.
- ***NOTE: Wash water from equipment cleaning should be directed to the appropriate runoff control or drainage facility.***
- Equipment Operators should monitor plow blades before, during and after use to have them replaced when needed.
- Equipment Operators should check plow and plow assist valves for proper operation before and after each use.
- At the end of the snow removal season, the Foreman is responsible for ensuring that all winter equipment is thoroughly cleaned and serviced to prevent corrosion from any chemical residue.
- Conveyers and augers are to be coated with a protective material for summer storage. All vehicle bodies, snowplows and spreaders are to be routinely inspected.
- District and Section management personnel responsible for the proper maintenance of equipment should inspect all equipment periodically to assure that necessary repairs are scheduled and completed to maintain a state of readiness.

3.5.11 Issue of Winter Materials and Storm Reporting in SAP

SAP/Plant Maintenance System tracks winter material issue and receipt. Timely reporting is very important to ensure accurate inventory controls. Each Operator is to maintain tracking documents for each 24-hour period.

Definition

A Winter Storm occurs when materials are applied to the roadway in conjunction with precipitation. The storm ends when precipitation has stopped and the roadway is wet and the median, shoulder, wide areas and mainline access roads are clear. A break in activity of 10 hours will be considered a new event and a new winter storm work order shall be created

Work Orders

- The Winter Operations Activity work order will be used for all winter operation activities not included on the Winter Storm work order including routine winter patrol, pre and post storm roadway condition patrol, storm prep, storm clean up and cleaning tower roads. Bridge/road freeze up, blowing and drifting snow, snow fence repair.

- Winter Storm work orders are created using order type PM06 for a roadway section - (PTC-D01-ROD-HOME). The priority is Emergency. Set the PM Activity Type on the Header Data tab to RWO and set the Title on the Damage tab to Roadway N78 Winter Storm. Change the start and finish dates to reflect the actual day the storm starts and stops as necessary. Enter the shed name and storm number in the description - (Homewood Winter Storm 3).
- Storm Number is a consecutive number assigned to a storm, starting with number 1 at the beginning of each winter season in every section.
- The storm activity starting and ending calendar dates and times will be entered in the work order extended description area.
- Winter Storm task lists will be created for each section. Search for it by entering *Storm* in the Short Text field on the Task List Selection screen. Adjust the number and duration columns for each work center as necessary and review the materials that were loaded on the components tab.
- Do not plan any materials on Winter Storm Work Orders

Fleet Work Orders

- Mechanics time and materials for minor equipment repairs (30/30 rule) will be charged to the Fleet Equipment Support, not to the winter storm work order.
- Equipment repairs that exceed the 30/30 rule will have a separate work order created for the specific equipment. All materials and hours will be charged to that work order, not to the Winter Storm.
- Equipment prep and clean up labor hours that occur as a result of a Winter Storm will be reported to the Equipment Seasonal Prep and Detail work order.

Winter Storm Work Order Reporting

- Storm related labor hours, material issues, and equipment work center hours will be reported against the work order for each calendar day.
- Labor: Actual time of personnel actively engaged in snow removal activities.
- Materials: Only winter materials; salt, anti-skid, calcium, salt brine, and other roadway deicing products will be charged to the winter storm report.
- Plow blades and accessories should be charged to the work order for the PLOW.
- Equipment Work Centers: The hours reported for equipment work centers in (IW48 - Confirmation using operation list) will be the actual hours used.
- Production: The production units will be entered for each day of the storm using (IK21 - Collective Entry of MeasDocuments) against the Roadway Section Functional Location.

- Example: Functional Location. (PTC-D01-ROD-HOME)
- The Inches of Precipitation should include a description of the type of precipitation.
- Plow Trains are the total number of hours that plow trains are in operation and should also include text defining starting and stopping times.
- Any section personnel, including Foremen, Assistant Foremen and clerical staff, that are actively engaged in snow removal operations will report their hours to the Winter Storm work order.
- Any non-section personnel, excluding district management staff that is actively engaged in snow removal operations will be reported to the PM06 work order for the roadway section they assist.
- The section will be responsible for all (IW48 - Confirmation using operation list) and (IK22 - Collective Entry of MeasDocuments) entries for all snow removal equipment used during the storm in their section.
- Equipment utilization hours must coincide with actual time in use and documented on employees time slips.
- Salt quantities in each facility will be verified and reconciled each month so that appropriate adjustments to storms and materials can be reflected in the same months budget reporting.

3.5.12 Dark Hours Training and Other Activities Performed During Winter Season

It is PTC policy to make a concerted effort to manage our resources wisely and to maintain a level of productivity that is consistent with current PTC goals. This is particularly critical during the winter months.

Clearly, there will be extended periods during the winter when mild weather permits work other than snow removal. Managers must assign projects for non-daylight shift workers. During the winter season, work schedules should maintain productivity while retaining the required flexibility to deal with interruptions caused by inclement weather.

The following are examples of potential productive dark hour work assignments:

Winter/Snow Removal

- Mix salt/anti-skid
- Repair tire chains
- Transfer material
- Repair spreaders/augers

- Receive winter materials
- Perform storm cleanup
- Conduct snow/ice patrol
- Install/remove/repair plows/blades
- Check spreader calibration
- Clean bridges
- Cut bleeders/scuppers under guide rail

Equipment Related Activities

- Clean equipment
- Perform preventive maintenance on equipment
- Transfer equipment
- Paint equipment
- Sharpen cutting tools
- Implement equipment repairs
- Prepare summer equipment

Training

Stockpile/Garage/Administrative

- Perform general housekeeping
- Building painting

Supplies

- Paint signs
- Paint trash barrels
- Hold foremen meetings
- Check and maintain stockpiles
- Paint garage area
- Repair/install fences
- Litter pickup

Roadway/ Bridge Work

- Prepare for daylight activity
- Repair and maintain truck escape ramps
- Survey guide rails
- Perform other bridge maintenance
- Sweep bridge water tables
- Cut brush
- Remove illegal signs from right-of-way
- Remove graffiti
- Maintain Emergency Pull-Off Areas (EPO)
- Survey/repair right-of-way fences
- Handle emergency pothole patching
- Open/clean drainage courses, ditches, inlets, outlets
- Conduct patrols
- Replace/repair signs/posts
- Perform rock slide removal
- Clean up accident residue
- Conduct sign surveys
- Heat kettles for crack/joint sealing
- Delineation review

3.6 Stockpile Planning and Development

This should be coordinated with Legal, FEMO, Engineering and Executive Departments.

Appendix E

Weather Emergency Traffic Management Plan



Pennsylvania Turnpike Commission

Pennsylvania Turnpike Commission Weather Emergency Traffic Management Plan

April 2, 2013

Weather Emergency Traffic Management Plan

This Level plan is designed to manage the Pennsylvania Turnpike when there is significant weather forecast or presence of snow (6 in.), ½ inch of ice, high winds excess 40 mph, flashflood rainfall, 1 inch in the time of 1 hour, or other weather conditions which may impact traffic and public safety. Weather Advisories can be activated for a specific region or the entire Turnpike system when there are any issues concerning travel conditions or weather that does not meet the Level activations. The key to this plan will be the fast and efficient notification of the needed resources and to move traffic safely and quickly.

Advisory- This is an **Advisory** issued of an approaching weather incident to notify our agency for preparation and alerts motorists of safety issues concerning travel on the Turnpike system. The advisory also serves as a regional or district public notification due to weather or roadway conditions occurring that do not meet the specifications for the Level activations. Examples are fog, heavy rain with water pooling, passing snow showers or squalls, heat or cold index issues or others that do not meet the criteria. There are specific procedures that are activated due to these events.

Level 1 - A preliminary AccuWeather or National Weather Service (NWS) **Warning** is issued for potential severe weather conditions that will impact travel conditions on the Pennsylvania Turnpike. Emergency crews may be working on the highway to clear travel lanes or drainage systems in preparation for the weather conditions.

Level 2 – When weather conditions are increasing in severity that meet the plan criteria impacting travel along with forecasts prediction of an accumulation of significant snowfall, ice, water pooling, flooding, high wind speeds, extreme heat or extreme cold. This level enables the clearance of abandoned vehicles or PTC staff to assist travelers.

Level 3 – A weather incident that significantly impacts the free flow of travel on the system or is a safety threat to employees or the public denotes this level. An example would be ten inches plus with two to three inches per hour of snow falling. Turnpike and outside agencies coordinate in the restriction of vehicles from traveling the PTC system and PA roadways. This close cooperation is required to communicate the Commonwealth needs to managing traffic flow and coordinating the resources to eliminate further emergencies.

Level 4 - This last resort is the closure of designated sections of the Pennsylvania Turnpike and affiliated PA roadways across the Commonwealth. This level is coordinated with Pennsylvania Emergency Management Agency (PEMA) and Penn DOT.

Activations/Deactivations – All Weather Advisories and Level activations/deactivations will be initiated by the Operations Center after communications with the Director of Operations, Safety and Incident Response and Director of Maintenance.

ROADWAY CONDITION DESCRIPTIONS

COMMON DESCRIPTIONS: In order to attain a common understanding of winter road conditions, the following conditions and definitions have been established. These condition descriptions represent the predominate condition of the road being reported.

Condition 1: Clear - Dry/wet pavement surface is maintained at all times.

This condition represents time periods when the pavement and air temperatures are above freezing with or without precipitation. This condition may also exist when temperatures are at or below freezing and traffic is able to maintain speeds at or near posted limits. (An example would be during the cleanup phase of a minor event when roads are wet and reports indicate they are freezing dry with traffic speeds returning to normal.)



Condition 2: Wet with Freezing Conditions - Wet pavement surface is the general condition with air temperatures near or below freezing. There are occasional areas having snow or ice accumulations resulting from drifting, sheltering, cold spots, frozen melt-water, etc.

This condition should be utilized during periods of precipitation when air and/or pavement temperatures are at 34 degrees and are expected to drop to freezing or below freezing during the course of the storm. This condition should also be used when wet or light snow cover conditions are expected to persist for two or more hours with freezing temperatures.



Condition 3: Snow and/or Slush Covered - Accumulations of loose snow or slush are regularly found on the pavement surface. Light to moderate snow cover may be present in some areas (up to 2 inches on secondary routes).

Some snow packed and/or icy conditions may be present but do not represent predominate road conditions on the interstates. Reduced travel speeds may be required due to slick road conditions.



Condition 4: Snow Packed / Significant Snow Cover - The pavement surface has continuous stretches of packed snow with or without loose snow on top of packed snow and ice. Significant snow accumulations are present in some areas (2 – 5in).

This condition may become prevalent during periods of heavy snowfall. Speed limit reductions and vehicle restrictions should be considered when this becomes the predominate condition on the roadway.



Condition 5: Icy - The pavement surface is predominantly covered with ice and packed snow. There may be loose snow or sleet on top of the icy or packed snow surface.

This condition may be the result of sleet, freezing rain, snow melt or refreeze. Reduced travel speeds may be necessary and motorists should be advised to limit travel or travel at significantly reduced speeds until conditions improve.



Condition 6: Impassable - The road is temporarily impassable to most or all vehicles. This may be the result of severe weather (low visibility, blowing snow, etc.) or road conditions [drifting, excessive unplowed snow (5+ inches), avalanche potential or actuality, glare ice, etc.]

Weather Advisory

Initial notification will occur to all departments as soon as alerts are received at the Operations Center. Field notifications of weather conditions that do not meet the Plan Alert Levels will be sent as an Advisory to PA Turnpike Commission staff and communicated to State Police Troop T to assure that all are communicating the resource needs.

Department of Operations, Safety, and Incident Response

1. The Director of Operations, Safety and Incident Response; Director of Maintenance; Director of Fare Collection; Captain of State Police Troop T; Director of Communications & Public Affairs; Director of Facilities & Energy Management Operations (FEMO); Chief Engineer and Executive Departments will be notified via e-mail distribution list of the reported weather changes in travel conditions.
2. The Duty Officer will initiate polling. Weather polling will be initiated as needed basis if conditions change to enable the monitoring of weather conditions that are affecting each section. In addition to the radius buttons to click for roadway conditions, maintenance action, weather conditions and visibility, the data to be provided in the comments sections will be:
 - a. Road temperature
 - b. Air temperature
 - c. Roadway condition from descriptor list
 - d. Actions being performed in the section (ie. heavy wind and snow; plowing and salting).
3. The following message is the standard message to play on the permanent dynamic message signs (DMS):

**WEATHER
ALERT**

**TUNE TO
1640 AM**

4. All regional or system-wide Intelligent Transportation System (ITS) devices, Webpage and Emergency Notification System (ENS) affiliated with the plan will be activated to warn motorists.
5. Activate Highway Advisory Radio's as followed:

All travelers are urged to reduce their speeds and keep alert for changing travel conditions and emergency crews working on the roadway. (Any specific information relating to conditions or actions.)

Weather Advisory

Maintenance Department

1. Maintenance priority is to maintain the roadway surface in a travel condition. Maintenance will work to ensure the system and personnel are prepared for the current weather. Field personnel will ensure that drainage systems and roadways are clear of debris. Field personnel are to verify that all equipment is fueled and ready for activation. Management will ensure adequate staffing schedules.
2. Maintenance sheds are polled to provide current roadway conditions by selected districts or regions. In addition to the radius buttons to click for roadway conditions, maintenance action, weather conditions and visibility, the data to be provided in the comments sections will be:
 - a. Road temperature
 - b. Air temperature
 - c. Roadway condition from descriptor list
 - d. Actions being performed in the section (ie. heavy wind and snow; plowing and salting).
3. Activate message #40 on the portable DMS at maintenance sheds at designated locations. (Position portable DMS at mountainous areas for climbing lanes.)

**WEATHER
ALERT**

**TUNE TO
1640 AM**

State Police Troop T

1. Will monitor and report the roadway conditions.
2. Assist other agencies with Traffic Control.

FEMO

Service Plazas are to report any loss of services or power to the Operations Center.

Fare Collection

Report any roadway obstructions or storm condition that would require assistance.

Toll Waiving

No action at this level is needed.

Communications & Public Affairs

No action at this level is needed.

Engineering

No action at this level is needed.

Level I Storm Procedures

Initial notification will occur to all departments as soon as forecasts are received. These forecasts are gathered from various sources but will be confirmed and coordinated with other agencies such as PEMA, Penn DOT and State Police to assure that all are communicating the resource needs.

Department of Operations, Safety, and Incident Response

1. The Director of Operations, Safety and Incident Response; Director of Maintenance; Director of Fare Collection; Captain of State Police Troop T; Director of Communications & Public Affairs; Director of Facilities & Energy Management Operations (FEMO); Chief Engineer and Executive Departments will be notified of the weather forecast predicting significant changes in travel conditions.
2. National Weather Service/AccuWeather alerts will be auto generated to a pre-described distribution list.
3. Customer/Employee Safety Manager will be notified to ensure Safety Advisors availability and deploy as needed.
4. PEMA and Penn DOT will be notified by the Turnpike Emergency Preparedness Liaison Officer (EPLO) or their representative of preliminary efforts of the Turnpike Commission to prepare for the upcoming weather emergency.
5. Will ensure adequate Operations Center emergency weather schedules.
6. If Maintenance console is not staffed the Duty Officer will initiate polling. Weather polling will be initiated every 4 hours or on an as needed basis if conditions change to enable the monitoring of impending weather conditions that are predicted per section. In addition to the radius buttons to click for roadway conditions, maintenance action, weather conditions and visibility, the data to be provided in the comments sections will be:
 - a. Road temperature
 - b. Air temperature
 - c. Roadway condition from descriptor list
 - d. Actions being performed in the section (ie. heavy wind and snow; plowing and salting).
7. The following message is the standard message to play on the permanent dynamic message signs (DMS):

WEATHER TUNE TO
ALERT 1640 AM

Level I Storm Procedures

8. All regional or system-wide Intelligent Transportation System (ITS) devices, Webpage and Emergency Notification System (ENS) affiliated with the plan will be activated to warn motorists.

9. Activate Highway Advisory Radio's as followed:

All travelers are urged to reduce their speeds and keep alert for changing travel conditions and emergency crews working on the roadway. (Any specific information relating to conditions or actions)

10. Notifications will be made to Authorized Service Providers of the impending weather 4 to 6 hours prior to activation of Level 2 and place them on notice for ***possible*** activation of Abandoned Vehicle Procedures Title 67, 601.15A, Page 9, Rules and Regulations.

11. A storm/weather call will be initiated as requested by Director of Operations, Safety and Incident Response or Director of Maintenance and include designees from other departments. Personnel may participate by conference call or in person in the Operations Center Conference (War) Room. Attendees will include Operations, Safety & Incident Response, Maintenance, Fare Collection, State Police Troop T, Communications & Public Affairs, FEMO, Engineering and Executive Departments.

Maintenance Department

1. Maintenance priority is to maintain the roadway surface in a travel condition. At Level 1, Maintenance will work to ensure the system and personnel are prepared for the upcoming weather incident. Field personnel will ensure that drainage systems and roadways are clear of debris. Field personnel are to verify that all equipment is fueled and ready for activation. Management will ensure adequate staffing schedules.

2. Maintenance will make the decision when to staff the Operations Center console. Weather polling will be initiated every 4 hours or on an as needed basis if conditions change to enable the monitoring of impending weather conditions that are predicted per section. In addition to the radius buttons to click for roadway conditions, maintenance action, weather conditions and visibility, the data to be provided in the comments sections will be:

- e. Road temperature
- f. Air temperature
- g. Roadway condition from descriptor list
- h. Actions being performed in the section (ie. heavy wind and snow; plowing and salting).

Level I Storm Procedures

3. Activate message #40 on the portable DMS at maintenance sheds and designated locations. (Position portable DMS at mountainous areas for climbing lanes.)

**WEATHER
ALERT**

**TUNE TO
1640 AM**

State Police Troop T

1. Will monitor and report the roadway conditions.
2. Will ensure adequate staffing schedules.

FEMO

1. Contact PTC Concessionaires and HMS Host to prepare Plaza's parking lots to be cleared of snow or debris. Contact:
 - a. PTC's Concessions Services Supervisor, Mike Fix 717-658-2468 cell, office (717) 939-9551 ext. 2314
 - b. HMSHost, Fred Fox (407) 497-9832 Fred.Fox@hmshost.com
 - c. Sunoco, Inc., Joan C. Scarpa (215) 779-0688 JCSCARPA@sunocoinc.com
2. Service Plazas are to report any loss of services or power to the Operations Center.
3. FEMO will make the decision to staff the Operations Center console.
4. Ensure preparation for staffing administration buildings to include maintaining service such as power, janitorial, water and supplies for the duration of the storm.
5. Prepare staff to check that generators are working properly and fueled. Report any generator activations to the Operations Center.

Fare Collection

1. Ensure adequate supplies of sand bags and informational 1640 AM "pink" signs are on hand.

Toll Waiving

No action at this level is needed.

Communications & Public Affairs

No action at this level is needed.

Level I Storm Procedures

Engineering

1. Identify any contractor construction activities that will impact field operations during weather incidents. Have contractors submit to Operations Center emergency contacts for 24/7 coverage due to storm on projects that could lead to debris or site issues.
2. Contractors will ensure that drainage systems and roadway are clear of debris and construction signs are secured.

Level 2 Storm Procedures

Updated notifications will occur to all departments as soon as alerts are received. These alerts are gathered from various sources to include PSP and Maintenance crews on the roadway. Continued coordination with other agencies such as PEMA, Penn DOT and State Police will assure that all are communicating the resource needs.

Department of Operations, Safety, and Incident Response

1. The Director of Operations, Safety and Incident Response; Director of Maintenance; Director of Fare Collection; Captain of State Police Troop T; Director of Communications & Public Affairs; Director of FEMO; Chief Engineer and Executive Departments will be notified of the weather forecast predicting significant changes in travel conditions.
2. Any National Weather Service/AccuWeather updates, warnings, advisories, special statements and forecasts will be broadcast to the field operations along with a summary of the field unit reports.
3. Customer/Employee Safety Manager will be notified to ensure Safety Advisors availability and deploy as needed.
4. PEMA and Penn DOT (Area Command Representative 717-783-5437) will be notified by the Turnpike EPLO or their representative of the continued efforts of the Turnpike Commission actions for the weather emergency. The PEMA staff will also evaluate the need to staff the State Emergency Operations Center (EOC). Once the PTC staff is located at the State EOC, all communications between the Turnpike and PEMA are to be communicated through the PTC EPLO and the Operations Center for both outgoing and incoming resource requests.
5. Will ensure adequate Operations Center emergency weather schedules.
6. If Maintenance console is not staffed the Duty Officer will initiate polling. Weather polling will be initiated every 2 hours or on an as needed basis if conditions change to enable the monitoring of impending weather conditions that are predicted per section. In addition to the radius buttons to click for roadway conditions, maintenance action, weather conditions and visibility, the data to be provided in the comments sections will be:
 - a. Road temperature
 - b. Air temperature
 - c. Roadway condition from descriptor list
 - d. Actions being performed in the section (ie. heavy wind and snow; plowing and salting).
7. The following message is the standard message to play on the permanent DMS signs:

**WEATHER
ALERT**

**TUNE TO
1640 AM**

Level 2 Storm Procedures

8. All regional or system-wide Intelligent Transportation System (ITS) devices, Webpage and Emergency Notification System (ENS) affiliated with the plan will be activated to warn motorists.
9. Activate Highway Advisory Radio's as followed:

All travelers are urged to reduce their speeds and keep alert for changing travel conditions and emergency crews working on the roadway. Do not attempt to pass Turnpike trucks plowing or servicing the highway. Motorists operating trucks, campers and vehicles pulling trailers, your vehicles may become unstable during high wind conditions. Reduce your speed when you encounter high winds. (any specific information relating to roadway conditions)

10. The Duty Officer and Customer/Employee Safety Manager will advise activation of the Abandoned Vehicle Procedures, Title 67, 601.15A, Page 9, Rules and Regulations.
 - a. Notification will be made to Authorized Service Providers to standby for the event at designated staging areas identified by PTC. Authorized Service Provider coverage (one heavy wrecker per coverage area) may be requested to standby at the following locations as weather dictates or as needed: Blue/Kitt Tunnel, Kegg Maintenance, MP 99.9 (Laurel Highlands), Mahoning Valley Interchange and Donegal Maintenance.
 - b. Notification to State Police Troop T for the activation of the Abandoned Vehicle Policy and any potential vehicle restrictions, Title 67, 601.15A, Page 9, Rules and Regulations. Ensure State Police document the vehicle information and tow location within CAD's. All inquiries into where vehicles are towed and why are referred to State Police.
11. The following procedures may be initiated (***include a time of activation***) in conjunction with Communications & Public Relations Department's media release. **Any** of the following restrictions can be approved for activation and enforced through Title 67, 601.15A, Page 9, Rules and Regulations.
 - a. All Class 9's oversized vehicles are banned from travel.
 - b. Abandoned vehicles will be towed immediately.
 - c. Trucks and trailers are required to travel in right lane only in mountainous areas.
 - d. Coordinate with Communications & Public Relations Department to create an advisory that we may do a ban on commercial vehicles that are doubles, any empty trailer, and personal vehicles towing trailers in preparation for move to Level 3.
12. Initiate the communication to Maintenance and Fare Collections of the E-ZPASS express lane closures in accordance with the Traffic Management Plan.
13. Contact CHART Maryland, Penn DOT District Traffic Management Centers (TMC), Penn DOT Area Command Representative (717-783-5437), PEMA or any other agency affiliated with distribution of the plan activated.
14. Coordinate PEMA/Penn DOT storm/weather calls as needed. Personnel may participate by conference call or in person in the Operations Center Conference (War) Room. Attendees will include Operations, Safety & Incident Response, Maintenance, Fare Collection, State Police Troop T, Communications & Public Affairs, FEMO, Engineering and Executive Departments.

Level 2 Storm Procedures

15. Activate the PTC employee hotline. If needed.

Maintenance Department

1. Maintenance priority is to maintain the roadway surface in a travel condition. Constant Plow Trains may be activated to clear the roadway dependent upon snow conditions. The section/district will remain at a Level 2 until the entire section/district weather permits a move to another storm procedure level.
2. Maintenance will make the decision when to staff the Operations Center console. Weather polling will be initiated every 2 hours or on an as needed basis if conditions change to enable the monitoring of impending weather conditions that are predicted per section. In addition to the radius buttons to click for roadway conditions, maintenance action, weather conditions and visibility, the data to be provided in the comments sections will:
 - a. Road temperature
 - b. Air temperature
 - c. Roadway condition from descriptor list
 - d. Actions being performed in section (ie. heavy wind and snow; plowing and salting).
3. Ensure message #40 on the portable DMS at maintenance sheds and designated locations is continuing from Level 1. (Position portable DMS at mountainous areas for climbing lanes.)

**WEATHER
ALERT**

**TUNE TO
1640 AM**

4. Requests for PSP escort for any plow trains needs to be made 30 minutes in advance of the start of the plow train. This request is made to the Ops Center to coordinate with PSP Communications Corporal.
5. Assist in identifying abandoned vehicle locations to Operations Center so that State Police can document the vehicle information and tow location after removal.
6. Maintenance will, when personnel are available, respond and assist with traffic control, incident management, and may be required to monitor the backlog in conjunction with the Pennsylvania State Police.
7. Report any facility power failures or generator activations to the Operations Center.

Level 2 Storm Procedures

8. Initiate the closure of Express E-ZPASS lanes in compliance with traffic management plans as crews are available to do so.

State Police Troop T

1. Will monitor and report the roadway conditions.
2. Will ensure adequate staffing schedules.
3. Will escort plow trains as requested when patrols are available.
4. Will assist in the implementation of any traffic management plan.
5. Will provide a presence as needed to assist with ASP issues.
6. Will enforce – Abandoned Vehicles, Title 67, 601.15A, Page 9, Rules and Regulations.
7. Will assist with patrolling backlogs and assist motorists.
8. Will establish Incident Command, if necessary.

FEMO

1. Contact PTC Concessionaires and HMS Host to ensure Plaza's parking lots are cleared of snow or debris. Contact:
 - a. PTC's Concessions Services Supervisor, Mike Fix 717-658-2468 cell, office (717) 939-9551 ext. 2314
 - b. HMSHost, Fred Fox (407) 497-9832 Fred.Fox@hmshost.com
 - c. Sunoco, Inc., Joan C. Scarpa (215) 779-0688 JCSCARPA@sunocoinc.com
2. Service Plazas are to report any loss of services or power to the Operations Center.
3. FEMO will make the decision to staff the Operations Center console.
4. Ensure staffing for administration buildings to include maintaining service such as power, janitorial, water and supplies for the duration of the storm.
5. Ensure generators are working properly and fueled. Report any generator activations to the Operations Center.

Fare Collection

1. Deploys informational 1640 AM "pink" signs.
2. Prepares for reduced entry lanes as needed. (Single Lane Entry Procedures)

Level 2 Storm Procedures

3. Activates InstAlert signs with 1640 AM information. (If available at location)

Toll Waiving

1. As conditions warrant, implement toll waiving as per PTC procedure. This will include Electronic Toll Collection (ETC) procedures.
2. Requests for state emergency response or utility travel toll waiving or consolidated billing purposes will go through PEMA, Operations Center and Fare Collection for approval.

Communications & Public Affairs

1. Prepare press release for travel conditions and for potential bans and restrictions coordinated with Penn DOT Press Office. The following procedures may be initiated (***include a time of activation***) in conjunction with Operations Center for any media releases. Any of the following restrictions can be approved for activation and enforced through Title 67, 601.15A, Page 9, Rules and Regulations.
 - a. All Class 9's oversized vehicles are banned from travel.
 - b. Abandoned vehicles will be towed immediately.
 - c. Trucks and trailers are required to travel in right lane only in mountainous areas.
 - d. Coordinate with Operations Center to create an advisory that we may do a ban on commercial vehicles that are doubles, any empty trailer, and personal vehicles towing trailers in preparation for move to Level 3.
 - e. Any Speed reductions.
2. Ensure adequate staffing of the Customer Service Center

Engineering

1. Identify any contractor construction activities that will impact field operations during weather incidents. Have contractors submit to Operations Center emergency contacts for 24/7 coverage due to storm on projects that could lead to debris or site issues.
2. Contractors will ensure that drainage systems and roadway are clear of debris and construction signs are secured.

Level 3 Storm Procedures

A weather incident that significantly impacts the free flow of travel on the system or is a safety threat to employees or the public denotes this level. An example would be ten inches plus with two to three inches per hour of snow falling. Updated notifications will occur to all departments as soon as alerts are received. These alerts are gathered from various sources to include PSP and Maintenance crews on the roadway. The reports are analyzed by executive staff for the activation of travel restrictions on the PTC system regional or system-wide. Continued coordination with other agencies such as PEMA, Penn DOT and State Police will ensure that all are communicating the resource needs.

Department of Operations, Safety, and Incident Response

1. The Director of Operations, Safety and Incident Response; Director of Maintenance; Director of Fare Collection; Captain of State Police Troop T, Director of Communications & Public Affairs; Director of FEMO; Chief Engineer and Executive Departments will be notified of the weather forecast predicting significant changes in travel conditions.
2. Any National Weather Service/AccuWeather updates, warnings, advisories, special statements and forecasts will be broadcast to the field operations along with a summary of the field unit reports.
3. Customer/Employee Safety Manager and Safety Advisors will deploy as needed.
4. PEMA and Penn DOT (Area Command Representative 717-783-5437) will be notified by the Turnpike EPLO or their representative of the continued efforts of the Turnpike Commission actions for the weather emergency. The PEMA staff will also evaluate the need to staff the State Emergency Operations Center (EOC). Once the PTC staff is located at the State EOC, all communications between the Turnpike and PEMA are to be communicated through the PTC EPLO and the Operations Center for both outgoing and incoming resource requests.
5. Will ensure adequate Operations Center emergency weather schedules.
6. Maintenance will staff the Operations Center console. Weather polling will be initiated every hour or on an as needed basis if conditions change to enable the monitoring of impending weather conditions that are predicted per section. In addition to the radius buttons to click for roadway conditions, maintenance action, weather conditions and visibility, the data to be provided in the comments sections will be:
 - a. Road temperature
 - b. Air temperature
 - c. Roadway condition from descriptor list
 - d. Actions being performed in section (i.e. heavy wind and snow; plowing and salting).

Level 3 Storm Procedures

7. The following message can be modified to play on the Permanent DMS signs during Level 3 depending on any restrictions:

WEATHER ALERT
TUNE TO 1640am
SPEED LIMIT ___

TRUCK AND
TRAILER
RESTRICTIONS

8. All regional or system-wide ITS devices, Webpage, and ENS affiliated with the plan will be activated to warn motorists of the following travel restrictions in conjunction with Communications & Public Relations Department media release.
9. Activate Highway Advisory Radio's as follows to include any restrictions that may apply per Director's coordination with other departments. This may include numerous options:

The Pennsylvania Turnpike is now operating under a Weather Emergency. The following restrictions apply to all travelers. Speed limits are now reduced to 45 miles per hour between Interchange #__ and Interchange #___. Trucks pulling doubles or empty trailers are now restricted from traveling in this area. Additionally, vehicles pulling campers, utility and horse trailers are also restricted. Do not attempt to pass Turnpike trucks plowing or servicing the highway. Reduce your speed when you encounter high winds. All abandoned vehicles are being removed to allow crews to clear the roadway.

10. The Duty Officer and Customer/Employee Safety Manager will advise activation of the Abandoned Vehicle Procedures, Title 67, 601.15A, Page 9, Rules and Regulations.
 - a. ASP will stand-by at designated locations in the region declared a weather emergency as the weather dictates and as needed. These designated locations include interchanges, Blue/Kitt Tunnel, Kegg Maintenance, MP 99.9 (Laurel Highlands) and Donegal Maintenance.
 - b. Identify and establish staging locations for other needed resources.
11. The following procedures may be initiated (***include a time of activation***) in conjunction with Communications & Public Relations Department's media release. Any of the following restrictions can be approved for activation and enforced through Title 67, 601.15A, Page 9, Rules and Regulations.
 - a. All Class 9's oversized vehicles are banned from travel.
 - b. Commercial trailers that are doubles and any empty trailer are banned from travel.
 - c. All trailers towed behind personal vehicles are banned from travel.
 - d. Abandoned vehicles will be towed immediately.
 - e. Any Speed reductions, coordinated with Penn DOT Media releases

Level 3 Storm Procedures

12. Initiate the communication to Maintenance and Fare Collection of the E-ZPASS lane closures in accordance with the Traffic Management Plan.
13. Contact CHART Maryland, PennDOT District TMC's, PEMA or any other agency affiliated with distribution of the plan activated.
14. Coordinate PEMA and Penn DOT storm/weather calls as needed. Personnel may participate by conference call or in person in the Operations Center Conference (War) Room. Attendees will include Operations, Safety & Incident Response, Maintenance, Fare Collection, State Police Troop T, Communications & Public Affairs, FEMO, Engineering and Executive Departments.
15. Activate the PTC employee hotline.

Maintenance Department

1. Maintenance priority is to maintain the roadway surface in a travel condition.
2. Maintenance will staff the Operations Center console. Weather polling will be initiated every hour or on an as needed basis if conditions change to enable the monitoring of impending weather conditions that are predicted per section. In addition to the radius buttons to click for roadway conditions, maintenance action, weather conditions and visibility, the data to be provided in the comments sections will be:
 - a. Road temperature
 - b. Air temperature
 - c. Roadway condition from descriptor list
 - d. Actions being performed in section (ie. heavy wind and snow; plowing and salting).
3. If instructed by executive staff or Director of Maintenance, ensure selected safety message on the portable DMS at maintenance sheds and designated locations are activated. (Position portable DMS at mountainous areas for climbing lanes.)

**TUNE TO
1640 AM**

**SELECTED
SAFETY
MESSAGE**

4. Requests for PSP escort for any plow trains needs to be made 30 minutes in advance of the start of the plow train. This request is made to the Ops Center for State Police Communications Corporal to coordinate.
5. Assist in identifying abandoned vehicle locations to Operations Center so that State Police can document the vehicle information and tow location after removal.

Level 3 Storm Procedures

6. Maintenance will, when personnel are available, respond and assist with traffic control, incident management, and may be required to monitor the backlog in conjunction with the State Police.
7. Report any facility power failures or generator activations to the Operations Center.
8. Will initiate the closure of E-ZPASS lanes in compliance with traffic management plans.
9. When staff is available, assist Fare Collection in deploying Interchange Information Signs prior to entry to Interchanges along with single lane entry signs.
10. Will establish Incident Command if necessary.

State Police Troop T

1. Will monitor and report the roadway conditions.
2. Will ensure adequate staffing schedules.
3. Will escort plow trains as requested when patrols are available.
4. Will assist in the implementation of any traffic management plan.
5. Will provide a presence as needed to assist with ASP issues.
6. Will enforce – Abandoned Vehicles Reference - Title 67, 601.15A, Page 9, Rules and Regulations.
7. Will assist with patrolling backlogs and trapped motorists. Verify stranded motorists are cared for as needed.
8. Will establish Incident Command if necessary.

FEMO

1. Contact PTC Concessionaires and HMS Host to ensure Plaza's parking lots are cleared of snow and debris. Contact:
 - a. PTC's Concessions Services Supervisor, Mike Fix 717-658-2468 cell, office (717) 939-9551 ext. 2314
 - b. HMSHost, Fred Fox (407) 497-9832 Fred.Fox@hmshost.com
 - c. Sunoco, Inc., Joan C. Scarpa (215) 779-0688 JCSCARPA@sunoco.com
2. Service Plazas are to report any loss of services or power to the Operations Center.

Level 3 Storm Procedures

3. FEMO will make the decision to staff the Operations Center console.
4. Ensure staffing for administration buildings to include maintaining service such as power, janitorial, water and supplies for the duration of the storm.
5. Ensure generators are working properly and fueled. Report any generator activations to the Operations Center.
6. The accommodations of employee's for long durations of work will need to be considered. This would include lodging, food and drink.

Fare Collection

1. Will restrict Class 9's, double trailers, empty commercial trailers, personal vehicles towing trailers from entry when instructed to do so by executive staff.
2. Will assist in identifying abandoned vehicles at Interchange locations.
3. Will continue to monitor the roadway and traffic conditions and report changes to Operations Center and request Traffic Control assistance from Maintenance and PSP.
4. Will implement the single lane entry procedures. Initiate mixed mode E-ZPASS lane. E-ZPASS only lanes will be closed by Fare Collection in accordance with plans when adequate staff can safely do so. Maintenance will assist when staff is available.
5. Will deploy Interchange Information Signs at end of ramp. Maintenance will assist when staff is available.
6. Will monitor and report any generator uses and fuel levels at the interchanges to Operations Center.

Toll Waiving

1. As conditions warrant, implement toll waiving as per PTC procedure. This will include Electronic Toll Collection (ETC) procedures.
2. Requests for state emergency response or utility travel toll waiving or consolidated billing purposes will go through PEMA, Operations Center and Fare Collection for approval.

Level 3 Storm Procedures

Communications & Public Affairs

1. Prepare press release for travel conditions and for potential bans and restrictions coordinated with Penn DOT Press Office. The following procedures may be initiated (*include a time of activation*) in conjunction with Operations Center for any media releases. Any of the following restrictions can be approved for activation and enforced through Title 67, 601.15A, Page 9, Rules and Regulations.
 - f. All Class 9's oversized vehicles are banned from travel.
 - g. Abandoned vehicles will be towed immediately.
 - h. Trucks and trailers are required to travel in right lane only in mountainous areas.
 - i. Coordinate with Operations Center to create an advisory that we may do a ban on commercial vehicles that are doubles, any empty trailer, and personal vehicles towing trailers in preparation for move to Level 3.
 - j. Any Speed reductions.

2. Ensure adequate staffing of the Customer Service Center

Engineering

1. Engineering will be on call as needed.

Level 4 Storm Procedure

Updated notifications will occur to all departments as soon as received. These notifications are gathered from various sources to include PSP and Maintenance crews on the roadway. The reports are analyzed by executive staff for the closure or additional restrictions on the PTC system regional or system-wide. Continued coordination with other agencies such as PEMA, Penn DOT and State Police will ensure that all are communicating the resource needs.

Department of Operations, Safety, and Incident Response

1. The Director of Operations, Safety and Incident Response; Director of Maintenance; Director of Fare Collection; Captain of State Police Troop T; Director of Communications & Public Affairs; Director of FEMO; Chief Engineer and Executive Departments will be notified of the weather forecast predicting significant changes in travel conditions.
2. National Weather Service alerts will be distributed via the Incident Notification and Emergency Notification Systems. Any National Weather Service updates and/or forecasts will be broadcast to the field operations along with a summary of the field unit reports via the radio.
3. PEMA and Penn DOT (Area Command Representative 717-783-5437) will be notified by the Turnpike EPLO or their representative of the continued efforts of the Turnpike Commission actions for the weather emergency. The PEMA staff will also evaluate the need to staff the State Emergency Operations Center (EOC). Once the PTC staff is located at the State EOC, all communications between the Turnpike and PEMA are to be communicated through the PTC EPLO and the Operations Center for both outgoing and incoming resource requests.
4. Maintenance will staff the Operations Center console. Weather polling will be initiated every hour or on an as needed basis if conditions change to enable the monitoring of impending weather conditions that are predicted per section. In addition to the radius buttons to click for roadway conditions, maintenance action, weather conditions and visibility, the data to be provided in the comments sections will be:
 - a. Road temperature
 - b. Air temperature
 - c. Roadway condition from descriptor list
 - d. Actions being performed in section (ie. heavy wind and snow; plowing and salting).
5. The following message is the standard message to play on the Permanent VMS signs:

TRAFFIC ALERT
TUNE TO 1640am

ROADWAY
CLOSED
(location)

Level 4 Storm Procedure

6. All regional or system-wide ITS devices, Webpage, and ENS affiliated with the plan will be activated to warn motorists of the following travel restrictions and highway closures in conjunction with Communications & Public Relations Department media release. Any of the following restrictions can be approved for activation and enforced through Title 67, 601.15A, Page 9, Rules and Regulations.
 - a. All Class 9's oversized vehicles are banned from travel.
 - b. Commercial trailers that are doubles and any empty trailer are banned from travel.
 - c. All trailers towed behind personal vehicles are banned from travel.
 - d. Abandoned vehicles will be towed immediately.
 - e. The speed limit is reduced.

7. Activate Highway Advisory Radio's as follows depending on restrictions and actions:

The Pennsylvania Turnpike is now operating under a Weather Emergency. The following ROADWAY CLOSURES and restrictions apply to all travelers. The highway is closed between Interchange #__ and Interchange #___. Speed limits are now reduced to 45 miles per hour between Interchange #__ and Interchange #___. Trucks pulling doubles or empty trailers are now restricted from traveling in this area. Additionally vehicles pulling, campers, utility and horse trailers are also restricted. Do not attempt to pass Turnpike trucks plowing or servicing the highway. All abandoned vehicles are being removed from the Turnpike to allow crews to clear the roadway. (any specific information relating to conditions)

8. Contact CHART Maryland, PennDOT District TMC's, PEMA or any other agency affiliated with distribution of the plan activated.
9. Coordinate PEMA and Penn DOT storm/weather calls as needed. Personnel may participate by conference call or in person in the Operations Center Conference (War) Room. Attendees will include Operations, Safety & Incident Response, Maintenance, Fare Collection, State Police Troop T, Communications & Public Affairs, FEMO, Engineering and Executive Departments.
10. Activate the PTC employee hotline if needed.

Maintenance Department

1. Maintenance priority is to maintain the roadway surface in a travel condition.

Level 4 Storm Procedure

2. The maintenance console in the Operations Center will be staffed. Weather polling will be initiated every hour or on an as needed basis if conditions change to enable the monitoring of impending weather conditions that are predicted per section. In addition to the radius buttons to click for roadway conditions, maintenance action, weather conditions and visibility, the data to be provided in the comments sections will be:
 - a. Road temperature
 - b. Air temperature
 - c. Roadway condition from descriptor list
 - d. Actions being performed in section (ie. heavy wind and snow; plowing and salting).
3. If instructed by executive staff or Director of Maintenance, ensure selected safety message on the portable DMS at maintenance sheds and designated locations are activated. (Position portable DMS at mountainous areas for climbing lanes.)

**TUNE TO
1640 AM**

**SELECTED
SAFETY
MESSAGE**

4. Requests for PSP escort for any plow trains needs to be made 30 minutes in advance of the start of the plow train. This request is made to the Ops Center for the State police Communications Cpl. to coordinate.
5. Assist in identifying abandoned vehicle locations to Operations Center so that State Police can document the vehicle information and tow location after removal.
6. Maintenance will, when personnel are available, respond and assist with traffic control, roadway closures, incident management, and may be required to monitor the backlog in conjunction with the State Police.
7. Report any facility power failures or generator activations to the Operations Center.
8. Will initiate the closure of E-ZPASS lanes in compliance with traffic management plans.
9. When staff is available, assist Fare Collection in deploying Interchange Information Signs prior to entry to Interchanges along with single lane entry signs. (The entry of traffic must be controlled as to refuse admittance to travel on sections of the roadway.)
10. Will establish Incident Command if necessary.

State Police Troop T

1. Will assist in the closure of designated ramps and roadways both PTC and Penn DOT.

Level 4 Storm Procedure

2. Will monitor and report the roadway conditions.
3. Will ensure adequate staffing schedules.
4. Will escort plow trains as requested when patrols are available.
5. Will assist in the implementation of any traffic management plan.
6. Will provide a presence as needed to assist with ASP issues.
7. Will enforce – Abandoned Vehicles Reference - Title 67, 601.15A, Page 9, Rules and Regulations.
8. Will assist with patrolling backlogs and trapped motorists. Verify stranded motorists are cared for as needed.
9. Will establish Incident Command if necessary.

FEMO

1. Contact PTC Concessionaires and HMS Host to ensure Plaza's parking lots are cleared of snow and debris. Contact:
 - a. PTC's Concessions Services Supervisor, Mike Fix 717-658-2468 cell, office (717) 939-9551 ext. 2314
 - b. HMSHost, Fred Fox (407) 497-9832 Fred.Fox@hmshost.com
 - c. Sunoco, Inc., Joan C. Scarpa (215) 779-0688 JCSCARPA@sunocoinc.com
2. Service Plazas are to report any loss of services or power to the Operations Center.
3. FEMO will make the decision to staff the Operations Center console.
4. Ensure staffing for administration buildings to include maintaining service such as power, janitorial, water and supplies for the duration of the storm.
5. Ensure generators are working properly and fueled. Report any generator activations to the Operations Center.
6. The accommodations of employee's for long durations of work will need to be considered. This would include lodging, food and drink.

Fare Collection

1. Restrict all traffic from entering at designated Toll Facilities where the highway has been deemed closed for travel. This would require that all entry lanes be closed.
2. Adjacent Interchanges in the region of closed sections of PTC highway will continue the single lane entry procedure to alert travelers of sections closed for travel.

Level 4 Storm Procedure

3. Closure of PTC exiting lanes will be initiated at designated Interchanges due to Penn DOT road closures that intersect with the PTC highway.
4. Will notify the Operations Center of any changing conditions and request Traffic Control assistance from Maintenance and PSP.
5. Will deploy Interchange Information Signs at end of ramp. Maintenance will assist when staff is available.
6. Will monitor and report any generator uses and fuel levels at the interchanges to Operations Center.
7. Establish Incident Command, if needed.

Toll Waiving

1. As conditions warrant, implement toll waiving as per PTC procedure. This will include Electronic Toll Collection (ETC) procedures.
2. Requests for state emergency response or utility travel toll waiving or consolidated billing purposes will go through PEMA, Operations Center and Fare Collection for approval.

Communications & Public Affairs

Prepare press release for travel conditions and for potential bans and restrictions coordinated with Penn DOT Press Office. The following procedures may be initiated (***include a time of activation***) in conjunction with Operations Center for any media releases. Any of the following restrictions can be approved for activation and enforced through Title 67, 601.15A, Page 9, Rules and Regulations.

- a. All Class 9's oversized vehicles are banned from travel.
 - b. Abandoned vehicles will be towed immediately.
 - c. Trucks and trailers are required to travel in right lane only in mountainous areas.
 - d. Coordinate with Operations Center to create an advisory that we may do a ban on commercial vehicles that are doubles, any empty trailer, and personal vehicles towing trailers in preparation for move to Level 3.
 - e. Any Speed reductions.
2. Ensure adequate staffing of the Customer Service Center

Engineering

1. Engineering will be on call as needed.

Appendix H

Application Rates & Spreader Settings

PTC's Application Rates Guideline			
Scenario	Surface Temp	Application Rate (#'s / Lane Mile)	Pre-Wet Agent
1	30° & Up	250 #'s	NaCl
2	20° to 29°	300 #'s	NaCl
3	19° & Below	350 #'s	CaCl
NOTE:	Anti-Skid can be used when snow pack or icing conditions are encountered or when the temperature falls below 0° Farenheit. Mix Ratio should be 50 / 50 and the application rates should be between 350 #'s and 700 #'s per Lane Mile		

PTC's Calibration Requirements for All Trucks									
Spreader Settings and Widths									
Setting #	1	2	3	4	5	6	7	8	9
Spread Width	1 Ft	2 Ft	3 Ft	4 Ft	5 Ft	6 Ft	7 Ft	8 Ft	9 Ft
Auger Settings and Application Rates									
Setting #	1	2	3	4	5	6	7	8	9
Application Rate	100 #'s	200 #'s	300 #'s	400 #'s	500 #'s	550 #'s	600 #'s	650 #'s	700 #'s