

Building Services: Snow Removal and Ice Control Plan

**ST. MARY'S COUNTY  
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION**

# **SNOW REMOVAL AND ICE CONTROL OPERATIONAL PLAN**



**DIVISION OF BUILDING SERVICES  
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**Board of County Commissioners for St. Mary's County**

## Building Services: Snow Removal and Ice Control Plan

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## Building Services: Snow Removal and Ice Control Plan

### **OPERATIONAL OVERVIEW**

The Department of Public Works & Transportations' Building Services and Recreation & Parks' Maintenance Divisions are responsible for Snow and Ice Control at several County-maintained buildings and facilities. There are approximately **98** County-maintained facilities with more than **143,000** square feet of sidewalks and approximately **1,125,000** square feet of associated parking lots. This Division is responsible for developing policies and procedures that will systematically provide services at a level which permit emergency access to buildings, walkways to all buildings and parking lots for prudent pedestrians, and adequate parking access for employees and visitors. Snow removal is considered a **Top Priority** of the Department. This Plan is also intended to address expectations on the level of service that can be expected at various snow depths and to improve understanding between the Department, the public, and the Board of County Commissioners.

### **Snow Season: October 15<sup>th</sup> through April 15<sup>th</sup>, each year.**

As stated above, the Manager of Building Services and Recreation & Parks Maintenance Division are responsible for conducting Snow and Ice Control Operations for County-maintained facilities. The following provides a brief operational overview of the program:

1. Seasonal Preparation. Seasonal preparation is critical to the success of our Snow Removal and Ice Control Program.
2. Readiness Phase. Snow blowers, shovels, ice choppers, wheel barrows, skid loaders, abrasives, and chemicals needed in the initial phase of operations are readied ahead of time. Stockpile levels of materials, ice melt, heating oil and generator fuel supplies, salt, etc. are restored after each storm. Obstacles are marked, if required (i.e. hazard locations such as the sidewalk at the Old Jail to prevent injury from ice sloughing from the slate roof onto pedestrians below). A Blue Bin (Building-side Assistance) Program may be activated at designated facilities.
3. Alert Phase. Depending on the weather forecast and current conditions, the Building Maintenance Facility in Leonardtown and the Recreation & Parks Maintenance Facility in California are placed into operation with minimum staffing. County staff is mobilized and positioned into their assigned service areas (North, West, Central, South) to monitor conditions and treat isolated areas as reported/required. For airport operations, Advisory Circulars recommend that takeoffs should not be attempted when standing water, slush, or wet snow great than ½" in depth covers an appreciable part of the runway. The appropriate Notices to Airmen (NOTAMs) are issued by the FBO at the direction of the DPW&T Director/Airport Manager, as conditions warrant. This may also include a NOTAM indicating that runway or taxiway lights are obscured due to snow depth or windrows from plowing operations.
4. Spreading Abrasives and Chemicals. Apply salt or abrasives to sidewalks, landings, entrances, parking areas, ramps or other reported / known trouble spots. Salt all pavements before/after a snow / ice storm followed by conditions inconsistent with natural melting. Application width studies show that snow melts faster when salt is applied in narrow strips ("windrows"). As such, salt is normally applied in a windrow of 4-5 feet wide down the middle of parking lots and on the "high" side of paved areas.
5. Operations Phase. When snowfall accumulations reach the established threshold, parking lot plowing and/or snow shoveling / blowing operations will commence. The primary purpose of plowing is to open Priority Code 1 Facility areas and make primary entrances and walkways "passable". Remaining Facility Code areas are plowed/ treated in accordance with established priorities in order to restore the facilities to normal operations after a storm ceases. The attached **Snow/Ice Control Logs** are utilized by Building Services and Recreation & Parks maintenance staff to track progress and conditions.
6. Suspended Operations. In the event a storm reaches an intensity that the continuation of operations would prove ineffective or would pose an undue safety risk for County personnel,

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contractors and/or the traveling public (i.e., during blizzard conditions, DOT time limitations etc.), snow and ice control activities should be shut down until weather conditions have improved. The Director of DPW&T or designee is responsible for making a closure decision. Crews will be demobilized to the Snow Operations Office or the closest Volunteer Fire Department for food, shelter and rest. Volunteer Rescue Squads (i.e., Lexington Park may also be made available thru the Public Safety Director) Likewise, contractors will be placed on stand-by status at half-time pay rates until remobilized.

STS Transit operations will be evaluated and the decision to discontinue will normally be made in anticipation of shift changes (12 noon and 3 pm) and/or the closure of the Calvert and Charles transit systems. For additional information, see Attachment 6.

7. Contractor Assistance. Additional equipment and personnel from private, or quasi-governmental, contractors may be mobilized to meet our goals during both minor and major storms. Contract labor, rental equipment, structural engineers, operators, roofing contractor(s) etc. are alerted for possible service, if deemed necessary. In addition, the availability and number of Work Release inmates from the Office of the Sheriff is to be verified, especially for shoveling of roofs, sidewalks, and convenience centers.
8. The Maryland Emergency Management Administration (MEMA) also has pre-approved listings for snow removal services, heavy construction equipment, hauling, MBE contractors, shovels / power and excavating equipment that may be utilized, if available.
9. Recovery Phase. Phasing down operations, secondary parking lot / sidewalk /roof clearing, addressing maintenance calls, cleaning and servicing gutters, drains, roof leaks, vehicles and equipment.
10. Post-Storm Assessment Phase. Performing an internal evaluation and assessment of storm related operational decisions.
11. The County recognizes that conditions may be so unusual or unexpected that departure from these general practices may be authorized. The Public Works & Transportation Director may require such action depending on their assessment of the conditions. The closure of public facilities, such as the Courthouse and Libraries will also effect the priority status and response time.

### **SEASONAL PREPARATION**

In the Spring of each year, the Building Services and Recreation & Parks Maintenance Divisions evaluate the adequacy of storage requirements and levels of stock piled de-icing and abrasive material (3 tons of gabbed ice-melt, and the availability of sand from the County Highways stockpile) and adjust same to meet the anticipated needs of the upcoming season. Sources of additional supplies are also identified at this time. In addition, stockpile levels are re-established following each storm event. It is understood that there may be circumstances beyond the County's control that preclude or limit the amount of salt available. For Building Services, the seasonal supply level of bagged ice melt/salt maintained at the Building Maintenance Facility is approximately 3 tons and should never be lower than 2 tons. Approximately 2.5 tons is needed to treat all sidewalks in the Building Services maintenance system. Facilities are also evaluated for the need to add ice cleats along the roofline, even where roof slopes do not exceed a 6:12 ratio.

Letter Agreement Contracts for Snow Removal Services are executed annually by the County Highways Division, usually in the month of September. Contractual arrangements have been made with a number of private contractors at pre-specified rates for additional dump trucks, tractors and graders, as well as front end loaders for snow removal services. The Contractors are mobilized with approval of the Director of Public Works & Transportation/Manager of County Highways when a storm reaches a severity that can no longer be handled by County equipment and personnel alone. The contractors' equipment must be available on a 7-day a week, 24-hour per day basis. Contractors must have all their equipment available for inspection by the County **no later than the second week of** November. The contractors are **required** to attend the annual Winter Maintenance Meeting.

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The availability of obtaining additional services from existing building trade vendors (ie. plumbing, electrical, carpentry, roofing, structural ) are verified via similar Letter Agreement Contracts or addenda contractors to supply labor, materials and/or equipment support when a storm reaches a severity that can no longer be handled by County equipment and personnel alone. Additional support from the County's Heavy Equipment rental contract is usually not reliable in extreme conditions and the rates from building trade vendors are typically lower than private equipment rental agencies. Contractor retainers may be put in place in preparation for seasonal needs.

In October, the Priority Codes and Priority Callout Listings are re-evaluated for accuracy and updated as required. During winter months, two (2) alternating crew shifts may be designated to cover weekend, ice, and/or large storms operations that may be required over several days. Facility maintenance and assessment/inspection responsibilities are assigned to lead mechanics at this time. Maintenance obligations of leased facilities are also evaluated. Roof drains, gutters, and downspouts are inspected and cleaned to ensure roofs will drain properly.

During the month of November, all personnel are trained to ensure that they fully understand how to operate and maintain the snow blowers, tractors, scrapers, spreaders and other equipment assigned to them during Snow and Ice Operations. Each facility is re-visited by staff to ensure they are fully familiar with them and to mark hazards, if any, prior to their being covered by snow. An Annual Snow Coordination Meeting is held with all affected Departments to discuss snow removal responsibilities, communications procedures, safety and the details of the Operational Plan. This also serves as an opportunity for operators and supervisors to discuss the tactics used in the previous year and to make adjustments for the coming season.

### **READINESS PHASE**

1. On, or prior to December 1, salt spreaders are checked by the Recreation & Parks staff and spinners installed on all operable trucks and tractors every Friday afternoon, the day preceding all County holidays, and on any night prior to a predicted storm. All snow blowers and hand tools are also checked. Material and maintenance supply inventories and re-order levels are checked.
2. Staff is trained to operate the equipment / tools they are assigned, and are re-familiarized with their responsibilities (i.e. sidewalks, stairs, parking lots, HVAC equipment, fire lanes, generators, emergency/fire exists, handicap ramps, driveways, etc.) in accordance with the attached Responsibility Matrix prior to December of each year. Employees and operators are made aware of radio / communication procedures, shift schedules and personnel assignments.
3. All staff and equipment operators follow the attached, pre-determined Priority Code Listing for facilities and lots. The priorities may **not** be changed except for reasons of an emergency nature and/or upon authorization by the DPW&T Director or the Manager of Building Services.
4. In-house Priority Callout and Responsibility Matrix lists are updated, key personnel are placed on telephone standby, work / shift schedules are set up and contractors' availability is re-verified.
5. Properties where facilities are located may have a number of obstacles that can cause serious injury or equipment damage (i.e. manhole covers, valves, curb sections, etc.); therefore, lead mechanics perform a "dry run" of their assigned areas to familiarize themselves with it prior to the winter season, to identify and mark potential hazards, to help prevent possible roof collapses and reduce snow damage to structures. Snow markers are checked at the Airport to ensure pavement edges, lighting and other possible obstructions to snow removal are adequately identified.
6. Petty Cash account is re-established at \$500 for partial distribution to maintenance foremen to cover the anticipated cost of meals. Receipts will be turned in Building Services Manager and balances reconciled at the end of each storm event. The established Maximum Meal Allowance and Reimbursement levels shall be adhered to.

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### ***ALERT PHASE***

Weather Forecasting. A key element in implementing an efficient Snow and Ice Control Program is receiving and acting on timely weather information. Accurate weather forecasting is imperative in deciding which of the various operational procedures will be initiated. It is recognized that forecasts will occasionally be in error and operation plans may change. The County is informed of impending weather conditions by the National Weather Service and through coordination with the Emergency Management Agency.

- Analysis of this data and other factors by the Director of Public Works & Transportation/County Highways Manager, and Manager of Building Services results in a decision of when to become operational. This planning process is made considerably more difficult due to the variable weather conditions encountered during each storm and whether a winter weather advisory, winter storm, winter storm watch, winter storm warning or blizzard warning etc. is in effect.
- Available lead time, storm intensity, rate and type (wet or powdery) of accumulation, moisture content, air/ pavement temperatures, time of day, traffic and pedestrian volumes (peak or off-peak), wind direction and velocity, storm duration, geographical distribution of snow/ice, and most importantly the availability of equipment and rested personnel are all factors that interact to create a unique aspect for each storm.

Condition Alerts. Similar to Metcom, the following alert conditions are set by the Building Services Manager.

**Condition 1.** Approximately 36 hours before effects of storm are predicted to reach St. Mary's County;

**Condition 2.** When the storm is anticipated within 12-18 hours; and

**Condition 3.** When the arrival of the storm is imminent. All preventive measures should have been taken. Required personnel stand by in pre-selected locations. All other personnel are relieved of duties.

Mobilization. The five (5) Lead Mechanics have the responsibility for conducting the Snow and Ice Control Operational Plan in their respective assigned areas under the direction of the Manager of Building Services. All major decisions and changes to the Plan **must** be approved by the Director of Public Works & Transportation / Manager of Building Services.

- The Manager of Building Services will notify the Lead Mechanics to become operational, who will in turn notify the necessary personnel to report in accordance with the established Priority Callout List. This basic "Chain System" is especially effective during off-duty mobilization.
- The decision to open the Building Maintenance Facility in Leonardtown is made by the Director of Public Works & Transportation for any storm of significance. Otherwise, the guidelines in this Plan will suffice. The Building Services Manager will contact the Recreation & Parks Maintenance Supervisor who will mobilize to man the Parks Maintenance Facility in Leonardtown. A Lead Mechanic/Shift Supervisor will be designated to direct assigned Recreation & Parks staff when their assistance is determined to be needed for Building Services related functions.

### ***PRIORITIES***

**Priority Code 1.** Facilities include those facilities that correlate directly to emergency and 24-hour operations. Priority Code 1 Facilities, as listed on the Attachment, are the first to be cleared and are to be kept clear. Main entrances, steps and sidewalks leading to the adjacent parking lots are cleared followed by the remaining secondary entrances, landings and steps. There are currently eleven (**11**) Priority Code 1 Facilities in the Building Services maintenance system including the Maryland State

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Police Medevac / Medstar helicopter pads and hover taxi route which are also Priority Code 1 for the Department of Recreation and Parks. **Priority Code 1 buildings and parking areas should be ready for opening and initial use within 2-3 hours. Priority Code 1 areas can typically be fully treated and plowed by the Building Services and Recreation & Parks crews within 4-5 hours.** Additional time may be required to accommodate shift changes within the respective facility and to address minor areas previously inaccessible.

**Priority Code 2.** Facilities include those higher priority facilities that are directly responsible for the continuance of daily government operations. There are currently fourteen (14) Priority Code 2 Facilities in the Building Services maintenance system. **Priority Code 2 buildings and parking areas should be ready for opening and initial use within 2-5 hours, with the associated parking facilities requiring an additional 4-5 hours to be fully available. Under conditions warranting contractor support, the Priority Codes 2 and 3 parking lots can be initially plowed within 6 to 8 hours. Otherwise, it could take about 16 to 20 hours following the end of a 4" snowfall to completely plow/clear and/or re-treat every County maintained facility.**

**Priority Codes 3 and 4.** Facilities include those facilities that perform supplemental government operations. Priority Codes 3 & 4 facilities are addressed once the first two priorities have been satisfactorily completed. There are currently fourteen (14) Priority Code 3 and 4 Facilities in the Building Services maintenance system. In the event of an emergency declaration or required Civil Air Patrol activation, the Priority Code for the Terminal Building will elevate to a Priority 2A as it is a designated potential mass care facility location. **Priority Code 3 and 4 buildings should be ready for opening and initial use within 4-6 hours. Under conditions warranting contractor support, the Priority Codes 3 and 4 areas can be initially plowed within 8 to 12 hours. Otherwise, it takes about 16 to 20 hours following the end of a 4" snowfall to plow/clear and/or re-treat every County maintained facility.** Priority Code 4 facilities include the St. Mary's County Regional Airport, Capt. Walter F. Duke Terminal Airport parking lot, ramp areas and terminal building sidewalks.

Due to weather-related conditions such as piled snow, melting and re-freezing, "bare pavement" should not be expected in parking areas, and motorists and pedestrians should dress and act accordingly.

Main entrances, steps and Snow Walks leading to the adjacent parking lots are cleared followed by the remaining secondary entrances and sidewalks, landings, and steps. However, in cases of severe storms, facility closures and program cancellation priorities may have to be shifted to concentrate on only the Priority Code 1 and 2 Facilities, with emphasis on emergency and 24-hour service providers.

Certain conditions may exist, which coupled with forecasted weather conditions, may result in modifications of normal priorities. Decisions regarding delays and/or closures at libraries, day-care services, schools, recreation and parks programs, and County government facilities will affect both priority and response times.

The Building Services Division will make every effort to address employee and visitor call-ins and requests as soon as priorities allow. Stockpiles of sand may be staged in key locations via the Blue Bin (Building-side Assistance) Program, depending on the severity of the storm.

### COMMUNICATION

A Severe Weather Alert and Action Plan Policy was approved on August 29, 2000 that details the procedures and responsibilities of the Emergency Management / Public Safety Director to facilitate the exchange of critical information between essential departments/agencies, administrators, and other policy makers responsible for deciding government/schools openings and closings. Refer to the Public Safety Timeline for Severe Weather Notification. SMECO power outage information and maps are also available at <http://outage.smeco.coop/>.

Public Information. Notifications and inclement weather announcements will be made by the Public Information Officer (PIO) in accordance with the approved Media and Employee Alert Plans. Channel 12, the County Government's channel, will also air updates of changing roadway conditions within the County and County Employee operational status. Building Services recommendation staff to utilize

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primary entrances is announced at this time. Airport NOTAMS are issued by the Airport Manager or FBO, as may be required. *The citizen **Emergency Notification Number (ENN) 301-475-4200 ext 4911 was established to provide citizens with inclement weather, hurricane, tornado, and other emergency information.***

NOTAMS. In general, airport users should be promptly notified, and a NOTAM issued immediately, advising of unusual airport conditions. The Federal Aviation Administration (FAA) advisory circular typical format and abbreviations for use in reporting winter conditions / closures on aircraft movement areas are utilized for this purpose. NOTAMS are filed with the FAA and coordinated by the Airport Manager and the Fixed Based Operator, Mr. Bildman, at (301) 904-5035 or (301) 373-2101.

On-line EGOV. For information about our snow removal operations during a snowstorm, call the Division of County Highways at (301) 863-8401, or visit our web site at <http://www.co.saint-marys.md.us> or, e-mail us at [george\\_erichsen@co.saint-marys.md.us](mailto:george_erichsen@co.saint-marys.md.us). The NOAA National Weather Service Office also provides information at <http://www.crh.noaa.gov/unr/edusafe/wwaw/>.

Internal Coordination. The Building Services Manager will contact the Recreation & Parks Department to implement this Plan. County vehicles, which are equipped with two-way radios; and maintenance mechanics who are equipped with pagers and cellular phones, to ensure constant communication is maintained during all phases of operation. An After Hours Call-Out/Emergency Policy for County Facilities was established on January 19, 2004 for reporting and responding to emergency and non-emergency maintenance requests after normal business hours. In addition, equipment operators **must** report any vehicle conditions that may affect safety or present a mechanical problem after a trip to ensure the proper level of maintenance is performed prior to the next shift. *The **Employee Notification Line (ENL) 301-475-4200 ext 1344 was established to provide employees with inclement weather delay and closing information.***

### **OPERATIONS PHASE**

Staffing. The Building Maintenance Facility **will** be open on a twenty-four (24) hour basis during the storm. The necessary overtime and shift work for staff will be scheduled by the Manager for the removal of snow/ice by physical (ie. shovels and wheel barrows) or mechanical (ie. snow blowers, roof rakes) means. Additional administrative staff to answer telephones, work release inmates from the Office of the Sheriff, Recreation and Parks Department personnel may all be called to assist in snow removal operations. *Cold Conditions for Outside Workers* (Table 1) will be utilized to ensure the safety of staff. **The County has sixteen (16) personnel in the Building Services Division and eleven (11) operators/laborers in the Recreation & Parks Department to assist in the implementation of this Plan.**

Level I Operations. As soon as the snow begins to accumulate, staff and equipment is dispatched to salt the Priority Code 1 Facilities (see attached listing). Emergency Management Agencies and Fire and Rescue Operational facilities are also assisted with salt/sand treatment applications by the County Highways Division at this time. **Availability: 15 mechanics/custodial specialist and 1 manager with 5 snow blowers and hand tools-such as scrapers and shovels (Building Services). 10 operators/laborers and 1 supervisor with 5 trucks/plows, 3 tractors/blades, 3 salt spreaders, 1 sit-in snow blower (Wicomico Golf Course), and various hand tools (Recreation & Parks).**

Level II Operations. During this phase, all vehicles are requested to avoid parking in parking lots until clearing operations are completed. When snow accumulates approximately two (2) inches in depth in these areas, plowing operations will normally be initiated. Level II Operations often occur following the issuance of official winter weather advisory. **Availability: 15 mechanics/custodial specialist and 1 manager with 6 snow blowers and hand tools-such as scrapers and shovels (Building Services). 10 operators/laborers and 1 supervisor with 5 trucks/plows, 3 tractors/blades, 3 salt spreaders, 1 sit-in snow blower (Wicomico Golf Course), and various hand tools (Recreation & Parks).** Limited contractor support (i.e., skid loaders and backhoes) may be required to assist when Highway crews are not available.

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**Level III Operations.** If snowfall accumulation continues and is anticipated to exceed a depth of at least four (4) inches contractor support could be authorized. Level III Operations often occur following the issuance of an official Winter Storm Watch or Warning. Rate and accumulation of snowfall, moisture content, temperature, time of day, wind direction and velocity, storm duration, and availability of rested personnel may require the County Highways Division to perform some operations with varying amounts of contractor support, but not until County maintained roadways have been completed. **Availability: 15 mechanics/custodial specialist and manager with 6 snow blowers and hand tools-such as scrapers and shovels (Building Services). 10 operators/laborers and 1 supervisor with 5 trucks/plows, 3 tractors/blades, 3 salt spreaders, 1 sit-in snow blower, and various hand tools (Recreation & Parks). Additional availability: 53 operators (15 County Highways) and 53 pieces of equipment (15 County Highways).**

**Minor Storms.** An ice or snow storm of **four (4) inches or less** (fallen or is forecasted) on the paved surfaces is considered a Minor Storm. A storm of a minor nature is usually handled solely by Department personnel and equipment of the Building Services and Recreation & Parks Maintenance Divisions under Level I and II Operations.

- For a **1 - 4” snowfall**:
  - If less than 2”, Priority Code 1 Facilities can be re-treated / cleared and plowed within **4-5 hours** after the storm ends and Priority Codes 2 and 3 within **12 hours**.
  - If greater than 2”, Priority Code 1 Facilities can be re-plowed/treated in **4-5 hours**. After Priority Code 1 Facilities are completed (i.e., lots, sidewalks, and at least one ADA accessible route made “passable”), Priority Code 2 and 3 facilities should be fully addressed between **8-10 hours** after the storm ends.
  - Recreation & Parks crews are typically mobilized if more than 1” accumulations are realized on parking lots.
- Follow with clearing of secondary entrances/landings/steps, and bus stops as time and resources permit. Priority Code 1 and 2 facilities are primarily located in Leonardtown and crews are subsequently dispatched to the North and South to address the balance of facilities.

**Major Storms.** Snow or ice storms that develop an accumulation of **more than four (4) inches** (fallen or is forecasted) on paved surfaces are considered Major Storms and are handled under Level III Operations. All available staff and/or contractor support should be considered for mobilization at this time. This action will require the Director of Public Works & Transportation / Manager of Building Services approval and will vary based on an assessment of current conditions, weather forecast, and budgetary constraints.

- For a **4-8” snowfall**, Priority Code 1 Facility parking lots and sidewalks are cleared / plowed to pavement up to **10-12 hours** after the end of the storm. Plowing of Priority Codes 2 and 3 Facilities also takes up to **12 hours** to plow once the areas have been made “passable”. Accumulated parking lot windrows may be hauled and disposed of between **24-36 hours** after the storm ends.
- For an **8-12” snowfall**, Priority 1 Facility parking lots and sidewalks are plowed to pavement up to **24 hours** after the end of the storm. Plowing of Priority 2 and 3 Facilities takes up to **24 hours** to plow once the areas have been made “passable”. Accumulated parking lot windrows may be hauled and disposed of up to **48 hours** after the storm ends.
- For a **12-18” snowfall**, Priority Code 1 Facility parking lots and sidewalks are cleared / plowed to pavement up to **24-36 hours** after the end of the storm. Expect narrowed and/or blocked parking isles, stalls, walkways, and secondary entrances due to accumulations. Plowing of Priority Codes 2 and 3 Facilities takes up to **36-48 hours** to

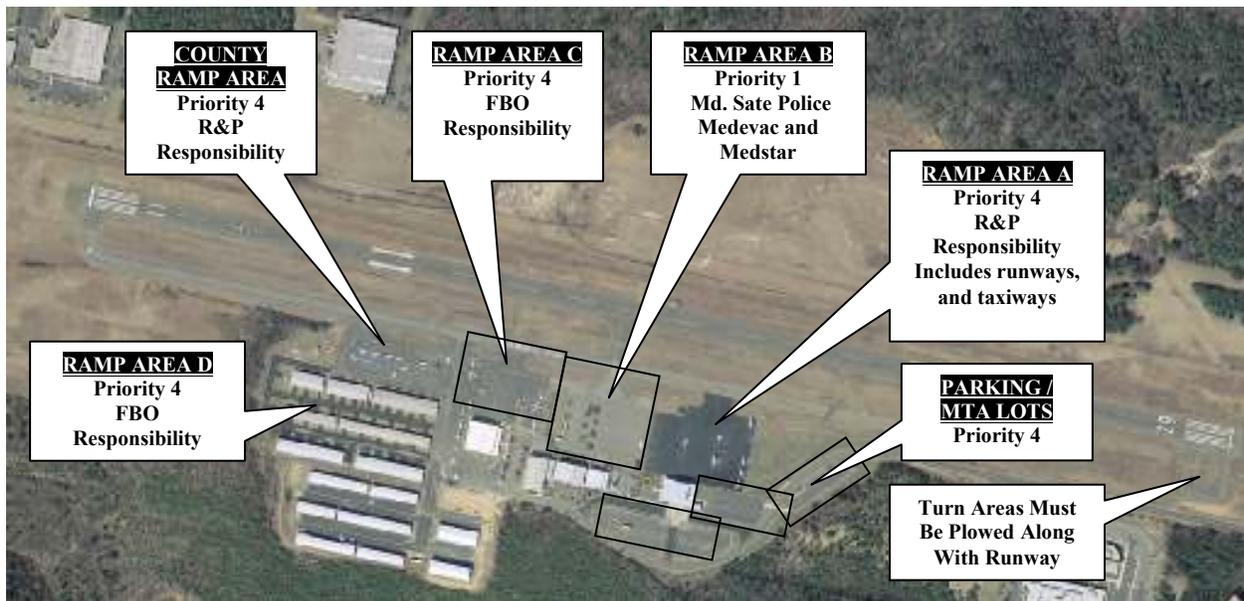
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plow after the storm ends, with Recovery Phase operations completed between **2-4 days** later.

- For a **24" snowfall**, Priority Code 1 Facilities are continuously treated/plowed. The parking lots and sidewalks are cleared /plowed to pavement up to **36-48** hours after the end of the storm. Expect narrowed and/or blocked parking isles, stalls, walkways, and secondary entrances due to accumulations. Snow blowers no longer can be efficiently utilized at these depths. Plowing of Priority Codes 2 and 3 Facilities takes up to **48-60** hours to complete after the storm ends, with Recovery Phase operations completed between **5-7 days** later.

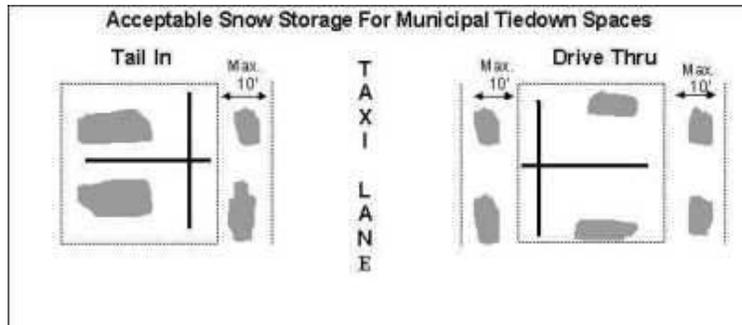
Airport Operations. Clearing of runways, taxiways and their adjacent lighting systems are the responsibility of the County Highways Division. Ramp areas, taxiways between County-maintained tie-downs, navigational aids such as the AWOS, and parking lots are the responsibility of the FBO (during normal hours of operation) and the Department of Recreation & Parks (after hours) as designated on the Airside Snow Plan (**below**). For major storms, conditions may warrant that the terminal parking lot and MTA park and ride facility be cleared by County Highways contractor support. Sidewalks and stairs to the County Hangar and Terminal are the responsibility of the Building Services Division. When the County Highways Division is required to assist and has completed the primary snow removal operations at the Airport, all navigational aids, runway end/edge lighting, etc. must be made visible and free and clear of windrows and drifting snow. In 2010, tubular retro-reflective markers were purchased and placed along the runway and taxiway to help designate pavement edges. Raised utilities and other possible obstructions to snow removal operations should also be clearly marked. This may include removal of snow by non-mechanical means and should be performed within two (2) hours after the runway and taxiway has been plowed. In the event of an emergency declaration or required Civil Air Patrol activation, the Priority Code for the Terminal Building will elevate to a Priority 2A as it is a designated potential mass care facility location. Contact the Patuxent River NAS for stored quantities of urea that will be available for County use on the taxiway and runway.

### AIRSIDE SNOW PLAN



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**Parked Aircraft.** Aircraft owners are responsible for ensuring their planes are properly tied down and protected from wind damage. In addition, they are responsible for removing snow from within their respective leased tie-down area(s). Shown at right are diagrams of acceptable local storage for snow removed from and around aircraft in either "tail-in" or "drive-thru" parking places. Snow that is placed adjacent to the fuselage will remain there until breakup. Snow that is placed adjacent to the taxi lanes (away from the fuselage) will be removed by County personnel during snow removal operations (in priority).



Snow that is placed adjacent to the fuselage will remain there until breakup. Snow that is placed adjacent to the taxi lanes (away from the fuselage) will be removed by County personnel during snow removal operations (in priority).

### **SNOW REMOVAL PROCEDURES**

**Steps, Entranceways and Sidewalks.** Removal of snow from main entrances, landings, fire lanes/exits, and handicap routes/ramps will be high priority and will be cleared before all secondary entrances and walkways. Secondary walkways may be temporarily restricted from use to direct pedestrians to designated Snow Walks. In the event of snow, dump trucks with plows, tractors with loader buckets, snow blowers, skid steer loaders and/or hand tools will be used to clear the walks. Conditions will be monitored to assure icy or slippery areas treated. Every effort will be made to use only a salt product for sidewalks. As a last resort to assure safe walks, a sand product will be used sparingly.

During regular staff hours, Building Services staff is responsible for snow/ice control at each entryway to agency and departmental facilities/buildings, but segregated employee entrances may receive a lower priority. Their responsibility is to maintain the walkways out a distance to where the grounds vehicles can maintain. Steps, large walk-thrus, and large entryways shall be partially shoveled with a path along the railings for initial opening of these areas. At least one (1) handicap route must be fully passable. Sidewalks should be cleared at least one shovel's width within **24** hours after snowfall ceases. Staff is advised that **snow should not be shoveled or moved onto the roadway or into parking areas.**

**Snow Walks.** In order to keep facilities and campuses operational during snow removal, a network of priority sidewalks (Snow Walks) has been selected. The Snow Walks shall be the first walks cleared during a snow event and every attempt shall be made to keep them open while the snow is still falling. Building entrances shall be cleared on a priority basis with the highest priority going to entrances that lead to Snow Walks and STS bus shelters. ADA access was a major factor in determining the Snow Walk access. The County endeavors to provide equal mobility access. Based on necessity, stairs, and routes with stairs have a lower priority than Snow Walk routes. The Snow Walk arrangement is designed to get people either to bus stops, parking lots, lead walks, and main entrances into facilities.

**Parking Lots.** Employees and visitors may be directed to park on one side, or in designated areas during snow removal operations. Fire lanes, delivery, loading/unloading zones, and handicapped parking receive first priority. Once one side of the parking lot has been cleared, they may be requested to move their vehicle to the other side. To help avoid the frustration that occurs when a snowplow covers sidewalks, plowing operations shall be performed to stockpile snow in parking spaces, preferably in a location that does not block storm drain inlets, sidewalks, or ADA ramp / access points.

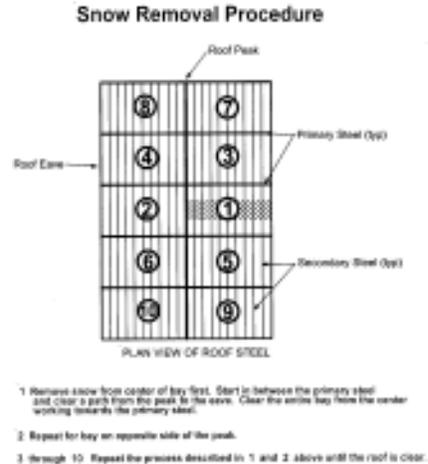
Parking lots will be plowed with the priority of visitor/commuter lots and handicap spaces being first, and employee parking as a secondary priority. It must be understood that lots with vehicles parked in them make it very difficult to do an adequate job in snow removal. Efforts will be first made to open areas with no vehicle traffic in an effort to make room for incoming vehicles. If the surface in the parking lots becomes slippery and determined a safety hazard, sand/salt will be spread in the main driving lanes and lots entrances. During parking lot snow removal, it may become necessary for staff and visitors to park in an alternate lot other than the one they normally park in until all lots are cleared and available. Every reasonable effort will be made to open parking lanes to allow for two-way traffic.

## Building Services: Snow Removal and Ice Control Plan

Snow Hauling / Disposal. As snow banks build up around the parking lots, sidewalks and entrances, the Recreation & Parks maintenance crews may be required to remove necessary snow and haul to a snow dump. This is done to provide adequate parking in lots, assure visibility for pedestrians and vehicles, to make room for more snow, and to control flooding problems when snow and ice melts.

Removal of Snow / Ice on Roofs. The removal of snow accumulations on roofs which will take the weight off the roof, is the best way to prevent a loss. It is important to follow proper snow-removal procedures in order to avoid creating an undesired loading on a roof. As a general rule, depending on the layout of the particular facility, the following procedures should be followed to properly remove snow from roofs.

1. Drifted snow should be removed first, which will generally be on lower roofs. Drifted snow can also occur around rooftop mechanical vents, skylights, parapet walls and around penthouse walls.
2. Snow should be removed from the middle of the bays first. (i.e., if your building has 50 foot bays with the primary steel running from the peak to the eave, the snow should be removed from the center of the bay starting at the peak and working toward the eave.) The greatest deflection will occur at the center of the bay. This should be repeated for all the bays.
3. It is important to remove snow evenly from both sides of the roof so that the *live load* on one side of the roof is not significantly greater than the other side. For peaked roofs, the snow should be removed from the center of a given bay on one side of the roof and then the snow should be removed on the same bay on the other side of the ridge or peak.
4. Do not pile snow from upper roofs onto lower roofs.
5. Take care while removing snow and/or ice accumulation to prevent damage to the roof membrane. Avoid removal within 2 inches of the surface of the roof membrane. The use of plastic snow shovels is recommended.
6. When removing snow from one section of a roof, avoid traveling over and compacting snow on adjacent roof sections.
7. Areas onto which snow will be dumped from a roof should be secured to prevent access.
8. Snow removal personnel should stay spread out to avoid additional localized concentrations of weight.
9. Workers on a roof must use proper personal protective fall-arrest type equipment.
10. In the event any of the collapse warning signs are present, the snow removal operation is to be suspended.



Snow Loads. Following major and repeated snow and ice storm events, where there is significant snow on the roof of buildings **and** there is physical evidence that a roof is sagging or is showing other visible signs of distress, the roof should be assessed by a professional / structural engineer to determine if: (1) snow loads are excessive; (2) there are signs of structural distress; (3) special removal procedures are needed to avoid additional structural problems; or (4) to determine if a structure is overstressed.

Most commercial and office buildings are designed to accommodate a roof snow load associated with 2 feet (24 inches) of dense, compact and/or wet snow. Here are some warning signs that a roof may be giving way under the weight of snow. If there are any of the warning signs below, **the building needs to be evacuated immediately:**

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>√ Cracked or split wood members</li> <li>√ Popping, cracking, and creaking sounds.</li> <li>√ Sagging roof members including steel bar joists, metal decking, wood rafters, wood trusses and plywood sheathing-visually deformed.</li> </ul> | <ul style="list-style-type: none"> <li>√ Bowed utility pipes or conduit attached at ceiling</li> <li>√ Sagging ceiling tiles and/or sprinkler heads pushed down below ceiling tiles.</li> <li>√ Doors and/or windows that pop open or are difficult to open and close.</li> </ul> |
|---|---|

## Building Services: Snow Removal and Ice Control Plan

The Department of Public Safety, Department of Public Works and Transportation and Land Use and Growth Management work in conjunction to assess all county owned facilities from a structural and operational standpoint. The main goal of this effort is to confirm, with the best possible certainty, that buildings which provide either work space for county employees or are utilized to provide services to citizens are safe for re-entry and use.

Building Services staff has to assess all County-maintained facilities for accumulating and changing conditions. Should snow accumulations approach or exceed a 2' depth on the Drill Hall or 12-14" on the Chancellors Run Activities Center, the snow must be manually shoveled. At some facilities, such as the old Sheriff's Department and new Emergency Operations Center, the entrances are susceptible to overhanging and falling snow from rooftop melting and must be monitored for removal. The Old Jail represents another situation where melted runoff from the slate roof onto the sidewalk below and must be roped off from pedestrian use for safety reasons. The corresponding rooftop and on-ground equipment must also be maintained in a clear and operable condition.

### **Snow Load Based on Accumulation Depth \***

<b>Snow Depth on Roof (ft.)</b>	<b>Dry Snow (lbs./ft.<sup>2</sup>)</b>	<b>In Between Snow (lbs./ft.<sup>2</sup>)</b>	<b>Wet Snow (lbs./ft.<sup>2</sup>)</b>
1	3	12	21
2	6.5	24	42
3	9.5	36	62
4	12.5	48	83
5	15.5	60	104

\*Source: *Winter Snow Loads*. Curt Gooch, Sr. Cornell University. 2002

Roofs, Gutter, Downspouts and Maintenance Equipment. The following items should be addressed before and during a major snow or rain event:

1. Keep roof drains clear of ice and accumulated debris. Inspect roof immediately after major winter storms where precipitation more than 8 inches of snow fall and/or 2 inches of rain fall has occurred in a 24 hour period.
2. Keep gutters and downspouts clear so they will flow freely.
3. Keep the bottom of downspouts clear of snow and ice so the water has a place to drain.
4. Truncate downspouts 2 feet above grade to ensure they flow freely and do not freeze at the bottom.
5. Ensure that snow is not plowed or shoveled against downspouts, which will prevent proper drainage.
6. Remove snow accumulations from the roof when approximately 50% of design strength is reached.
7. Do not install equipment (air handlers, air conditioners, transformers, etc.) or storage below eaves where the equipment could be impacted by snow or ice sliding off the roof.
8. If there is existing equipment located below eaves, a structurally sound roof should be installed over the equipment to help prevent damage to the equipment from falling snow or ice.

Meal Allowance. The attached Office Procedure addresses meal allowance reimbursement during Call-Out and Emergency Conditions.

Overtime. When a local emergency is declared, the use of special payroll codes will be authorized by the Finance Department. The following Hour Type Codes will be utilized:

## Building Services: Snow Removal and Ice Control Plan

- 91** - Emergency Regular 100%
- 92** - Emergency Overtime 0.5X
- 93** - Emergency Overtime 100%
- 94** - Emergency Overtime 150%
- 95** - Emergency Comp Time 1.0X
- 96** - Emergency Comp Time CL BK 1.5X
- 97** - Emergency Unscheduled Time 2.0X

Zero Tolerance. When hostility or intimidation from the general public is encountered by our employees and / or contractors during snow removal operations, the service will be immediately discontinued. No additional snow removal or ice control operations will be authorized by the Director of Public Works & Transportation on the subject facility, parking areas or grounds without a law enforcement escort from the Office of the Sheriff.

### **COLD CONDITIONS GUIDELINES FOR OUTSIDE WORKERS**

During very cold temperatures, the most serious concern is the risk of hypothermia or dangerous over-cooling of the body. Another serious effect of cold exposure is frostbite or freezing of the exposed extremities such as fingers, toes, nose, and ear lobes. Hypothermia could be fatal in absence of immediate medical attention.

As such, in 2008, the DPW&T has adopted the guidelines developed by the Saskatchewan Labour Department for working outdoors in cold weather conditions. These guidelines recommend protective clothing and limits on exposure time (**Table 1**). The recommended exposure times are based on the wind chill factor, a scale based on air temperature and wind speed. The work-break schedule applies to any 4-hour period with moderate or heavy activity. The warm-up break periods are of 10 minute duration in a warm location. The schedule assumes that “normal breaks” are taken once every 2 hours. At the end of a 4-hour period, an extended break (e.g., lunch break) in a warm location is recommended.

**TABLE 1  
Cold Conditions Guidelines for Outside Workers**

Air Temperature Sunny Sky	No Noticeable Wind		5-mph Wind		10-mph Wind		15-mph Wind		20-mph Wind	
	° F (approx.)	Max. Work Period	No. of Breaks*	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period
-15° to -19°	(Normal Breaks) 1		(Normal Breaks) 1		75 min.	2	55 min.	3	40 min.	4
-20° to -24°	(Normal Breaks) 1		75 min.	2	55 min.	3	40 min.	4	30 min.	5
-25° to -29°	75 min.	2	55 min.	3	40 min.	4	30 min.	5	Non-Emergency Work Should Cease	
-30° to -34°	55 min.	3	40 min.	4	30 min.	5	Non-Emergency Work Should Cease			
-35° to -39°	40 min.	4	30 min.	5	Non-Emergency Work Should Cease					
-40° to -44°	30 min.	5	Non-Emergency Work Should Cease							
-45 & Below	Non-Emergency Work Should Cease				Non-Emergency Work Should Cease		Non-Emergency Work Should Cease		Non-Emergency Work Should Cease	

## Building Services: Snow Removal and Ice Control Plan

### ***SNOW & ICE SPOTTERS PROGRAM***

There is no substitute for visual observation of weather conditions and conditions of the pavement surface. The Office of the Sheriff, EOC and our trained maintenance personnel are best prepared to judge the severity of conditions and to recommend corrective action. Building Services staff patrols their designated service areas and must closely monitor any changes in weather/pavement conditions and perform evaluations of treatment effectiveness. This includes monitoring of conditions around HVAC equipment, sprinkler connections, generators, oil tanks, etc.

Real-time knowledge of the pavement surface state is necessary for making an informed decision on treatment; the most important of which is pavement temperature, as it will determine if it will form an ice-melting interface at the pavement surface. In addition, changing conditions resulting in localized freezing or "black ice" conditions can be better addressed when identified in the field and reported to the Building Maintenance Facility.

We rely on citizens and employees, as well and encourage their participation in this Program, by reporting changing conditions to the Department. Questions regarding snow removal procedures should be directed to the County Building Services Division Snow Operations Office at **(301) 475-4200 x 1150**.

### ***SPREADING OF ABRASIVES AND CHEMICALS***

Mixtures. An understanding of what chemicals and other materials are available for snow and ice control, and the policies regarding their usage is critical for proper application. The Division currently utilizes various combinations of concrete sand, salt, ice-melt, and calcium chloride, depending on the prevailing and anticipated conditions. The sand and calcium chloride mixture is prepared and stockpiled at the Department of Public Works and Transportation facility in California, Maryland. Chemicals should not be used on the runway if it creates the formation of slush. Note: The use of salt on most roofs will void most manufacturer's warranties.

Application Rates. The application rate and spreader calibration is established by the Recreation & Parks Maintenance Supervisor for varying conditions. No two storms are alike, so no single set of standards will give the proper spreading rate for all storm conditions. Experience shows that it is most effective to spread salt/ice-melt at a low (2) or medium (6) setting, with a high setting (10) in areas requiring a wider application such as at intersections, parking lots, and/or where ice conditions are present.

Timing. Timing of an initial salt application for snow storm events is critical. It should be made as soon as possible after sufficient precipitation has fallen to prevent material loss, but before snow pack or ice bonds to the pavement. Salt is applied as soon as the snow or ice begins to accumulate on the pavement. Generally, only enough is applied to permit plows to remove the snow or to melt glare ice. Sand and other abrasives may be used to improve traction on snow and ice covered pavements, especially when it is too cold (15-25° F) for salt and other chemical deicing to work. It is important not to plow off the salt or other treatment until it has had a chance to melt the snow and/or ice. Applying salt during blowing snow and cold temperatures is not desirable, as it will cause drifting snow to stick to the pavement when it might otherwise blow off the surface.

- When the pavement is cold (i.e. below 15° F) and new or blowing snow is light and cold, traffic and wind (equal or greater than 15 mph) may be sufficient to prevent accumulation and compaction. In this case, application of any chemical may create rather than cure a problem.
- If the pavement and snow are cold and dry, and it is apparent that snow in tire tracks is not adhering to the pavement, plowing is all that will be necessary to remove accumulation.
- If the weather forecast is for rising temperatures, however, chemical(s) should be applied when the temperature rises high enough for the chemical to act rapidly, usually above 25° F. Application can be made at temperatures as low as 15° F if rapid rise in temperature is forecast. Application of salt onto dry pavement is not recommended.

## Building Services: Snow Removal and Ice Control Plan

**Abrasive Size.** Studies have shown that a sand or other abrasive material larger than the #50 sieve is most effective at improving vehicle traction on snow and ice-covered pavements. In addition, the use of particles smaller than 3/8" has been proven to minimize the potential for windshield damage. The concrete sand (# 100 abrasive) used by our crews is smaller than the #50 sieve; and is, therefore, primarily utilized for deicing rather than for traction. For airport uses, fine sands (passing the #30 sieve) work better on warmer ice (>20° F) and coarse sands show better performance on colder ice (<15° F).

### **CONTRACT SERVICES**

- Given the current resource levels, the flexibility needed to deal with storms of different intensities is obtained by contracting with the private sector for additional pieces of mechanical snow removal/salt spreading equipment, operators for the equipment and laborers to perform physical snow removal operations. Competition annually for these scarce resources can be keen with other agencies (i.e. Board of Education and State Highway Administration) vying for these services at the same time.
- When snowfall is forecasted to continue to significant accumulation, Contractor support may be authorized at the discretion of the Director of Public Works & Transportation and Manager of Building Services based on their assessment of current conditions, weather forecast, and budgetary constraints. Currently there are no contractor retainer fees or payment for stand-by time authorized.
- In the event a storm reaches an intensity that the continuation of operations would prove ineffective or would pose an undue safety risk for County personnel, contractors and/or the public (ie. during blizzard conditions, DOT time limitations etc.), snow and ice control activities should be shut down until weather conditions have improved.
- Contractor support for manpower, plowing equipment, operator assistance, material supply or professional expertise is authorized whenever a storm reaches a severity that can no longer be handled by County equipment and personnel alone. Contractor support may also be utilized whenever conventional or routine operations become ineffective because of depth of snow or low temperatures.
- The County reserves the right to order any combination of manpower, small / medium or heavy pieces of contractor equipment and operators to support the snow removal and ice control operations.
- In declared emergency conditions, additional personnel are called in from the Recreation & Parks Department to assist Building Services with hired equipment and to perform other duties as necessary. These employees will report to the Manager of Building Services.

### **RECOVERY PHASE**

As the storm abates and with the completion of clearing, the Department moves into the Recovery Phase. Recovery consists of phasing-down operations by: terminating contractor support; returning employees to regular work schedules; pushing back or removing any piles of snow blocking or remaining at entrances to facilities, downspouts, or storm drains; removing areas of isolated compacted snow or ice within porch, entrance, handicapped entrances, or sidewalks; evaluating the need for any damage repairs; cleaning and servicing vehicles and equipment; replenishing or shifting snow-related supplies; and preparing the needed financial paperwork.

Damage Assessment Teams comprised of LUGM building inspectors perform initial assessments of County-owned / maintained structures based on priority. Rapid Evaluation Safety Assessment Forms (ATC-20 or equivalent) are utilized to evaluate the observed conditions of the structures, whether or not posting is required (i.e., restricted use or unsafe), if further actions are needed and whether the building(s) was is safe and can be inhabited. In more severe cases, facilities will remain closed until the snow/ice load is removed from the roof or until structural repairs can be made.

## Building Services: Snow Removal and Ice Control Plan

It is not just the blizzard that produces a single significant snow fall that causes a roof system to fail. Repeated snow events that do not have time to melt can accumulate and surpass the roof design's live load. Equally important is a snow event followed by rain. The rain will saturate the snow, which will greatly increase the weight of the snow. Roof failures typically occur when a secondary problem arises, such as blocked or frozen roof drains and an imbalance in weight caused by wind blowing snow off one portion of the roof and depositing it on another.

Most of the problems occur with structures that have flat, shed-type or arched roofs. If a roof is sagging or showing other signs of stress, a structural engineer should be contacted, and if the snow needs to be removed, perform with in-house staff, supervised work release inmates, or through assistance from a licensed contractor(s).

### Category B Emergency Protective Measures

Snow Assistance means assistance for all eligible activities under Category B, emergency protective measures related to a snowstorm, including snow removal, de-icing, salting, snow dumps, and sanding of roads and other eligible facilities, as well as search and rescue, sheltering, and other emergency protective measures. Snow removal assistance is eligible for a **48 hour period** to address the most critical emergency needs. The 48 hour period may begin at a time other than when the storm actually begins. The jurisdiction or state can designate their most expensive 24 hour period. (FEMA Policy 9523.1, Snow Assistance Policy).

- The snowfall must be of record or near record amount using National Oceanic and Atmospheric Administration (NOAA) data,
- The response is beyond State and local government capabilities,
- The action is necessary to save lives, protect public health and safety, and protect improved property.
- FEMA's current Schedule of Equipment Rates and Cost Codes shall be used for County equipment expenses. *NOTE: Equipment reimbursement rates cover the cost of fuel and maintenance.*

Emergency Protective Measures are those undertaken by a community before, during, and following a disaster that are necessary to do one of the following:

- Eliminate or reduce an immediate threat to life, public health or safety,
- Eliminate or reduce an immediate threat of significant damage to improved public or private property through cost-effective measures.

In addition, the use of County-owned equipment, personnel overtime pay, materials used (sand, salt, plow blades, fuel), contractor support, the use of inmate labor etc. is also reimbursable at FEMA approved rates. Tracking forms shall be utilized in the preparation of an Initial Damage Assessment (IDA) submission to the Department of Public Safety (**Attachment 5**).

## Building Services: Snow Removal and Ice Control Plan

### **WINTER WEATHER TERMINOLOGY**

The U.S. Department of Commerce National Oceanic and Atmospheric Administration National Weather Service uses the following definitions and criteria to describe hazardous winter weather:

**Winter Storm Watch-** Heavy snow or a blizzard is possible, but the exact timing, location, or occurrence of the storm is still uncertain. A watch means to get prepared for a storm.

**Winter Storm Warning-** You should be ready for a storm by the time a warning is issued. A life-threatening storm is likely with:

- Snow 6 inches or more in 12 hours or less; or 8 inches or more in 24 hours,
- Heavy ice accumulations that cause extremely dangerous conditions and significant damage,
- Strong winds, and/or
- Wind chills indices  $-40^{\circ}\text{F}$  or colder.

**Blizzard Warning-** You should use caution when an advisory is issued. A storm with winds 35 mph or greater AND significant snow or blowing snow with visibilities less than 1/4 mile.

**Winter Weather Advisory-** Weather conditions that cause inconvenience, but are not life-threatening, such as:

- 3 to 5 inches of snow ,
- Blowing snow causing visibilities of 1/2 mile or less,
- Light freezing precipitation that does not coat all exposed surfaces, and/or
- Wind chills indices between  $-25^{\circ}$  and  $-40^{\circ}\text{F}$ ,
- Ground blizzard conditions: Blowing snow reducing visibility near the ground, but no snow is falling.

**High Wind Warning-** Winds 40 mph or greater; or wind gusts 58 mph or greater.

**Wind Advisory -** Winds 30 mph or greater; or wind gusts 45 mph or greater.

## Building Services: Snow Removal and Ice Control Plan

### **POST-STORM ASSESSMENT PHASE**

Lessons can be learned from both successes and failures of any winter maintenance operation. Improvements in operation, and even equipment, can be identified and implemented through a post-storm assessment of the practices and treatments used. *After the February 2010 severe weather events, it was agreed that since the roof strength of all County facilities is not known, that a structural engineer should be obtained to determine the live load (maximum beam deflection and corresponding depth for both snow and ice) that the roofs can support for priority 1 emergency response and public safety related facilities.* It is important that all levels of maintenance personnel, from the Director and Building Services Manager to the maintenance and Recreation & Parks staff, be involved in the evaluation process. This process includes the evaluation of treatment effectiveness, assessment of operational decision timing, and an examination of costs. Recommendations for improved safety such as the installation of roof guards, shields, or cleats on roofs over public walkway areas, or effectiveness of existing measures / practices are reported at this time. In the event of significant storm events, snow removal costs are accounted for and budget amendments are prepared and processed through the Board of County Commissioners to restore operational accounts (i.e., Overtime, contract services, supplies, and materials etc.) to their pre-storm funding levels. In the event of a declared emergency, special project accounts may be established to preclude the need for the processing of separate budget amendments.

### **PROPERTY DAMAGE AND REPAIR**

Although significant caution and safety efforts are made to avoid damage to public buildings / grounds or private property during snow and ice removal operations, property damage may inevitably occur. In cases where turf damage has resulted from the plow jumping the curb, snow shovels or blowers, restoration will be done as soon as weather conditions allow. Under only extreme circumstances will the damage to turf from salt application be restored or treated.

If contracted services are utilized, the contractor is contractually responsible for all damage to life and property during their snow removal activities/operations. County employees are advised to follow the accident/incident reporting procedures in the Safety and Health Program and to contact the County's Risk Manager when appropriate.

### **EMERGENCIES**

Individuals are requested to call the Police and Fire Departments at 911 in life-threatening emergencies. An emergency problem is rarely solved by an out-of-sequence plowing; police and emergency vehicles are equipped to reach an emergency call quicker than a street can be plowed.

The Adult Detention Center, Sheriff, Advanced Life Support, Maryland State Police Medevac, and 911 Communications Center will contact the County Building Services Division if emergency access or vehicle needs assistance to maneuver on a snow or ice-covered parking lots. In the event that a bonafide police, fire or medical emergency requires snow removal assistance, such operations shall be given the highest priority as a part of **Operation Snowflake**. Such operations shall be called to the Building Services Division Snow Operations Office by the designated facility's contact person(s) and authorized by the Manager of Building Services.

In the event of a roof collapse, contact 911 (Public Safety) and Risk Management. Initiate emergency actions, such as removing mobile equipment, covering equipment and storage with plastic, backing-up computer systems, etc. Implement contingency plans for relocation of staff and their respective operations.

Bonafide emergencies arising during the snowstorm, or questions regarding the plowing procedures, should be directed to the County Building Services Division Snow Operations Office at (301) 475-4200.

## Building Services: Snow Removal and Ice Control Plan

### **MUTUAL AID**

Mutual Aid is expected to be very limited during winter storms. Agencies are free to request mutual aid from their neighbors, but the expectation of it being provided would be low. Snow response agencies will normally be simultaneously engaged in snow operations and are usually not capable of providing mutual aid. Liability issues concerning potential damage from operating snow removal equipment outside one's home jurisdiction also provides a formidable challenge to offering mutual aid. If mutual aid is possible, it would be several days into the storm, or during a particular storm that was not region-wide. If provided, it would most likely be in the form of supplies and materials, rather than equipment and crews. Equipment and crews are most often mobilized across jurisdictional boundaries during a declared State of Emergency.

### **FEDERAL & STATE EMERGENCY MANAGEMENT AGENCIES**

The federal government may reimburse state and local agencies for expenditures incurred during extraordinary events declared by the President / Governor as major disasters. The majority of effort expended, prior to the declaration of a disaster area, may also be considered emergency work.

From: Disaster Public Assistance Officer, MD Emergency Management Agency.

As a result of the Severe Snow / Blizzard Conditions experienced in the state (during the period of \_\_\_\_\_), it may be requested that jurisdictions track their expenses. The initial cost estimates may be entered directly onto the Initial Damage Assessment Form and submitted to Public Safety. It is requested that negative responses be sent either by noting zeroes on the Initial Damage Assessment Form or by email noting that no expenses were sustained for the jurisdiction. All costs of labor for road crews, plowing and supplies are eligible. If your jurisdiction requires a driver and a helper per truck for safety reasons, please have that policy in writing. Please bear in mind that the statewide threshold of \$6.8 million in expenses be met and each county must then meet their threshold AND have a record or near record snowfall for their jurisdiction in accordance with established Public Assistance Thresholds.

### **DISCLAIMER**

The County recognizes that conditions may be so unusual or unexpected that departure from these general practices may be authorized. The Public Works & Transportation Director / Manager of Building Services may require such action depending on their assessment of the conditions. *Any significant actions of this nature will be coordinated with the County Administrator.*

Building Services: Snow Removal and Ice Control Plan

**ATTACHMENT 1: RESPONSIBILITY MATRIX**

<u>SITE / LOTS</u>	<u>PRIORITY CODE</u>	<u>SIDEWALKS / STEPS</u>	<u>DRIVEWAYS / PARKING</u>
Building #46 Adult Detention Center	1	BS / RP	DPWT / RP
Building #95 Patuxent Building	1	BS / RP	DPWT / RP
Building #95 Old Carver Elem-Sheriff	1	BS / RP	DPWT / RP
Building #48 Advance Life Support	1	BS / RP	DPWT / RP
Buildings #12, 16 & 29 DPW&T Facilities	1	BS / RP	DPWT / RP
Building #91 Wicomico Building Maint. Facility	1	BS / RP	DPWT / RP
Maryland State Police Medevac / Medstar Helicopter Pads	1	BS / RP	DPWT / RP
Building #02 911 Communications Center	1	BS	DPWT / RP
Building #01 Control Center	1A	BS / RP	DPWT / RP
Building #28 Potomac Building	1A	BS / RP	DPWT / RP
Building #27 Chesapeake Building	1A	BS / RP	DPW / RP
Building #38 Emergency Equipment Shelter	1A	BS / RP	DPW / RP
Building #26 Courthouse/Old Jail	2	BS / RP	DPWT / RP
Building #41 Health Department	2	BS / DPW / RP	HD / RP
Building #59 Carter Building	2	BS / RP	DPWT / RP
Building #62 Mechanicsville Day Care Ctr.	2	RP / BS	RP
Buildings #8, 9 & 63 Walden Center Complex	2	BS / RP	RP
Building #78 Chancellor's Run Act. Center	2	BS / RP	RP
Building # 25 Garvey Senior Center	2A	BS / RP	DPWT / RP

Building Services: Snow Removal and Ice Control Plan

**ATTACHMENT 1: RESPONSIBILITY MATRIX (Cont'd.)**

<u>SITE / LOTS</u>	<u>PRIORITY CODE</u>	<u>SIDEWALKS / STEPS</u>	<u>DRIVEWAYS / PARKING</u>
#6 Northern Senior Center	2A	BS/RP	RP
Building #68 Hollywood Recreation Center	2A	BS / RP	RP
Building #93 3 Oaks Shelter, Lex. Park	2A	BS	DPWT / RP
Building #48 Alcohol Halfway House	2A	BS	DPWT / RP
Building #22 Leonardtown Library	2B	BS	RP
Building #76 Lexington Park Library	2B	BS	RP
Building #65 Charlotte Hall Library	2B	BS	DPWT / RP
Landfill & Convenience Centers	3	DPW	DPWT
#3 Great Mills Swimming Pool	3	BS/RP	RP
R & P Annex (Leonardtown Middle School)	3	RP	RP
Building #60 Margaret Brent Gym	3	BS / RP	RP
Building #57 Leonard Hall Recreation Center	3	BS	DPWT / RP
Building #61 Welcome Center-Sheriff Outpost	3	BS	RP
Building #97 Airport Terminal	3 (2A)	BS	DPWT / RP
Building #32 Tulagi Park & Ride	4	BS / RP	DPWT / RP
Building #67 St. Clement's Island Museum	4	RP	RP
Softball Hall of Fame	4	RP	RP
Commuter Lot at Airport	4	N/A	DPWT / RP
Non-Priority Ramp Areas	4	N/A	RP
#64 Airport Hangar Building	4	BS	RP
Runway and Taxiway	4	N/A	DPWT

**Building Services: Snow Removal and Ice Control Plan**  
**ATTACHMENT 2: PRIORITY CALLOUT LIST**

**BUILDING SERVICES**

Mike Nickerson, Supervisor  
(301) 475-2752 (Home)  
(240) 925-9659 (Cell)

Randy Miedzinski, Building Services Manager  
(301) 373-5520  
(240) 925-9665 (Cell)

Keith Gross  
(301) 884-5689 or (240) 925-9661 (Cell)

Thomas Biscoe  
(301) 862-5249 or (240) 925-9654 (Cell)

Eddie Fuller  
(301) 475-0496 or (240) 925-9663 (Cell)

Ellis Lewis  
925-9660 (Cell)

Donald Goostree  
(301) 475-2642 or (240) 925-9652 (Cell)  
(301) 737-8470 (Pager)

John Quade  
(301) 863-7812 or (240) 925-9658 (Cell)

Vacant to be filled in Nov 2010

Robert Morgan  
(240) 317-5880 or (240) 925-9650 (Cell)

Chip McGolrick  
(301) 373-4484 or (240) 925-9649 (Cell)

Ray Pilger  
(410) 586-8643 or (240) 925-9651 (Cell)

Henry Oliver  
(301) 884-8325 or (240) 925-9648 (Cell)

Lowell Stump  
(301) 934-3324 or (240) 925-9653 (Cell)

Francis Johnson  
(301) 884-2987 or (240) 925-9656

Will Buckmaster  
(443) 295-7758 or (240) 925-9664 (Cell)

Jeff Wathen  
(301) 475-3849 or (240) 925-9652 (Cell)

Ralph Broom  
(240) 298-8005 (Cell)

**RECREATION & PARKS**

David Guyther  
(301) 475-2726 or (240) 538-4943 (Cell)

William Abell  
(301) 373-4691

Mike Beavan  
(301) 884-5076 or (240) 538-4945 (Cell)

Billy Bowles  
(301)769-2375

Al Bailey  
(301) 884-9749 or (240) 298-1007 (Cell)

Roy Copsey  
(301) 884-2528 or (240) 538-4946 (Cell)

Ed Alt  
(301) 994-1159 or (240) 538-4944 (Cell)

James Lacey  
(301) 769-3826

Robert Wathen  
(301) 769-4559

James Oliver  
(301) 769-2053 or (240) 538-4942 Cell)

Jane Weems  
(301) 475-1869

Stacey McCarson  
(301) 866-1644 or (301) 672-1332 Cell)

Phil Rollins  
(301) 475-9689

**BUILDING SERVICES (CON'T)**

Joann Copsey  
(Cell) (301) 934-8676

J.R. Brown  
(301) 475-2753 or (240) 577-0669

Linda Baird  
(301) 769-2798 or (240) 925-9647 (Cell)

# Building Services: Snow Removal and Ice Control Plan

**ST. MARY'S COUNTY GOVERNMENT**  
**DEPARTMENT OF**  
**PUBLIC WORKS & TRANSPORTATION**  
*George A. Erichsen, P.E., Director*



Francis Jack Russell, President  
Kenneth R. Dement, Commissioner  
Lawrence D. Jarboe, Commissioner  
Thomas A. Mattingly, Sr., Commissioner  
Daniel H. Raley, Commissioner

DATE: 01/2010

## **ATTACHMENT 3: OFFICE PROCEDURE**

### **County Highways, Construction & Inspections, Solid Waste & Building Services Divisions**

#### **Meal Allowance and Reimbursement During Call-Out and Emergency Conditions**

1. Each fiscal year, operating budget monies are approved by the Board of County Commissioners for use by the Department in paying approved food vendors and reimbursing employees for meals consumed/purchased during inclement and severe weather, declared emergencies and other unusual extended hour operations.
2. At the discretion of the Director, Division Managers will be authorized to allow essential employees to incur the expense of at least one meal per twelve (12) hour shift, usually at the end of the shift. These allowable extra costs are incurred when the essential employees are required to work.
3. Reimbursement is made when the Supervisor requires the staff member to be on campus at times other than normal working hours; and, therefore, incurs meal expenses he or she normally would not have.
4. Non-essential staff who are scheduled for work, or who remain on the job for their own convenience, or who are engaged in their normal and generally accepted duties, are not to be considered eligible for meal allowance under this policy.
5. In accordance with Section 1510 of the Personnel Manual, expenses incurred by an employee for a meal during local travel (within a 30 mile radius of Leonardtown), are not normally reimbursable. However, local meals are reimbursed provided the Department Head has recommended approval and the request is approved by the County Administrator. This includes operations under disaster and emergency response situations.
6. In all cases, a receipt issued by the dining establishment is to be provided.
7. To clarify the Reimbursable Rates Criteria in the Personnel Manual, no single employee may incur a meal expenditure of more than \$22 per diem, regardless of the number of hours or shifts worked. Approved flat per diem rates per employee have been established as follows: Breakfast @ \$5.00; Lunch @ \$6.00; and Dinner @ \$12.00.
8. It is understood that this policy has been a historical practice and the County Administrator recognizes this policy as a Standard Operating Procedure with discretionary oversight by the Director.





Building Services: Snow Removal and Ice Control Plan

**ATTACHMENT 5: INITIAL DAMAGE ASSESSMENT SUMMARY FORM  
(Sample)**

INITIAL DAMAGE ASSESSMENT SUMMARY FORM							
Jurisdiction: Saint Mary's County, MD			Date: 12-23-2009		Person Filing: George A. Erichsen		
Fax completed form to: 410-517-3610							
INDIVIDUAL ASSISTANCE (IA) TOTALS							
Fatalities		Injuries					
Missing							
Structure Type	Extent of Damage Totals				Total	Insurance (%)	Owner Occupied (%)
	Destroyed	Major	Minor	Affected			
Single Family Home							
Multi-Family Home							
Mobile Home							
Business							
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>			
PUBLIC ASSISTANCE (PA) TOTALS							
Categories of Damages/Brief Description					Estimated Cost of Damages		
Categories: A (Debris), C (Roads & Bridges), D (Water Control Facilities), E (Buildings & Equipment), F (Utilities)					\$0		
Category B (Emergency Protective Measures)							
County Highways Division							
Contractor Equipment (as many as 32 pieces - 748 hours)					\$90,722		
Staff Overtime (1,208 hours)					\$35,890		
In-house Equipment Use (dump trucks, 2 graders, 1 loader)					\$44,446		
Sand & Salt (700 tons)					\$40,941		
Construction & Inspection Division							
Staff Overtime (70.5 hours) x @ (\$29.17 / hr aver x 1.5)					\$3,085		
In-house Equipment Use (1/2 ton pick-ups)					\$1,340		
Building Services Division							
Staff Overtime (19 hours ea)					\$5,450		
In-house Equipment Use (6 snow throwers)					\$144		
Salt (5 tons)					\$2,400		
Supplies & Materials					\$322		
Contractor Assistance					\$5,645		
Mileage Reimbursement (Use of Personal Equipment)					\$119		
Vehicle Maintenance Division							
Staff Overtime (104 hours)					\$4,108		
Supplies & Materials (plow blades etc)					\$3,614		
Fuel (239 gas gal @ \$ 2.28 / 1,411 gal and diesel gal @ \$2.25 /gal)					\$3,720		

**FEMA SCHEDULE of EQUIPMENT RATES (5-1-2008)**

<u>Equipment</u>	<u>Size</u>	<u>Division</u>	<u>Hourly Rate</u>
Graders	12'	Highways	\$55.00 / hr
Loader with plow	4 cy	Highways	\$60.00 + \$18.50
Dump Trucks	10 cy	Highways	\$60.00 / hr
Truck-mounted snow plows	n/a	Highways	\$18.50 / hr
Sand Spreaders	n/a	Highways	\$ 3.30 / hr
Pick-up Trucks	½ ton	C&I	\$19.00 / hr
Pick-up Trucks	1 ton	Highways	\$25.00 / hr
Walk-behind snow throwers	>5hp	Building Services	\$ 8.00 / hr

# Building Services: Snow Removal and Ice Control Plan

## SNOW AND ICE CONTROL OPERATIONAL PLAN

**Conservation  
Property  
Consultants, L.L.C.**

P.O. Box 326 - Lexington Park, MD 20653  
(301) 862-5400 reedej@cpcon.com

File: 2010-09  
Date: 15<sup>th</sup> February 2010

Mr. George A. Erichsen PE, Director  
Department of Public Works & Transportation  
St. Mary's County  
P.O. Box 508  
The Arnold Building  
44825 St. Andrews Church Rd.  
California, MD 20619

Subject: Structural inspection/assessment of nine building roofs within Leonardtown.

Date of Inspection Services: 2/9/2010 & 2/12/2010

Dear Mr. Erichsen,

The purpose of these inspections was to determine the structural soundness of the various building's roof systems under the current snow loads and make recommendations concerning future operations.

**STANDARDS:**  
County Design Snow load = 20 pounds per square foot.  
Weight of Heavy snow = 20 pounds per cubic foot (maximum water content = 33%)  
Weight of Ice = 5.2 pounds per inch per square foot.

**1. PATUXENT BUILDING (COBA)**  
**SAFE to OCCUPY** – Suspended ceiling movement is normal.

This structure was inspected on the 9<sup>th</sup> of February and again on the 12<sup>th</sup> of February. County crews have shoveled most of the snow off this structure and opened the rear gutter / downspout system.

This structure is a pre-engineered metal building. The roof deck is formed of rows of light metal sheets "clamped" together. The main beams of this structure are designed to flex under loading. Typically this type of structure is designed to a standard of L/360 for the given county snow load. The span of the main support beams in the structure is approximately 40 feet, a deflection of between 1.33 inches (L/360) and 2" (L/240) is

reasonable. This deflection is a "spring action" within the beams and will allow the roof sections to return to the original position once the snow load is removed.

**2. CHESAPEAKE BUILDING (CHES)**  
**SAFE to OCCUPY**

This structure was inspected on the 11<sup>th</sup> of February. Prior to inspection county crews did a great job of opening all the interior "roof top" drains. No deflection under loading was observed within this structure. Snow load at the time of inspection was 3" of heavy snow (14 pounds per square foot) over most of the roof with a small drift of 18" (30 pounds per square foot) in the left front corner of the roof.

**3. GARVEY SENIOR CENTER (GARVEY)**  
**KEEP CLOSED UNTIL SNOW IS REMOVED FROM ROOF**

This structure was built in 1954 and has a roof structure consisting of a metal pan supported by 12 steel beams. The metal pan system shows heavy deterioration throughout the roof. This deterioration is most likely due to moisture within the roof system. This indicates failure points on the existing roof. At the time of inspection this roof had 8" of heavy snow (14 pounds per square foot) over most of the roof.

**4. PUBLIC SAFETY @1000**  
**SAFE to OCCUPY**

This structure has a 22" bar joist framing system. At the time of inspection the roof was clean and no signs of distress were observed.

**5. CARTER STATE OFFICE BUILDING (CSOB)**  
**SAFE to OCCUPY** – Clean snow from roof.

**6. ADULT DETENTION CENTER (ADC)**  
**SAFE to OCCUPY**

This structure had 8" of heavy snow over the entire roof surface at time of inspection. Most of the roof top drains were found open. It is recommended an area of 3 feet around each drain be shoveled to within 2" of the deck surface to promote drainage.

**7. LEONARD HALL RECREATION CENTER (LHRECCTR)**  
**KEEP CLOSED UNTIL SNOW IS REMOVED FROM ROOF**

The flat sections of this building have drifting snow and ice off of the barrel. Snow was found to be 24" in some locations (40 to 50 pounds of snow and ice). This structure was built in 1937 and has 14" flat plate open web joists at 40" on center supporting the roof deck. The roof deck appears to be a sandwich board of some type with an unknown load capacity. Localized roof failure could result from impact loading due to falling snow and ice.

**8. HEALTH DEPARTMENT BUILDING**  
**KEEP CLOSED UNTIL SNOW IS REMOVED FROM ROOF**

This structure shows no signs of distress, however at the time of inspection there was 17" of heavy snow on the roof and drainage is questionable.

**9. COUNTY COURT HOUSE**  
**SAFE to OCCUPY**

Inspection of this structure found two areas of concern which could cause water leakage into the structure. These locations are:

The open "roof top" area adjacent to States Attorney's Office has 4 to 5 feet of snow against the window glass. The wall waterproofing only extends above the roof deck 6 to 8 inches at best. Because this area has no easy snow disposal point it is recommended the snow be melted by use of a heated heater.

The Post House deck has 3 feet of snow against the outside wall. This snow should be removed to prevent leakage into the area below.

Thank you for providing CPC with the opportunity to assess these structures. If we can provide any additional information on these structures or additional structures feel free to contact us at 301-862-5400 or 410-618-4711.



Edward J. Reed PE SECB

I hereby certify that this document was prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 12568, Expiration Date: 3/31/2016.

Building Services: Snow Removal and Ice Control Plan

**ATTACHMENT 6: INTRADEPARTMENTAL GUIDELINES**

Departmental Operation(s)	Activity Description
STS Transit System	<ol style="list-style-type: none"> <li>(1) Once buses get about 45 minutes behind schedule, it is time to consider shutting down all or a portion of the routes.</li> <li>(2) System-wide there is a shift change at 12 noon and 3 pm, which presents natural and less disruptive opportunities to discontinue service.</li> <li>(3) Extend services until dark if possible.</li> <li>(4) Due to the impacts of interconnectivity, when the Calvert / Charles transit systems shut down, STS should follow suit on the affected routes.</li> <li>(5) When public schools are closed, there will be no senior transportation services provided by STS.</li> <li>(6) Remind drivers to remove <b>all</b> accumulated snow from the buses (roofs and hoods etc) prior to operation.</li> <li>(7) An estimated 1,000 passengers a day can be impacted by a decision to discontinue service.</li> </ol>
Convenience Centers	<ol style="list-style-type: none"> <li>(1) Work Incentive Agreements to utilize inmate labor should be signed annually with the Office of the Sheriff to assist in site clean-up.</li> <li>(2) When public schools are closed or delayed (due to weather), sites will be closed or delayed by the same amount of time.</li> <li>(3) Delayed openings should be no later than noon or the centers should remain closed for the day.</li> <li>(4) Convenience Centers are considered non-essential in the event of a weather emergency.</li> <li>(5) County Highways equipment may assist in snow removal, but only after all roads have had at least one plow-pass in both directions.</li> </ol>
Non-Public School Bus Transportation	<ol style="list-style-type: none"> <li>(1) When public schools are closed, non-public school bus transportation will not be operational.</li> <li>(2) Even if parochial schools choose to stay open, no contract transportation will be provided.</li> <li>(3) Private contractor selected school bus turn-around locations typically do not coincide with plowed cul-de-sac and intersection locations. County Highways is not required to make special accommodations.</li> </ol>

## Building Services: Snow Removal and Ice Control Plan

### SNOW AND ICE CONTROL OPERATIONAL PLAN

#### SNOW CREW SAFETY

Driving snow removal equipment is hard work. It requires driving for long hours in the worst conditions. While you, as equipment operators, are concerned with providing safe travel for motorists, you must not overlook your own safety. Here are a few tips to make your work safer:

- \* Start work physically and mentally fit and properly clothed.
- \* Check all equipment before each use. Inspect the lights, brakes, windshield wipers, defroster, plow bolts and chains, spreader and auger, flares and other safety equipment.
- \* Know your route. Perform a pre-storm route inspection observing landmarks and the locations of possible hazards (guardrails, curbs, railroad tracks, bridge joints, mailboxes, manhole covers, etc.) which may be hidden by falling snow.
- \* Choose the speed appropriate for conditions. Resist the urge to get the job done in a hurry.
- \* Be considerate of motorists having trouble driving in the snow. Keep your temper and patience when vehicles pass, or tailgate.
- \* Be brief when using the radio. Report stranded motorists and other emergencies when possible.
- \* Observe all traffic laws and signal your intentions clearly. Remember to wear your seatbelt.
- \* Before leaving the cab, set the brakes and disengage the power to the spreader and snowplow.
- \* Watch for signs of fatigue. Staring for hours at the driving snow can have a hypnotizing effect on drivers. The long hours and stress can take their toll as well. If you feel the onset of fatigue, take a short break – get out and walk around the truck and take some deep breaths.
- \* If you are involved in an accident resulting in personal injury or property damage, remember to protect the area, notify the proper authorities, and care for the injured. Become familiar with the County's Safety and Health Program guidelines.

***Take care of yourself by observing these few tips and keep your shift a safe one!***

*George A. Erichsen, P.E.*  
**Director**