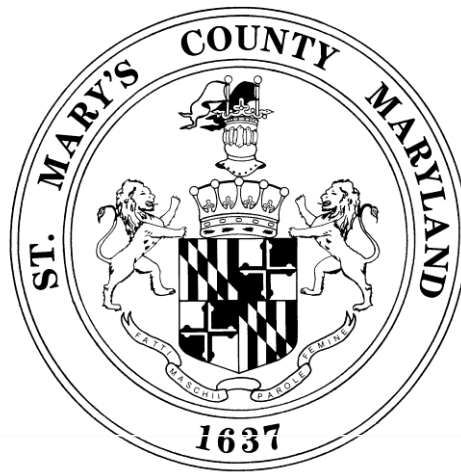


ST. MARY'S COUNTY

Department of Public Works & Transportation

COMPREHENSIVE FACILITIES MAINTENANCE PLAN (FMP)



MAINTENANCE

Building Services Division
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P. O. Box 508
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SUBJECT: BUILDING SERVICES MAINTENANCE GUIDELINES	DEPARTMENT: Department of Public Works & Transportation
TITLE: COMPREHENSIVE FACILITIES MAINTENANCE PLAN	APPROVAL DATE: September 1, 2010
	APPROVED BY: George A. Erichsen, P.E., Director

Background and Purpose

On December 9, 2003, the responsibilities of the Building Services Division were transferred to this Department. Prior to that time, the Department of Facilities Management performed maintenance of County-owned buildings and facilities. Building Services maintains all of the County-owned and/or leased facilities, over **1.23 million** square feet of parking facilities, **143,000** square feet of sidewalk, **14** emergency generators, STS bus shelters and airport / airfield lighting. Activities include janitorial services, preventive maintenance, carpentry, electrical, plumbing, and painting repairs, and utility costs for all buildings maintained by or reimbursed to the County. This Division provides building maintenance and custodial services for about **100** County buildings / facilities / structures of approximately **877,334** square feet.

The purpose of this Policy Statement is to establish guidelines for managing the County's diverse buildings and systems, which includes building maintenance, contract management, capital/non-capital improvement, custodial services, facilities management, building security, space planning, utility costs, asset management, tank / fire alarm monitoring & testing, safety inspection, loss prevention and energy conservation programs. The replacement value of these buildings in excess of **\$138,900,000** and must remain safe, healthy, accessible, and conform to all current codes and health / safety requirements.

This Plan is designed to improve safety and comfort of building occupants, maximize efficiency of each building, minimize the need for major repairs and replacements and to provide for a more deliberate approach to funding the maintenance and operations section of the budget. The following basic goals have been established as a part of this Plan:

- To preserve taxpayers' investments in public buildings;
- To help buildings function as they were intended and operate at peak efficiency, including minimizing energy consumption;
- To prevent failures of building systems that would interrupt occupants' activities and the delivery of public services;
- To sustain a safe and healthful environment by keeping buildings and their components in good repair and structurally sound; and
- To provide maintenance in ways that is cost-effective.

SECTION 1. ADMINISTRATION OF THE PLAN

The Building Services Division is fundamentally responsible for ensuring that St. Mary's County has working environments which are clean, safe, attractive, and comfortable. A vigorous maintenance program protects the physical assets of the publicly-maintained buildings and facilities. The Building Services Division is located at the Governmental Center in Leonardtown. The Director of the Department of Public Works & Transportation is responsible for the oversight of the Building Services Division and was named by the Board of County Commissioners as the Airport Manager and Energy Manager on July 1, 2001 and October 7, 2008, respectively.

1.1 MISSION STATEMENT

"To provide quality operational and maintenance activities as cost effectively as possible and to respond to service requests from our customers in a timely fashion in order to preserve facilities for future use by employees, visitors, and citizens."

1.2 CLIENT COMMITMENT

Our customers are the purpose of our work. They are not interruptions of it. The same is true of co-workers seeking assistance from us in serving our customers. We are all part of the same team working for the same goal. We take personal responsibility to ensure that all customers and co-workers receive a timely, efficient, and courteous response to their needs. We take pride in our work. We pledge to do what we believe is right and to fix things that go wrong. In implementing building maintenance and services, we promise to:

Investigate complaints received within 24 hours.

Perform emergency repair work within 48 hours.

Address urgent repair work will be attended within 2 weeks.

Schedule and prioritize normal/routine repair work within 4 weeks.

Maintain a preventive and programmatic repair program.

Keep each facility in a "presentable to the public" condition.

Because the Building Services Division is responsible for the condition of facilities and grounds, any project that alters the facilities or grounds in any way must be performed by Building Services personnel, its licensed contractors or approved by the Manager. We ask facility users to become familiar with the Work Order Request Procedures contained herein and to take advantage of our on-line Maintenance Request Form (**Appendix D**).

1.3 OBJECTIVES and STRATEGIES

The Building Services Division shall implement a program of maintenance for County buildings and support facilities, which through renewal, repair and/or replacement, will assure the operation of these facilities at or near their original condition of efficiency for as long as they remain in use for County government functions. Planned and routine maintenance programs will be implemented to extend the useful life of all buildings and prevent premature capital outlay for replacement.

The Building Services Division provides solutions for problems large and small – including when your sink is clogged, your office is too cold, you are locked out of your office, or your light bulbs need changing - just to name a few. The responsibility of supporting the daily business and activities of County-maintained buildings rests with this key Division and its workforce. They are likely some of the most familiar faces of County government - the people you see around the office everyday who keep the buildings and grounds clean, beautiful and most importantly, operating smoothly. This is accomplished under the following objectives and strategies:

1.3.1 Provide a Clean Working Environment

- Establish cleanliness standards for public and administrative areas.
- Manage custodial/janitorial and pest control contract services.
- Keep restrooms, faucets, fixtures, sewers and drains in working order.
- Protect and maintain all building exterior surfaces, to include painting and graffiti removal.
- Provide seasonal or annual cleaning and re-furbishment of building interiors.
- Assist in the continued improvement of the Office Paper Recycling Program.
- Implement energy management systems and “green building” performance standards.

1.3.2 Provide a Comfortable Working Environment

- Establish maintenance standards and schedules for all facilities and mechanical systems.
- Maintain occupancy comfort levels for lighting, heating and air-conditioning systems.
- Maintain plumbing, ceiling and floor systems.
- Establish an acceptable use and capacity of each building / facility.
- Monitor roof systems and building envelopes to ensure water tight integrity of buildings.
- Establish a schedule to eliminate existing deficiencies for all equipment.
- Manage a prioritized Work Order request and facilities maintenance program.
- Perform carpentry, repair of furniture, cabinets, and shelving.

1.3.3 Provide a Safe and Secure Working Environment

- Establish a desired level of performance for building elements.
- Manage security, alarm, elevator, and emergency generator systems.
- Respond to asbestos, lead paint, mold abatement.
- Perform snow and ice control on sidewalks and stairs.
- Provide directional, facility and building signage.
- Follow the Code of Safe Practices.
- Continue to comply with federal accessibility standards.
- Establish roofing system wind and snow loading capacities.
- Monitor fire extinguisher, suppression systems, and tank installations.

1.3.4 Provide a Friendly Working Environment

- Give the customer a dedicated and personal service.
- Establish realistic customer expectations.
- Solve problems in a fast, efficient, and friendly manner.
- Ensure all work carried out is done to the highest standard.
- Maintain the highest standards of appearance and health and safety awareness.
- Do what we do best.

1.4. FUNCTIONS and RESPONSIBILITIES

The primary functions/responsibilities of maintenance are:

- To plan, monitor, and maintain all buildings and incidental structures that have been entrusted to the Department.
- To ensure that all fiscal requirements for the proper security and maintenance of these facilities are requested annually.
- To monitor, coordinate, and effect corrective system upgrades/repairs based on available funding.
- To coordinate with building clients/users with respect to incidental work order and space needs requests.
- To prioritize preventive and programmatic repair programs for all County-maintained buildings.

- To provide technical evaluations of new building and renovation designs undertaken by consultants.
- To coordinate maintenance programs with lease requirements identified by the Real Property Manager.
- To perform life cycle and conditions assessments and report deficiencies in building and infrastructure.
- To supervise certain building projects and offer professional recommendations on building maintenance.
- To provide technical advice to all Government departments and agencies.

The maintenance personnel give special emphasis to the following:

- State/Federal code compliances.
- Maintenance related to health and safety.
- Scheduled preventive maintenance.
- Repair/replacement maintenance.
- Minor renovation and code correction.
- Interior and exterior aesthetics
- Ownership accountability in relation to service staff and buildings.

Characteristics of the maintenance program are as follows:

- Maintain over **850,000** square feet of building space.
- Provide janitorial services for all County-maintained facilities.
- Provide all necessary services as they relate to the physical facilities.
- Provide maintenance and upkeep of buildings and grounds.

1.5 BUDGET SUMMARY

There shall be prepared, a realistic annual Operating and Capital Budget based on accurate and detailed records of maintenance costs over a period of years. These costs can serve as a guide, but the maintenance budget shall reflect present needs, not merely past expenditures unless directed otherwise. Contract services include, but are not limited to; generator maintenance, elevator maintenance, air filter maintenance, pest control, water and well testing, water tower treatment, alarm/protection systems (fire & burglar), sprinkler systems, fire extinguisher testing, janitorial services, carpet cleaning, floor waxing/stripping, and window cleaning.

Whenever possible, quantity purchasing through bid procedures shall be established for the purchase of certain supplies, materials and contract services. As per the FY 2010 figure shown below, approximately **35%** of the Operating Budget is comprised of personnel costs, **35%** for contract services, and **35%** for public utility costs. Of that total, an estimated is attributable to direct support to the Office of the Sheriff.

It is recommended that in the absence of other information, the industry standard for maintenance and repair budgets for facilities is between 2 and 4 percent of the total aggregate Current Replacement Value (CRV) of the facilities as shown in **Appendix C**. With respect to the Capital Improvement Program (CIP), major maintenance and Facility Renovation & Replacement (FR&R) costs should be provided for any new, improved, or expanded facility. As such, the Division initiated a multi-year capital funding request for Building Maintenance and Repair Projects to address critical and programmatic facility needs.

The following represents a ten (10) year expenditure trend for the Building Services Division since Fiscal Year **2000**. For comparison purposes, the respective increase in building inventory (square footage) is also shown below:

Table 1.5.1. Operating Budget Maintenance Expense History

FISCAL YEAR	PUBLIC UTILITY COSTS	JANITORIAL COSTS	MAINTENANCE COSTS	TOTAL COST	SQUARE FOOTAGE
2000				\$ 2,051,029	615,400
2001	\$ 771,688	\$ 304,107	\$ 1,164,461	\$ 2,240,256	640,224
2002	\$ 892,737	\$ 313,339	\$ 1,368,529	\$ 2,574,605	740,499
2003	\$ 938,756	\$ 516,885	\$1,204,093	\$ 2,659,736	755,905
2004	\$ 961,702	\$ 531,684	\$1,279,113	\$ 2,772,499	774,523
2005	\$ 889,506	\$ 440,523	\$1,228,016	\$ 2,558,045	786,364
2006	\$ 1,295,760	\$ 432,134	\$1,274,815	\$ 3,002,709	786,364
2007	\$ 1,383,892	\$ 433,076	\$1,443,061	\$ 3,260,029	820,337
2008	\$ 1,496,131	\$ 435,239	\$1,915,787	\$ 3,847,157	837,338
2009	\$ 1,505,647	\$ 434,631	\$1,639,570	\$ 3,579,848	845,438
2010	\$1,448,959	\$ 423,301	\$1,577,686	\$ 3,449,946	845,438
2011**	\$1,624,500	\$ 312,017	\$1,728,668	\$3,665,185	847,958

** Represents approved FY 2011 operating budget amount.

The Building Services Division strives to meet the increasing demands of aging facilities, more in-house renovations, greater building inventory, increasingly more complex building systems, and higher utility costs through rigorous planning and operational efficiency. A measure of how successful this effort has been is the comparison of subsequent year budget expenditures and performance with the total Building Services Division baseline budget of **1994**. The figures are not corrected for inflation.

	<u>1994</u>	<u>2001</u>	<u>2005</u>	<u>2009</u>
Building Inventory (Sq. Ft.)	557,572	640,224	786,364	845,438
Building Services Budget	\$1,412,073	\$2,240,256	\$2,558,045	\$3,579,848
Budget Dollar per Square Foot	\$2.53	\$3.51	\$3.25	\$4.23
Less Public Utility Costs per Sq. Ft.	--	\$1.21	\$1.13	\$1.78
Less Janitorial Contracts per Sq. Ft.	--	\$0.48	\$0.56	\$0.51
Maintenance Cost per Sq. Ft.	--	\$1.82	\$1.56	\$1.94

1.6 STAFFING LEVELS

During the past decade, the Building Services Division has contended with expanding facilities with either level or reduced staff. The normal workday for maintenance employees consists of 8 1/2 hours and a 1/2 hour designated lunch break. Maintenance personnel work between 7:00 a.m. and 3:30 p.m. and remain on call, without compensation, after hours, seven (7) days a week. As of **FY 2011**, there are nineteen (20) employees; 1-Manager, 1-Supervisor, 5-Lead Mechanics, 10-Maintenance Mechanics, 1-Custodial Specialist (frozen position), and 2-Administrative personnel. During the last couple of years, a concentrated effort has been made to fund additional positions within the financial resources available to the Board of County Commissioners, but has not been approved.

The Association of Physical Plant Administrators (APPA) has developed Technical Trade Staffing Guidelines, which correlate staffing levels with response time, customer satisfaction, maintenance, mix and facility aesthetics. In order to assess the level of maintenance and custodial services provided, five (5) performance levels are discussed in Chapter II, Sections I and J.

1.6.1 Mechanics

It is recommended that staffing levels not be less than 20 mechanics per million square feet (50,000 s.f. per mechanic). With the current 845,438 square feet of facilities, 17 mechanics are required. At present, the staffing level for mechanics is 15, which is equivalent to the number of positions that were required in FY 1995.

1.6.2 IFMA Ratio

The IFMA ratio for the number of positions needed is one (1) per 47,000 of square feet maintained. With the current 845,438 square feet of facilities, 18 mechanics are required.

1.6.3 Facility Inspection / Custodial Specialists

The number of full time positions recommended to adequately inspect facilities on a daily basis is based on the physical ability to reasonable inspect approximately 50,000 square feet per hour (400,000 s.f. per day). With the current 845,438 square feet of facilities, two (2) positions are needed. At present, the staffing level for facility inspection is one (1), but the position was frozen in FY 2010.

1.7 AREAS OF RESPONSIBILITY

The Director of the Department of Public Works & Transportation (DPW&T) shall oversee and hold responsible the Building Services Manager for the implementation of the Maintenance Plan. The Manager of Building Services shall prepare and administer the Maintenance Plan. This reporting structure is consistent with the organizational structure for the Department of Public Works & Transportation.

In past years, the structure of the Building Services Division was included within a Facilities Management Department. One of the primary goals for consolidation with the Department of Public Works & Transportation was to centralize the responsibility for better efficiency. In past years, some organizational changes and work assignments had been based on personalities. As the organization of the trade shops became more involved, coordination of design, capital improvements, and maintenance work became more difficult. In addition, there were critical staffing shortages. The changes were intended to promote greater leadership and advancement for staff; and to make greater use of management systems within the consolidated Department of Public Works & Transportation, additionally providing the best of services to the facilities, customers, and staff.

1.7.1 Engineering Trades

The greatest need for additional staffing in maintenance in the near term is primarily in the area of Engineering Trades. This Division has the responsibility for the maintenance of heating, ventilation, and cooling equipment, plumbing systems, system fire/burglar alarms, elevators, boilers/generator equipment, and electrical repairs and modifications. The Engineering Trades are the caretakers of the most vital systems for our facilities. With the modernization and expansion of facilities, the mechanical and electrical systems have become more complex and sophisticated. Nowhere is this more evident than in the Adult Detention Center where there are large chiller plants, extensive control systems, and complex fire, security and generator systems. These systems demand careful attention in their operations and intensive preventive maintenance.

These systems are not limited to the Adult Detention Center (ADC). The entire County building inventory is rapidly approaching the point where 100% of its facilities are air-conditioned, but not necessarily with state of the art equipment. The Engineering Trades need additional manpower and expertise to manage the rising demand on their services. With the 2005 Budget, a full-time employee was requested to assist in this area in meeting system expectations, but was not approved. The expertise to be developed through this strategic plan is in-house, direct digital controls, chiller maintenance, and preventive maintenance for mechanical and air distribution systems.

1.7.2 Building Trades/Equipment and Grounds

The most important elements for greater efficiency and productivity for the Building Trades is coordination of work that cares for the architectural and structural features of facilities, as well as grounds. The work of these trades has been partially dispersed among several Departments, which can make coordination of work inherently difficult.

In order to achieve the objectives, the following areas of responsibility were identified:

Operations Specialty Responsibilities:

- Plans, organizes, and directs a large group of custodial, operational and trades employees engaged in a wide variety of service and maintenance functions, such as electrical, carpentry, painting, plumbing, and mechanical activities.
- Evaluates recommendations in terms of applicability and effectiveness in promoting desired objectives; continuously investigates possibility for redistribution of work, changes in equipment and work methods from a savings, service and efficiency standpoint; reviews requests for major repair services to assign priority and provide for prompt scheduling; supervises the maintenance of and reviews records pertaining to service and repairs performed; consults with Director concerning financial and equipment needs.
- Confers with multiple facility users concerning re-decoration and maintenance needs; investigates complaints; resolves problems pertaining to services rendered by the Building Services Division; attends meetings to review architectural and engineering plans and proposals to meet maintenance requirements.
- Assists with special event functions through the Public Information Office; ensures that special events work meets deadlines and is done to the satisfaction of special events organizers; coordinates administrative and maintenance personnel to provide special events services.

Operations Specialty Skills & Abilities:

- Practices, methods, techniques, tools, materials and equipment which are essential in building and grounds services and maintenance activities.
- Building services management techniques.
- Maintenance and scheduling procedures as they apply to building and grounds operations and maintenance.
- Methods and procedures which may be used to evaluate the effectiveness of a building and grounds operations and maintenance program.
- The occupational hazards and safety precautions pertaining to all phases of building and grounds operation and maintenance.
- Supervisory methods and techniques.
- Plan, organize, coordinate, and direct a large scale diversified building and grounds services and maintenance programs.
- Estimate labor, material, and time factors involved in a variety of building and grounds maintenance projects.
- Devise effective operations schedules.
- Keep abreast of recent developments in fields of building operation and maintenance, and to effectively apply such innovations to municipal building and grounds operations and maintenance activities.
- Make, interpret, and work from technical sketches and plans and to requisition and specify tools, materials, supplies, and equipment essential to the operation and maintenance of buildings and grounds.

Contract Management Responsibilities:

- Directs the negotiation, implementation, evaluation, and compliance of contracted building services; monitors providers' compliance with service standards and special requirements; recommends corrective action for deficient or problematic service providers; recommends non-payment or termination of regular or grossly deficient contracted services.
- Prepares contract specifications and bid documents; works in conjunction with consultants and other County departments to analyze contract documents; participates in contract negotiations; recommends the approval of contract proposals to the Procurement and Real Property Manager Offices; tracks contracts through the certification and administrative processes; notifies contractors of non-conformance.

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- Reviews prior audit reports and prepares asset management information in accordance with proper accounting standards; makes recommendations regarding compliance with contracted agreements and agency directives.

Contract Management Skills & Abilities:

- The principles and practices of contract and grant development, negotiations, administration and control as they relate to the provision of building services and leases.
- Municipal ordinances, procedures, and guidelines pertaining to contract preparation and processing.
- The principles and practices involved in monitoring and evaluating contracted building services.
- The administrative aspects of financially auditing provider agencies.
- The principles, practices, and techniques of contract management and compliance requirements.
- Supervisory methods and techniques.
- Direct a contract negotiation, implementation and compliance division through subordinate managers and supervisors.
- Develop reporting, quality control and tracking systems for monitoring contracted agreements.
- Negotiate contract provisions with providers.
- Establish and maintain effective working relationships with administrators, associates, inter-departmental or contracted agencies.
- Express ideas effectively, both orally and in writing.

Miscellaneous Responsibilities:

- Inspects buildings and grounds to ascertain the degree to which standards of cleanliness and maintenance have been attained and to prevent and eliminate unsanitary, unsafe, or unsatisfactory conditions; inspects power plant and elevator operation equipment in major buildings to ascertain that maintenance standards are being adhered to and to eliminate unsafe and unsatisfactory conditions.
- Evaluates work performance of Division personnel; observes need for and initiates training classes; reviews work schedules and determines personnel needs; reviews, and whenever possible, resolves grievance problems.
- Keeps informed of new methods and products used in buildings and grounds maintenance through periodicals, sale interviews and meetings with leaders in the building maintenance field; experiments with new products, equipment and work methods and directs instruction of personnel in their use; plans for, reviews and approves requisitions for stock replacements, new equipment and materials; estimates, or arranges for estimates of, proposed alterations and major repairs; serves as building manager consultant to other municipal agencies.
- Performs related work as required.
- Directs through subordinate supervisors, a large staff of trades and other employees engaged in carpentry, mechanical, plumbing, heating, air conditioning and other maintenance and repair functions for various facilities and equipment; confers with trades supervisors to ensure that maintenance problems are resolved; tours buildings and grounds to ascertain that established standards of maintenance are being followed; prepares overall maintenance schedules; oversees contracted maintenance and repair activities.
- Recommends modifications to existing plant and equipment facilities; prepares rough layouts, plans and specifications, and cost estimates of proposed renovation and construction projects; consults with architects and engineers to ascertain that departmental functional requirements are effectively incorporated into the plans and specifications for new capital facilities; reviews resulting plans and specifications to determine that no conflict exists and that the operating needs of the Department are provided for, refers discrepancies to the attention of consultant architects and engineers.

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- Coordinates renovation and construction activities of outside contractors; inspects work performed by outside contractors while in progress and upon completion; approves changes in materials and determines that the letter and intent of the plans and specifications are properly carried out by prime and sub-contractors; recommends departmental acceptance and authorization of final payment on capital projects.
- Makes recommendations on projects to be included in the capital budget; advises management on budgetary requirements of proposed work; schedules construction activities to conform to budget restraints; monitors capital program activities; directs the maintenance of cost and other records; serves as a technical advisor to Engineering and Capital Projects Divisions and other departmental administrators; reports on progress of renovation/repair projects and maintenance work.
- Investigates the possible re-distribution of work or changes in equipment and work methods to reduce costs or improve efficiency.

Miscellaneous Skills & Abilities:

- Achieve a high standard of service to building occupants and the general public, and to exercise significant judgment and tact in resolving problems which arise in normal building and grounds operations.
- Constantly review operations and contracts and improve the effectiveness of the Division.
- Achieve and maintain harmonious relationships with building occupants, the public and fellow employees.

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SECTION 2. PLANNING AND ASSESSMENT

The tasks and responsibilities of maintenance are coordinated and managed by the Building Services Manager, supervisor, maintenance foremen, and a support staff. Historically, the combined annual maintenance expenditures of the Division are approximately **1-2%** of the annual General Fund expenditures for St. Mary's County Government.

2.1 INTRODUCTON

Annual site visits and inspections are important components to the continued implementation of the Comprehensive Maintenance Plan. In 2006, an improved program for intensive site visits, reviews, and inspections was established. The goals for this program are to develop a systematic approach to the assessment of maintenance needs, prioritize maintenance requirements, provide better coordination in the scheduling of work, and to ensure equity of effort throughout the system.

Short-term and long-term improvements are identified for possible future funding through the operating budget or through capital improvements. Independent of customer service and measurable primarily through adherence to departmental policies is **service efficiency**. This characteristic focuses on the organization's ability to predict, prepare and address, record, and follow-up on maintenance activities. Is the message from a preventive maintenance service call, or are building reviews becoming a planned corrective repair in an orderly manner? Are materials and tools for a service call prepared in advance, or must the worker make several trips back to the shop to get everything? Is there a clear record of work completion with fault and correction codes accurately recorded? Is the repair long-lasting, or does it require numerous callbacks? Was the customer informed of the completed work and given an opportunity to comment? If service information is gathered and maintained, the Manager has the opportunity to recommend or delay major system repairs that affect the accumulation of deferred maintenance. If the organization is not efficient, system failures become the normal initiator of service calls and user activities are affected by frequent outages.

2.1.1 Planned Maintenance Initiatives

Planned maintenance initiatives include, but are not limited to the following:

- Develop and record statistical manpower / man-hour data to assist in the mechanical, electrical, and plumbing trades. Expansion to support group in conjunction with the added square footage due to continued construction. Data will be collected from work management program.
- Prepare a professional development program for all trade areas with Human Resources.
- Implement energy conservation action plans and establish consumption reduction goals.
- Continued assessment and monitoring of lease and ownership accountability with maintenance and actual building equipment repairs.
- Establish a rating for the overall condition of facilities via an Inventory and Facility Condition Index (FCI).
- Improve performance by correlating customer service expectations orientation to maintenance activities.
- Develop facility maintenance standards and preventive maintenance procedures.
- Make sure LGIT Covered Property Schedule is updated annually by the Risk Manager.
- Track/measure the facilities maintenance operation budget as a percent of the institution's Current Replacement Value (CRV).
- Evaluate the need to maintain day custodians based on productivity and system demands.
- Implement greater accountability by providing mechanics with specific areas of responsibility.
- Explore the use of work release, seasonal, temporary, and/or part-time help for painting or grounds maintenance.
- Provide building safety inspection protocol and awareness to employees.
- Develop a strong web presence and on-line maintenance request opportunities.
- Continue to improve roof maintenance with the explicit goal of eliminating all roof leaks.
- Improve snow/ice removal and emergency management operations with Recreation and Parks.

- Draft / adopt No Smoking policy and criteria for naming existing and new facilities.
- Implement a work management program. This will support safety, security, warehousing, maintenance responsibilities, and trending history.
- Develop capital improvement programs for programmatic and critical maintenance and repairs.
- Increase maintenance capabilities by requesting additional mechanic(s).
- Simplify janitorial services contracts, standardize levels of service, and utilize “green” products.
- Maintain operations of Carter State Office Building after facility reverts to the State in 2013.
- Begin fluorescent bulb and ballast recycling programs.
- Continued updating and replacing of aging equipment with more efficient systems.
- Install standardized 5-digit 911 facility signage in conjunction with Governmental Center Complex directional signage.
- Continue utility consumption reporting through auditing, control, and monitoring of energy consuming processes to support reductions on utility costs.

The continued expansion of facilities in recent years and the escalating sophistication of the physical plant have placed greater demands on the skill level and workload of the maintenance staff. Skill enhancements and cross training of personnel are essential components for meeting high expectations for both quantity and quality of work performed.

2.2 INVENTORY AND CONDITION ASSESSMENT

An inventory and condition assessment of facilities assigned to Building Services is performed annually. This inventory includes all deficiencies in facilities, components such as interior finish, exterior finish, roof, floor, ceiling, electrical, HVAC, plumbing, food preparation, energy conservation, fire suppression, alarm, and site appearance. All buildings named and/or dedicated during the prior year in accordance with **Appendix F** are included at this time. Deficiency data that is collected is utilized to develop relative priorities as part of the budget process. The 1994 Space Needs Study also rated Building Conditions as Excellent, Good, Poor or Demo.

2.2.1 Effective Age of a Building

The Building Services Division has adopted the Maryland Department of General Services Guidelines for estimating the life of a building, which is based on life cycle cost accounting principles and the following:

- Buildings in “good condition” will last 100 years.
- Buildings in “normal condition” will last 95 years.
- Buildings in “fair condition” will last 75 years.
- Buildings in “poor condition” will last 55 years.

The effective age of a building depends upon its actual age and any remodeling expressed as a percentage that has been performed on the building.

To use Table 1 (Appendix H), assume a building is in fair condition; i.e., a building will last a total of 75 years, and the actual age of the building is 40 years. Thirty percent (30%) of this building was remodeled 25 years ago. From Table 1, the effective age is 36 years. The remaining life of the building is then 39 years (75-36).

In considering a building's remaining useful life, consideration should be given to:

- Its condition in relation to its present use and future use.
- Any future plans of the agency with respect to the building.
- Future remodeling plans will significantly alter the building's life span.

2.2.2 Facilities Condition Assessment (FCA)

Using industry and manufacturer standards, the service life for each component has been established and the remaining useful life estimated. A Facilities Condition Assessment (FCA) is an integral part of identifying maintenance deficiencies and provides the data that determines the Facilities Condition Index, described below. It is a continuous, systematic process, which an organization can evaluate the condition of its facilities for the purpose of identifying repair, rehabilitation, and replacement needs. FCA is a key component of an effective maintenance and repair program. The effective use of this standardized process will assist in ensuring that the stewardship responsibilities for assets are being properly met and will help reduce exposure to liabilities resulting from hazards and risks associated with uncorrected deficiencies.

An adequate FCA program should also include a functional adequacy assessment and associated costs. The latter is performed when management wants to know how well facilities support the functional mission. For example, a facility or building may be structurally adequate, but its space sizes and configurations and insufficient wiring, etc. may not support the current functional mission. Nonetheless, calculating the Facility Condition Index (FCI) and Current Replacement Value (CRV) is an integral part of the maintenance program.

2.2.3 Facilities Condition Index (FCI)

The Facilities Condition Index (FCI) is a standard method of measuring the condition of the facility and provides the opportunity to keep a continuous view of the condition of its facilities and possible future funding requirements. The concept was developed by Applied Management Engineering of Virginia Beach, Virginia, and is endorsed by the American Public Works Association (APWA) and the Association of Physical Plan Administrators (APPA). The FCI of a facility is calculated by dividing the cost of repairing deficiencies by the current replacement value (CRV) of the facility, expressed as a percentage.

FORMULA:

$$\text{FCI} = \frac{\text{Cost of Repairing Maintenance Deficiencies}}{\text{Current Replacement Value}} \times 100\%$$

FCI	FACILITY CONDITION
0 ≤ 5%	Very Good
5.01 % - 10%	Good
10.01% - 30%	Fair
30.01% - 50%	Poor
≥ 50%	Very Poor – Recommend Demo

The Facility Condition Index (FCI) provides a simple measurement of a facility's condition and illustrates the percentage of its capital amount that the Division would have to spend to eliminate the backlog of maintenance deficiencies. The FCI represents the ratio of the cost to correct the facility's deficiencies or repair costs to the Current Replacement Value (CRV) of the facility. **The closer the FCI is to 0 percent, the better the condition of the asset.** Each building should be given a FCI rating.

For example, if a building has \$100,000 of existing deficiencies and a Current Replacement Value (CRV) of \$1,000,000, its FCI is \$100,000 divided by \$1,000,000 minus a ten percent facility deterioration. In the above example, the building with an FCI of 0.10 or 10 percent (10%) would be rated as “Good” condition. Newer buildings tend to have better FCI scores than older buildings. As such, when the FCI is higher, the condition of the facility will be worse. The FCI of each facility should be tracked over time to measure the effectiveness of the overall maintenance program.

2.2.4 Current Replacement Value (CRV)

It is recommended that in the absence of other information, the industry standard for maintenance and repair budgets for facilities be set between **2 and 4** percent of the aggregate Current Replacement Value (CRV) of the facilities, also referred to as the Current Asset Value (CAV). To do this, Building Services has compiled a Facilities Directory (**Appendix C**), which shows the current CRV of its facilities. Two (2) different methods are generally used:

- The current unit construction costs for various types of facilities in an organization’s inventory are multiplied by the total number of units of each type of facility in the inventory.
- The original total cost of each facility in an organization’s inventory is multiplied by an escalation factor to determine the cost of the facility in current dollars.

Either method will give CRV’s that are sufficiently accurate for maintenance and repair budgeting purposes; but in most cases, the first method is easier to use. Although great accuracy is not required to calculate the CRV of a particular facility, but because of errors, cumulative or not, they become negligible when the overall CRV is multiplied by 2 to 4 percent for the overall budget. The CRV is also used as a part of GASB compliance, insurance premium calculations, and asset management initiatives. Annually the County’s insurance provider (LGIT) reviews the established CRV and makes recommendations on property value adjustments based on average condition and quality of the structure(s). It is important to note that the CRV excludes replacement of office related equipment such as printer and computers, books and publications, office furniture and personal belongings.

2.3 KEY PERFORMANCE INDICATORS (KPI)

What Gets Measured Gets Done. The purpose of KPIs is to provide quantifiable measurements of things that are important for long-term success. Identifying the most important KPIs is the first step towards realizing increased efficiency in the workplace. A useful Maintenance Key Performance Indicator (KPI) helps guide choices for improving maintenance effectiveness and efficiency. A useful maintenance KPI also lets you identify the issues causing maintenance efforts and helps you select the right strategy to either support or correct the actions producing the results. A KPI is a metric, not a target. Often expressed as a ratio or percentage it allows data to be tracked over time to form trends in performance. The use of KPIs puts performance in context. It evaluates the performance according to expectations. The context is provided using 1) thresholds (i.e. upper and lower ranges of acceptable performance), or 2) targets (i.e. predefined gains, such as 10% new customers per quarter), or 3) benchmarks, which can be based on industry-wide measures or various methodologies. Key performance indicators should be **SMART**:

- S** = Specific: clear and focused to avoid misinterpretation.
- M** = Measurable: can be quantified and compared to other data.
- A** = Attainable: achievable, reasonable, and credible under conditions expected.
- R** = Realistic: fits into the organization’s constraints and is cost effective.
- T** = Timely: doable within the time frame given.

Targets are often expressed as objectives and may be included in the performance data to highlight under- or over-performance. For example, the actual number of complaints is not a KPI it is just information. On the other hand the number of complaints expressed as a percentage of the number of work orders processed or the number of customers is much more meaningful than just the bare number of complaints. It is important that when selecting a range of maintenance KPI that they help improve reliability and maintenance performance and do not simply indicate that there are operational deficiencies or problems. In addition, most KPIs indicate the direction of

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the performance, either “up,” “down,” or “static.” Examples of Key Performance Indicators (KPIs) for the Building Services Division are:

- Public utility expenses: \$1.51 to \$2.22 per square foot
- Janitorial / Custodial costs: \$1.75 to \$2.50 per “occupied” square foot
- Maintenance costs for facilities, excluding capital expenses, can range between \$1.51 and \$2.22 per square foot.

Table 2.3.1 Equivalent Costs (\$) Per Square Foot (S.F.)

FISCAL YEAR	PUBLIC UTILITY Cost / s.f. (\$)	JANITORIAL Cost / s.f. (\$)	MAINTENANCE Cost / s.f. (\$)	TOTAL Cost / s.f. (\$)	Janitorial Cost / “Occupied” s.f.
2000					
2001	1.21	0.475	1.82	3.51	1.19
2002	1.21	0.423	1.85	3.48	1.07
2003	1.24	0.684	1.59	3.51	1.72
2004	1.24	0.686	1.65	3.58	1.80
2005	1.13	0.560	1.56	3.25	1.41
2006	1.65	0.549	1.62	3.82	1.38
2007	1.68	0.528	1.76	3.97	1.33
2008	1.79	0.520	2.29	4.60	1.31
2009	1.78	0.514	1.94	4.23	1.29
2010	1.71	0.501	1.87	4.08	1.34
2011**	1.92	0.369	2.04	4.33	0.93

Note: BoE data for maintenance costs per square foot includes positions, salaries, wages, contracted services, supplies and materials, equipment and vehicles. However, the calculation excludes janitorial, utility & snow removal services which are included in the Building Services calculation(s) above.

- Percent of overtime incurred (DPWT goal is 2%): normal 6%-10%
- Total Maintenance Cost / Asset Replacement Value
- Total Staff Cost Spent in Maintenance / Total Maintenance Cost (TMC): 20%-25%
- Reliability of Equipment: % of Emergency repair work: less than 10%
- Percent of Planned work: greater than 80%
- Work Order Backlog: optimum level 2-4 weeks of work
- Ratio of maintenance costs to asset complete replacement value (CRV)
- Ratio of maintenance people to asset complete replacement value (CRV)
- # Full Time personnel needed to inspect facilities / day: @ a rate of 0,000 sf / hour
- IFMA Ratio of total staff needed: 1 per ea. 47,000 s.f. maintained
- # of maintenance mechanics required: maximum of 20 per m.s.f.
- Contractor ratio.

What is the ratio of contractor hours or dollars to in-house work? The design of your budget should predict the amount of contractor work in a given year. The ratio is only important as it relates to your prediction. If you predicted 10% and the last few months have been coming in at 50% there had better be a bunch of construction or projects going on that were approved after your budget.

-- Contractor labor cost as a percentage of total maintenance cost: 10%-40%

-- Maintenance labor to parts:

Useful ratio when added to other knowledge because it provides input into formulas to estimate budgets for new buildings, fleet expansions, or plants.

-- Purchase to issue ratio:

The purchase to issue ratio is an advanced indicator of inventory accumulation or depletion. If you are trying to reduce your inventory then you must run this ratio below 1.

-- Work ratios:

There are many measures that deal with the ratios of various types of work. How do you spend your time benchmarks (this is defined more precisely in the chapter on work orders in the section Reason for repair) are essential to see how the mix of work is showing improvement.

-- Planned maintenance hours % Planned hours

-- Planned hours from all sources should exceed 80% of the worked hours

-- Emergency hours % - Emergency hours unscheduled

-- DIN (Do it now) hours % DIN unscheduled

-- The first important breakdown is planned (PM + CM + Short repair + Project) to unplanned (DIN + EM). This ratio shows how much your facility is ahead of the breakdown curve or how much you are dominated by unscheduled events. The trend of these numbers gives you a feel for whether there is improvement.

-- A second measure to look at is how much non-maintenance work is done (this would include PS and Capital). There might be money saving opportunities in reviewing the details if the ratios look too large.

-- Work Order Backlog: 1-3 weeks per person or 2-4 weeks total work

-- True Time Available: 6.0 - 6.5 hours per person per day

One calculation issue is whether to use true time available or 8 hours. Calculations show an eight hour day is reduced by 1 hour and 20 minutes from meals and actual breaks and additional 30 minutes from meetings and other information exchange. A real workday might be closer to 6.0-6.5 hours. When a 10 person crew has a 490 hr backlog we would calculate they have about 8 days (using 6 hr/day) not 6 days (using 8 hr).

-- Hourly to support people ratio

-- Hourly to supervisor (span of control)

Excess support staff sometimes gets in the way of productivity. One area of savings may come from moving the support staff back to the floor if possible.

-- Jobs waiting (by reason):

Open work order hours. An open work order is related to an area assignment. A machine might have an open work order for any work done each month. Usually the goal is to minimize open work orders in most situations because of the loss of control. The exception might be in routine work of a known content and duration (such as line start-up, or policing the parking lot for glass).

-- Accounted for hours (Payroll hours / Work Order hours):

Use of Work Orders - % labor hours. The first measure after you install a work order system is the ratio of work order hours to payroll hours. It should rapidly increase to the 90-95% range (some say to 100%). That way you know all of the hours are somewhere in the system (at least). Be sure people are not pencil whipping the work orders (at the end of the day just whipping through putting 2 hours on each of the 4 work orders to get 8 hours).

-- Effectiveness (work order hours/standard hours):

Where there are good standards on most jobs the effectiveness ratio can be useful. It shows how much work is really done. You get 3 hours credit for 3 standard hours even if the job took 16 hours. In this way slow downs, problems are subtracted from your output calculation.

-- Building Occupant Satisfaction:

The rule of thumb for a reliable survey response rate is 60% for meaningful results. However, reasonable data can be gathered with as low as 20% response from very large building populations on the scale of 1,000 occupants or necessitate 100% response from very small populations.

-- Number of service calls:

This can tell maintenance and user departments how effective maintenance is at foreseeing problems and correcting them before they occur. This benchmark would be factored by significant changes in size, equipment, or mission of the organization being served.

-- Mean time to respond (MTR, by priority):

How long does it take to respond to a service call from the time it is phoned in to the time a service person shows up. In some organizations this is a major way the maintenance department is rated.

-- Mean time to repair (MTTR):

Once a response has been made how long does it take for the customer to be satisfied. When this is added to MTR you can get an idea how long your customers are unsatisfied.

-- Callbacks % Callback: average 3% with a 0% target

A callback is defined as a return of a service person to a unit for work on the same system or related system as their original work. Callbacks are a problem in the mechanic, part, procedure, or the design of the asset. In any case the reason has to be uncovered and fixed. This ratio trended over time indicates if the problem is being addressed.

-- Maintenance satisfaction survey. On-going or annual survey of attitudes toward maintenance. This measures the effectiveness of your communication about maintenance.

2.4 WORKING IN HOT OR EXTREME HEAT CONDITONS

In addition to the provisions provided in the County's Safety and Health Policy (SHP) regarding heat stress prevention, heat related symptoms and the table of concerns and possible heat disorders shown below, the Department has adopted some additional guidelines for working in hot or extreme heat conditions.

At very warm temperatures, the most serious concern is the risk of heat disorders such as heat stroke, heat exhaustion, cramps, and fainting due to dangerous over-heating of the body. Heat stroke is a life-threatening medical emergency. As a general rule, the limit of high temperature tolerance is between 95 and 104 degrees Fahrenheit. However, several environmental factors affect the amount of stress a worker faces in a hot work area; temperature, humidity, radiant heat (such as from the sun, water or pavement surface, roof or a furnace) and air velocity. According to the U.S. Department of Labor, there are several ways to help reduce the risk of heat stress that includes: work practices such as providing plenty of drinking water; work and rest periods (work-rest regimen) with longer rest periods in a cool area; acclimatization to the heat through short exposures followed by longer periods of work in the hot environment; and employee education so that workers are properly informed. The physical demand required to perform work duties, type of clothing worn and general fitness of an employee are also contributing factors in how an individual responds during exposure to excessive heat.

2.4.1 The Buddy System

When working in the heat, monitor the condition of your co-workers and have someone do the same for you. Heat-induced illness can cause a person to become confused or lose consciousness.

2.4.2 Rest-Work Regime

Temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks are defined as extreme heat. During unusually hot weather conditions lasting longer than 2 days, it is advisable to make a special effort to adhere rigorously to the above preventive measures during these extended hot spells and to avoid any unnecessary or unusual stressful activity. When feasible, the most stressful tasks should be performed during the cooler parts of the day (early morning or at night). ----

Double shifts and overtime should be avoided whenever possible. Rest periods should be extended to alleviate the increase in the body heat load. With respect to providing rest - work breaks, supervisors, and managers are to generally follow the Occupational Health and Safety recommendations when monitoring the rest-work regime of their staff. OSHA Heat Stress Quick Cards are distributed to staff to

2.4.2 Heat Index and Exposure Guidelines

For the protection of our staff, in 2010, the DPW&T adopted **Table 1. General Heat Index Chart** and **Table 2. Permissible Heat Exposure Threshold Limit Values (TLVs)**, published by the American Conference of Governmental Industries Hygienists. With these guidelines and based on the type and rate of work being performed (Section 2.4.4), we can better determine the length of time during which a person can safely work or remain in a particular hot environment. The DPW&T evaluated the feasibility of purchasing several small portable direct-reading Wet Bulb Globe Temperature (WBGT) meters / monitors, but at over \$1,600 each, it was not feasible given that the graphical approach below provides sufficient guidance.

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Table 1. General Heat Stress Index Temperature (°F) vs. Relative Humidity															
	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%
115	111	115	120	127	135	143	151								
110	105	108	112	117	123	130	137	143	151						
105	100	102	105	109	113	118	123	129	135	142	149				
100	95	97	99	101	104	107	110	115	120	126	132	136	144		
95	90	91	93	94	96	98	101	104	107	110	114	119	124	130	136
90	85	86	87	88	90	91	93	95	96	98	100	102	106	109	113
85	80	81	82	83	84	85	86	87	88	89	90	91	93	95	97
80	75	76	77	77	78	79	79	80	81	81	82	83	85	86	86
75	70	71	72	72	73	73	74	74	75	75	76	76	77	77	78
Heat Index/Heat Disorders															
Heat Index	Possible heat disorders for people in higher risk groups														
130 or higher	Extreme Danger. Heatstroke/sunstroke highly likely with continued exposure.														
105-130	Danger. Sunstroke, heat cramps or heat exhaustion likely, and heat stroke possible with prolonged exposure and/or physical activity.														
90-105	Extreme Caution. Sunstroke, heat cramps and heat exhaustion possible with prolonged exposure and/or physical activity.														
80-90	Caution. Fatigue possible with prolonged exposure and/or physical activity.														
Source: National Weather Service															

How to read the chart: Find the temperature on the left hand side, then move to the right until you find the column for the approximate relative humidity. That number will be the temperature that it will "feel" like. For example, a temperature of 95°F and relative humidity of 50% will "feel" like 107°. Add up to 15° if in the direct sun.

Table 2. PERMISSIBLE HEAT EXPOSURE THRESHOLD LIMIT VALUES

<u>Work/rest regimen</u>	----- Work Load** -----		
	<u>Light</u>	<u>Moderate</u>	<u>Heavy</u>
Continuous work	86°F*	80°F*	77°F*
75% Work, 25% rest, each hour	87°F*	82°F*	78°F*
50% Work, 50% rest, each hour	89°F*	85°F*	82°F*
25% Work, 75% rest, each hour	90°F*	88°F*	86°F*

*From Table 1. Values are in °F, WBGT.

**These TLV's assume that workers exposed to these conditions are adequately hydrated, are not taking medication, are wearing lightweight clothing, and are in generally good health. For un-acclimatized workers, the permissible heat exposure TLV should be reduced by 4.5°F.

2.4.4 Determination of Employee Work Rates

- **Rest.** Sitting quietly or with moderate arm movements.
- **Light.** Sorting light materials, sitting or standing to control machines, light hand, or arm work (i.e., Using a table saw), inspecting crops, walking, driving mobile equipment on paved roads.
- **Moderate.** Using a chain saw, off-road operation of mobile equipment, periodic handling of moderately heavy materials, weeding, hoeing, and picking fruits or vegetables, spraying on level, even, ground, washing or scrubbing vehicles or equipment, walking at a moderate pace (2-3 mph).
- **Heavy.** Transferring heavy materials, pick and shovel work, digging, hand mowing, loading sacks, stacking materials, planting seedlings, carrying, pushing or pulling heavy loads (.e., loaded hand carts or wheelbarrows), hand-sawing wood, laying cinder blocks, walking at a fast pace of 4 mph or less.
- **Very heavy.** Very intense activity at a fast to maximum pace, heavy shoveling or digging (i.e., wet sand), ax work, climbing ladders, lifting more than 44 pounds at 10 lifts/minute, jogging or running.

2.5 WORKING IN CONFINED SPACES

"Confined Space" refers to a space which by design has limited openings for entry and exit, unfavorable natural ventilation which could contain or produce dangerous air contaminants, and which is not intended for continuous employee occupancy. An employee must be aware of hazards that he/she is completing as a result of the Facilities Maintenance Plan.

The guidelines included in this Plan are designed not only to make the confined space safe for the worker, but also to make the worker cognizant of the hazards associated with this work area and the safe practices necessary to deal with these hazards.

Confined spaces can be below or above ground and can be found in almost any workplace. A confined space, despite its name, is not necessarily small. Examples of confined spaces include but are not limited to storage tanks, compartments of ships, process vessels, pits, silos, vats, degreasers, reaction vessels, boilers, ventilation and exhaust ducts, sewers, tunnels, underground utility vaults, and pipelines. Ditches and trenches may also be a confined space when access or egress is limited. A Checklist of Considerations for Entry, Working in and exiting Confined Spaces is shown in **Appendix K**.

Employees who work or enter into confined spaces require special training and equipment. Inspecting and cleaning the boilers present physical hazards to the employee. A boiler is commonly referred to as a pressurized vessel. It is also considered a confined space. It is large enough and so configured that an employee can bodily enter it, has a limited number of entrances and exits from the space, and was not built for humans to occupy the space. This is a requirement under federal OSHA, and State (MOSH).

Entry into a confined space shall be by permit only. The permit is an authorization and approval in writing that specifies the location and type of work to be done, lists the hazards that may be encountered and certifies that all existing hazards have been evaluated by a qualified person, ensures that necessary protective measures have been taken for the safety of each worker, completes an isolation checklist (lockout / tagout).

2.5.1 Hazards in confined spaces

All hazards found in a regular workspace can also be found in a confined space. However, they can be even more hazardous in a confined space than in a regular worksite. Hazards in confined spaces can include:

- Poor air quality: There may be an insufficient amount of oxygen for the worker to breathe. The atmosphere might contain a poisonous substance that could make the worker ill or even cause the worker to lose consciousness. Natural ventilation alone will often not be sufficient to maintain breathable quality air.
- Chemical exposures due to skin contact or ingestion as well as inhalation of 'bad' air.
- Fire Hazard: There may be an explosive/flammable atmosphere due to flammable liquids and gases and combustible dusts which if ignited would lead to fire or explosion.
- Process-related hazards such as residual chemicals, release of contents of a supply line.
- Noise.
- Safety hazards such as moving parts of equipment, structural hazards, entanglement, slips, falls.
- Radiation.
- Temperature extremes including atmospheric and surface.
- Shifting or collapse of bulk material.
- Barrier failure resulting in a flood or release of free-flowing solid.
- Uncontrolled energy including electrical shock.
- Visibility.
- Biological hazards.

2.5.2 Classification of Hazards (Entry and Rescue)

Confined space is classified based on existing or potential hazards relative to the confined space which include the characteristics of the confined space, oxygen level, flammability, and toxicity. The classification shall be determined by the most hazardous condition of entering, working in, and exiting a confined space.

- **Confined Space, Class "A"**. A confined space that presents a situation that is immediately dangerous to life or health (IDLH). These include but are not limited to oxygen deficiency, explosive or flammable atmospheres, and /or concentrations of toxic substances.

Rescue procedures require the entry of more than one individual fully equipped with life support equipment. Maintenance of communication requires an additional standby person stationed within the confined space.

- **Confined Space, Class "B"**. A confined space that has the potential for causing injury and illness, if preventive measures are not used, but not immediately dangerous to life and health.

Rescue procedures require the entry of no more than one individual fully equipped with life support equipment. Maintenance of indirect visual auditory communication with workers is required.

- **Confined Space, Class "C"**. A confined space in which the potential hazard would not require any special modification of the normal work procedure.

Standards rescue procedures may be utilized. Maintenance of direct communication with workers from outside the confined space is required.

2.5.3 What should be done when preparing to enter a confined space?

The important thing to remember is that each time a worker plans to enter any work space, the worker should determine if that work space is considered a confined space. Be sure the confined space hazard assessment and control program has been followed.

A Checklist of Considerations for Entry, Working in and exiting Confined Spaces is shown in **Appendix K**. This checklist represents the minimum preparation required for each class of confined space entry.

The appropriate type of clothing, personal protective (PPE) and safety equipment shall be used in any confined space as determined by a qualified person, which includes eye and face, head, body, hearing, respiratory and hand protection, a wrist / body harness and/or safety belt with lifeline(s), etc.

Determine if it absolutely necessary that the work be carried out inside the confined space. In many cases where there have been deaths in confined spaces, the work could have been done outside the confined space.

Before to entering any confined space, a trained and experienced person should identify and evaluate all the potential hazards within the confined space. An important step in determining the hazards in a confined space is air testing.

Rescue procedures must also be specifically designed for each entry.

The air within the confined space should be tested *from outside of the confined space* before entry into the confined space. Care should be taken to ensure that air is tested throughout the confined space - side-to-side and top to bottom. A trained worker using detection equipment which has remote probes and sampling lines should do the air quality testing.

All potentially hazardous energy sources must be de-energized and locked out in accordance with **Section 7** of this Plan prior to entry to the confined space so that equipment cannot be turned on accidentally.

2.5.4 Safety Watch / Standby Person

There should be warning signs to prevent unauthorized entry to the confined space. Anyone working in a confined space must be constantly alert for any changing conditions within the confined space. In the event of an alarm from monitoring equipment or any other indication of danger, workers should immediately leave the confined space. Another worker, the Safety Watch or Standby Person, trained in emergency rescue procedures, shall be assigned to remain outside the confined space to monitor, maintain unobstructed life lines and to be in continuous communication with the workers inside the confined space. The Safety Watch has the following duties:

- Understands the nature of the hazards that may be found inside the particular confined space and can recognize signs, symptoms, and behavioral effects that workers in the confined space could experience.
- Monitors the confined space and surrounding area and is on the look out for dangerous conditions.
- Remains outside the confined space and does no other work which may interfere with their primary duty of monitoring the workers inside the confined space.
- Maintains constant communication with the workers in the confined space.
- Orders the immediate evacuation if a potential hazard, not already controlled for, is detected.
- Calls for emergency assistance immediately if an emergency develops.
- Is immediately available to provide non-entry emergency assistance when needed.
- Can provide entry rescue only after the most stringent precautions are taken and another Safety Watch is immediately available.

2.5.5 What should be done when working in and exiting a confined space?

A Checklist of Considerations for Entry, Working in and exiting Confined Spaces is shown in **Appendix K**.

Maintain Air Quality. Natural ventilation (natural air currents) is usually not reliable and not sufficient to maintain the air quality. Mechanical ventilation (blowers, fans) is usually necessary to maintain air quality because a confined space may hold a build up of toxic gases or pockets where the oxygen level is too low for humans. Air testing may need to be ongoing depending on the nature of the potential hazards and the nature of the work. Conditions can change while workers are inside the confined space and sometimes a hazardous atmosphere is created by the work activities in the confined space.

Hot Work. Work where a flame is used or a source of ignition may be produced (hot work) should not normally be performed in a confined space. While doing the hot work, the concentrations of oxygen and combustible materials must be monitored to make certain that the oxygen levels remain in the proper range and the levels of the combustible materials do not get higher than 10% of the Lower Explosive Limit. In special cases it may not be possible, and additional precautions must be taken to ensure the safety of the worker prior to entering the confined space.

Should a worker leave a confined space for a short time (for example, coffee break, getting additional material for their work.), the confined space should be re-tested before the worker re-enters. If the confined space has been continuously monitored by equipment that can show the details of the atmosphere during the time absent from the confined space and this information can be seen from outside the confined space, it can be re-entered without retesting. If there is not continuous air monitoring then the hazard assessment needs to be repeated.

No confined space should be closed off until it has been verified that no person is inside it.

After exiting the confined space, the time of exit should be noted on the entry permit.

2.5.6 Confined Space Hazard Assessment and Control Program

To manage the risks associated with working in confined spaces, a Confined Space Hazard Assessment and Control Program should be developed and implemented. A Confined Space Hazard Assessment and Control Program, specific for the work being conducted, should be written for work in each and every confined space.

2.5.7 Labeling and Posting

Emergency procedures, including phone numbers of fire departments and emergency medical services shall be posted conspicuously within the immediate area of the confined space, or at the telephone from which help would be summoned.

In addition, all warning signs shall be printed both in English and in the predominant language on on-English reading workers. Where established symbols exist, they shall also be used. Workers unable to read labels and posted signs shall receive information regarding hazardous areas and shall be informed of the instructions printed on the signs. All entrances to any confined space shall be posted. Signs shall include but not necessarily be limited to the information shown on the image (at right).



In addition, when a specific work practice is performed or specific safety equipment is necessary, the following statement shall be added, in large letters, to the warning sign:

RESPIRATOR REQUIRED
FOR ENTRY

--

LIFELINE REQUIRED
FOR ENTRY

--

HOT WORK PERMITTED

OR

NO HOT WORK

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SECTION 3. MAINTENANCE CATEGORIES

Maintenance includes preventative maintenance; normal repairs; replacement of parts and structural components; and other activities needed to preserve the asset so that it continues to provide acceptable services and achieves its' expected life. Maintenance excludes activities aimed at expanding the capacity of an asset or otherwise upgrading it to serve needs different from, or significantly greater than, those originally intended. This section discusses eight (8) categories of maintenance activities.

3.1 PREVENTATIVE MAINTENANCE (PM)

Optimizing the life of the capital equipment means maintaining it so that it lasts 30-to-40 percent longer than poorly-maintained equipment. The maintenance department's goal is to keep the equipment properly maintained to achieve the longest life cycle. A preventive maintenance program designed for the life of the equipment is key to obtaining a maximum life cycle. As such, preventative maintenance is the highest non-emergency priority for Building Services. A preventative maintenance program generates work orders for periodic, scheduled inspections, lubrications, filter changes, and minor adjustments to the physical plant of all the facilities. The purpose of preventative maintenance is to reduce breakdowns, provide the longest useful life of equipment, ensure uninterrupted service, and provide a comfortable and safe environment for users of the facilities. While usually unnoticed by staff, this program is an integral part of Building Services and helps reduce emergency and trouble calls. Operations and frequencies of preventive maintenance are determined by the manufacturer and historical data.

The upkeep of facilities is predicated on the belief that long-term economy and safety require regular and consistent efforts to prevent unnecessary repair work. Preventive Maintenance requires periodic expenditures of labor and material based on time or use frequency to maintain the structures in their optimum condition.

Preventive maintenance costs markedly less than repairing extensive damage or building failures

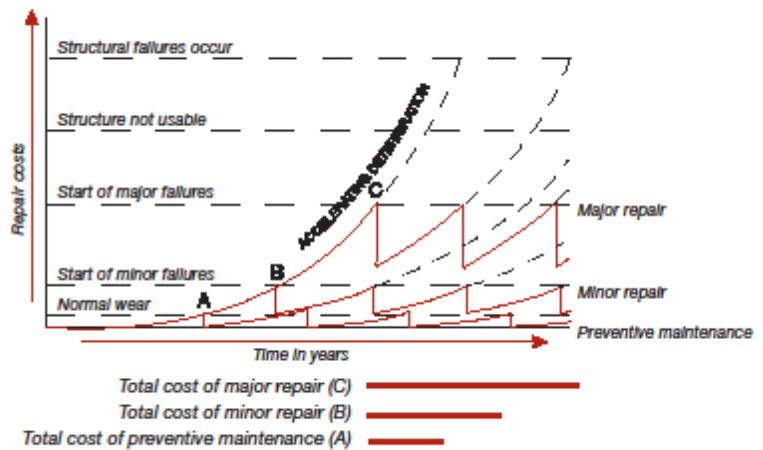


Diagram from Preventive Maintenance of Buildings, Van Nostrand Reinhold, New York, 1991.

This area of maintenance is a coordinated effort between the Building Services Division and the operations staff of each facility. Specialists are contracted to assist/perform in services for clock and bell systems, elevator maintenance, fire protection systems, security systems, water sampling/FMS system, and automatic temperature controls.

Preventive Maintenance comprises those activities that are performed on a scheduled basis annually, or more frequently, that prevents or predicts a larger maintenance effort or systems testing that is code required or for other programmatic needs. Examples include replacement of filters or belts, lubrication, vibration analysis, tightening of fasteners and connections, infrared analysis of equipment, debris removal, tube inspection, fire alarm, and emergency generator testing. There are several other kinds of preventive maintenance that occur less frequently, i.e. painting, tuck-pointing, tube replacement, and equipment rebuild, that are more capital in nature. However, when preventive maintenance drops to very low levels, it is likely that the majority of time is spent on reactive or emergency maintenance resulting from poor customer satisfaction and facility condition.

Preventive maintenance includes the lubrication program, routine inspections, and adjustments. Many potential problems can thus be corrected before they occur. Table 3.1 Preventive Maintenance Overview represents a schedule of the major tasks performed in the area of Preventive Maintenance and was last updated in July 2010.

An example of preventive maintenance”

Septic Tank Maintenance Regular, scheduled pumping of the septic tank is arguably the most essential element of commercial septic system maintenance. Commercial septic tanks typically require much more frequent pumping than their residential counterparts. The frequency needed for pumping tanks depends on a number of factors, including:

- Type and size of the facility
- Size of your septic tank
- Volume and rate of wastewater flows (ie. number of bathrooms and fixtures)
- Amount of organic matter (e.g., waste solids, food scraps, fats/oils/grease) in the wastewater

An inspection of septic systems by a licensed septic inspector should be conducted annually. The Inspection, will help determine the pumping frequency the individual tank requires. After the frequency for the particular facility has been determined, re-inspections should occur every 3 years thereafter. Unless otherwise determined, tanks should be placed on a minimum 5 year pumping.

Perhaps above all else, the key to the effectiveness of the grease trap is regular, frequent pumping. Depending on the size of the grease trap and the strength and flow of wastewater at a given commercial establishment, required pumping frequency may range from twice per month to once every three or six months.

3.2 Preventive to Corrective Maintenance Ratio (PM /CM)

When establishing an effective maintenance program, one must determine not only which Preventive Maintenance (PM) routines to accomplish, but how often should they be done. The answer to this question would seem on the surface to be quite simple and, in fact, one proven theory is that the PM to Corrective Maintenance (CM) work order ratio should be about 6 to 1. This theory assumes that the PM inspections should reveal some type of corrective work that should be completed on an asset on average every 6 times it is accomplished. The assumption is that, if the ratio is greater than 6:1 you are performing the PM too often; if the ratio is less than 6:1, you are not performing it often enough. (The “6 to 1 Rule”, proven by John Day, Jr., Manager of Engineering and Maintenance at Alumax of South Carolina, during the period when Alumax of South Carolina was certified as the first “World-Class” maintenance organization).

(SEE FOLLOWING PAGES)

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Table 3.1 PREVENTIVE MAINTENANCE OVERVIEW

STANDARD TASK	JOB DESCRIPTION	HOW OFTEN	BUILDING #'S	HOW MANY PER YEAR
BACK FLUSH SEWER LINES	BACK FLUSH SEWER LINES (EVERY FRIDAY)	WEEKLY	78	52
BEACON LIGHT CHECK	CHECK BEACON LIGHT BULBS, BALLASTS, FIXTURES, ETC.	WEEKLY	64, 97	104
BOILER AND FURNACE CLEANING	TAKE FURNACE APART, CLEAN ALL PARTS, CHANGE NOZZLES, FILTERS, VAC OUT, TEST & TUNE W/CO2 MACHINE	ANNUALLY	01, 04, 08, 11, 22, 26, 28, 41, 46, 57, 58, 59, 60, 61, 63, 64, 68, 70, 73, 76, 93	21
CHECK ALL BELTS ON A/H	CHECK ALL BELTS ON AIR HANDLER EQUIPMENT	WEEKLY	26	52
CHANGE BATTERIES IN STAT.	CHANGE BATTERIES IN THERMOSTAT	QUARTERLY	95	4
CLEANING CONDENSOR BARRELS	CLEANING CONDENSOR BARRELS	ANNUALLY	02, 26, 28, 41, 76	5
CLEANING CONDENSOR COILS	CLEANING CONDENSOR COILS	ANNUALLY	02, 03, 04, 08, 09, 11, 12, 22, 25, 26, 27, 28, 29, 41, 45, 46, 48, 49, 57, 59, 61, 62, 63, 64, 65, 67, 68, 71, 72, 73, 76, 78, 83, 84, 90, 91, 93, 95, 97	39 - 390
CLEANING WATER TOWERS	CLEANING WATER TOWERS	3 TIMES PER YEAR	01, 26, 28	9
CLEAN DRYERS, DRYER VENTS	CLEAN ALL DRYERS AND DRYER VENTS	QUARTERLY	08, 48, 49, 63, 68	20
CLEAN DRYERS, VENTS & VAC.	CLEAN ALL DRYERS, VENTS & VACUUMS	QUARTERLY	46	4
CHECK ELEVATOR PUMP	CHECK ELEVATOR PUMP	QUARTERLY	28, 46, 59	12
CHECK GENERATOR OPERATION	PLEASE CHECK GENERATOR OPERATION	DAILY	46, 95	520
CHECK GENERATOR OPERATION	PLEASE CHECK GENERATOR OPERATION	WEEKLY	12, 29, 51, 52, 53, 54	260
CHECK EQUIPMENT	CHECK EQUIPMENT AS ATTACHED ON CHECKLIST	DAILY	22, 26, 41, 46, 59	1300

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STANDARD TAKS	JOB DESCRIPTION	HOW OFTEN	BUILDING #S	HOW MANY PER YEAR
CHECK EQUIPMENT	CHECK EQUIPMENT AS ATTACHED ON CHECKLIST	WEEKLY	08, 09, 63, 64, 65, 78	260
CHECK EQUIPMENT	CHECK EQUIPMENT AS ATTACHED ON CHECKLIST	MONTHLY	93	12
CLEAN ROOF DRAINS, SPOUTS	CLEAN ALL ROOF DRAINS AND DOWN SPOUTS	SEMI-ANNUALLY	09, 10, 11, 12, 22, 25, 28, 29, 41, 45, 48, 49, 57, 58, 59, 63, 64, 65, 67, 68, 78, 93	44
DOOR ALARMS, CHECK BATTERY	DOOR ALARMS, CHECK BATTERIES	QUARTERLY	22, 48, 59, 65	16
EFFICIENCY TEST	DONE ONCE BOILER TURNED ON FOR FULL HEATING & 1/2 WAY THRU HEATING SEASON TO MAKE SURE RUNNING CORRECTLY	ANNUALLY	01, 04, 08, 11, 22, 26, 28, 41, 46, 57, 58, 59, 60, 61, 63, 64, 68, 70, 73, 76, 93	
EXTERIOR DOOR MAINTENANCE	CHECK EXTERIOR DOOR CLOSURES, HINGES, LOCKS, PANIC BARS AND LATCHING DEVICES	SEMI-ANNUALLY	01, 04, 05, 08, 09, 11, 12, 22, 23, 25, 26, 27, 28, 29, 41, 45, 48, 49, 59, 60, 61, 63, 64, 65, 67, 68, 78, 91, 93, 95	60
FIRE ALARM TESTING	FIRE ALARM TESTING	ANNUALLY	02, 02, 03, 04, 05, 08, 09, 11, 12, 22, 25, 26, 27, 28, 29, 41, 45, 46, 48, 49, 57, 59, 60, 61, 62, 63, 64, 65, 68, 70, 76, 78, 93, 95, 97	35
FIRE HYDRANT TEST	CHECK ALL FIRE HYDRANTS	QUARTERLY	02, 27, 28, 41, 46, 58, 59, 91, 95	36
FILTER CHANGE ALL BUILDINGS	CHANGE ALL AIR FILTERS, WIPE MOTORS, CHECK BELTS, OIL MOTOR AND GREASE IF NEEDED	SEMI-ANNUALLY	04, 12, 27, 29, 41, 57, 59, 64, 65, 71, 78, 93, 95	26
FILTER CHANGE - 6 WEEKS	FILTER CHANGE EVERY 6 WEEKS	35 DAYS/6 WEEKS	01, 05, 08, 09, 22, 23, 25, 28, 48, 49, 63, 67, 68, 72, 91	135
FOOD CHUTES MAINTENANCE	CLEAN & LUBRICATE ALL FOOD CHUTES	QUARTERLY	46	4
FORK LIFT INSPECTION	WEEKLY FORKLIFT INSPECTION	WEEKLY	91	52
FREEZER/ICE MAKER CLEANING	CLEAN FREEZER AND/OR ICE MAKER COILS	QUARTERLY	46, 63, 78	12
GENERATOR PREVENTIVE MAINTENANCE	CHANGE OIL, OIL FILTER, FUEL FILTER, WATER FILTER, ANTIFREEZE CHECK, CHECK BATTERY, CHANGE BATTERY EVERY 2 YEARS	ANNUALLY	01, 02, 04, 08, 09, 22, 25, 26, 28, 41, 46, 59, 63, 64, 65, 78, 93	17

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STANDARD TASK	JOB DESCRIPTION	HOW OFTEN	BULDING #S	HOW MANY PER YEAR
GREASE A/H MOTOR BEARRINGS	GREASE ALL AIR HANDLER MOTOR BEARRINGS	MONTHLY	26	12
HANDICAP DOORS & BATTERIES	CHECK HANDICAP DOOR OPERATION AND BATTERIES	QUARTERLY	22, 28, 41, 59, 65, 67, 68, 95	32
KITCHEN HOOD CLEANING	CLEAN KITCHEN HOOD	MONTHLY	46	12
OIL FILTER CHANGES	2-3 TIMES PER YEAR-WINTER SEASON DEPENDING ON GRADE OF OIL	SEMI-ANNUALLY	01, 04, 08, 11, 22, 26, 28, 41, 46, 57, 58, 59, 60, 61, 63, 64, 68, 70, 73, 76, 93	42 - 63
POWER WASH DECK & STEPS	POWER WASH DECK AND STEPS	ANNUALLY	09, 59, 62, 63	4
POWER WASH & PAINT WALKWAY	POWER WASH AND PAINT NON-SKID ON WALKWAY	ANNUALLY	08, 27, 62	3
PREVENTIVE MAINTENANCE	CHECK EQUIPMENT AS ATTACHED ON CHECKLIST, CHECK BELTS, OIL MOTOR & GREASE IF NEEDED	DAILY	01, 02, 04, 28	1040
PREVENTIVE MAINTENANCE	CHECK EQUIPMENT AS ATTACHED ON CHECKLIST, CHECK BELTS, OIL MOTOR & GREASE IF NEEDED	WEEKLY	25	52
PUMP GREASE TRAP OUT	PUMP GREASE TRAP OUT	2 TIMES PER YEAR	46, 63, 78	6
PUMP OUT SEPTIC TANKS	PUMP OUT SEPTIC TANKS	ANNUALLY	08, 63, 67	3
RUN FIRE PUMP	RUN FIRE PUMP	MONTHLY	46	12
ROOF TOP FILTER CHANGE	ROOF TOP HVAC FILTER CHANGE, CHECK BELTS, BEARRINGS, OIL MOTORS, & GREASE IF NEEDED, CHECK FOR COMPRESSOR LEAKS	QUARTERLY	26, 46, 59	12
ROUTINE MAINTENANCE	CHECK EXTERIOR BULBS, BALLASTS, FIXTURES, ETC.	WEEKLY	01, 02, 04, 05, 08, 09, 10, 11, 12, 14, 15, 16, 17, 21, 22, 23, 25, 26, 27, 28, 29, 32, 38, 41, 45, 46, 48, 49, 55, 56, 57, 59, 60, 61, 62, 63, 64, 65, 67, 68, 78, 86, 87, 88, 89, 90, 91, 93, 95, 97	2600
RUNWAY LIGHT CHECK	CHECK RUNWAY LIGHT BULBS, BALLASTS, FIXTURES, ECT.	WEEKLY	64, 97	104
RUN SMOKE EVACUATION SYSTEM	RUN SMOKE EVACUATION SYSTEM	MONTHLY	26	12

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STANDARD TASK	JOB DESCRIPTION	HOW OFTEN	BUILDING #S	HOW MANY PER YEAR
SAFETY INSPECTION	CHECK FIRE EXTINGUISHER, MAKE SURE CHARGED UP, PINS NOT PULLED, RETAINING SAFETY DEVICE IS IN PLACE, HOSES NOT DISCONNECTED OR BRITTLE, BRACKETS ARE TIGHT TO WALL	MONTHLY	01, 02, 03, 04, 05, 08, 09, 10, 11, 12, 14, 15, 16, 17, 18, 19, 22, 23, 25, 26, 27, 28, 29, 30, 40, 41, 45, 46, 48, 49, 51, 54, 55, 56, 57, 58, 59, 60, 62, 64, 65, 66, 67, 68, 70, 73, 76, 78, 90, 93, 95, 97	624
SCHEDULED	CHECK EXTERIOR BULBS, BALLASTS, FIXTURES, ETC.	WEEKLY	28	52
SLIDER DOOR MAINTENANCE	CHECK ALL LOCKS, HINGES, & LATCHING DEVICES ON ALL SLIDERS AND CELL DOORS	SEMI-ANNUALLY	46	2
SOUND SYSTEM INSPECTION	CHECK SOUND SYSTEMS, BATTERY CHECK AND REPLACEMENT	MONTHLY	28	12
SPRINKLER VALVE CHECK	MAKE SURE VALVES ARE OPEN & CHAIN IS ON WITH LOCK	MONTHLY	02, 04, 22, 26, 28, 41, 46, 59, 63, 65, 78, 93, 95, 97	168
SWITCH WATER PUMP	SWITCH WATER PUMP AT DOMESTIC WATER	MONTHLY	26	12
VEHICLE INSPECTION	#220, 221, 223, 224, 225, 226, 227, 228, 229, 230, 5050, 1911 PLEASE ATTACH ALL INSPECTION SHEETS TO THIS WORK ORDER	MONTHLY	91	12
VENTS AT DETENTION CENTER	CLEAN VENTS THROUGH OUT BUILDING (HALLWAYS, CELLS, CLOSETS, SHOWERS)	ANNUALLY	46	1
VENTS CLEANED	CLEAN ALL VENTS THROUGH OUT BUILDING	QUARTERLY	01, 04, 05, 08, 09, 12, 22, 23, 25, 26, 28, 29, 45, 48, 49, 57, 61, 63, 64, 65, 67, 78, 91, 93, 95	100
WIPE DOWN WALLS/FURNITURE	WIPE DOWN WALLS/FURNITURE IN COUNTY COMMISSIONERS OFFICE	MONTHLY - SUMMER MONTHS	28	3
WATER FILTER/KITCHEN EQUIPMENT	CHECK AND/OR REPLACE WATER FILTERS ON KITCHEN EQUIPMENT & DESCALER FOR KITCHEN	QUARTERLY	46	4
DRYER VENTS & DRYERS	CLEAN AND VACUUM DRYER VENTS AND DRYERS	SEMI-ANNUALLY	08, 46, 48, 63	2

3.2 SCHEDULED MAINTENANCE (SM)

The preservation and enhanced operation of facilities requires an expenditure of labor and materials based on a predictable timetable and/or use schedule, as well as industry standard life estimates of building elements shown in Section K of this Chapter. The estimates are based on the Maryland Department of General Services life cycle cost accounting procedures.

This work involves both maintenance crews and contracted services. These large jobs can call for substantial funds and a regular schedule permits the budgeting for these items to be spaced out over a period of time. In this way, the Building Services Division is able to alert the Director of Public Works & Transportation to the long-term maintenance needs of the system and can request annual funds on a more predictable basis.

The maintenance schedules presented here are subject to revision when conditions mandate that the schedule be moved up or because of excellent care or budget limitations, which allow a particular job to be deferred to a later time. While the schedules do indicate a year in which certain services should be provided, it is clear that this represents an effort to anticipate needs. Therefore, the year is only a guide and not a firm commitment. The schedules are flexible to reflect reality.

3.2.1 <u>Suggested Maintenance Schedule</u>	<u>Frequency (years)</u>
Tank Testing	5
Roof Reconditioning-Preventive Maintenance	4
Roof Replacement	30
Painting-Interior/Exterior Finishes	5-10
Carpet Replacement	8-12
Floor Tile Replacement	15
Boiler Inspections	Yearly
Boiler and Furnace Overhaul	20
Parking Lot Pavement Resurfacing	10
HVAC Replacement	15-20
Ceiling Finishes	20
Replace Asphalt Roof Coverings	20
Rebuild/Replace Compressors	20
Replace Special Equipment (i.e., kitchen appliances)	25
Replace Fans and Air Handling Units	25
Re-Point Masonry	25
Replace Evaporative Cooling Units	30
Replace Metal Roof Coverings	35

3.2.2 <u>Suggested Component Replacement Schedule</u>	<u>Frequency (yrs)</u>
Replace Lighting Fixtures	20
Replace Emergency Generators	20
Replace Exterior Doors	40*
Replace Windows & Glazing	40*
Replace Interior Walls & Doors	40*
Replace Elevators	40*
Update Plumbing Systems	40*
Update Fire Protection Systems	40*
Replace Electrical Service & Distribution Systems	40*
Inspect and Repair Foundations, Floors, and Structural Components	50*

* Indicates an acceptable frequency of 50% Facility Life is acceptable

3.2.3 <u>Building Replacement Schedule</u>	<u>Frequency (yrs)</u>
Modular Building	25
Commercial Grade Building (Wood or Aluminum Frame)	50
Public Buildings (Masonry or Steel Frame)	75

3.2.4 Building Envelope Checklist

Before managers can develop a maintenance program for the building envelope, they must ensure the system is as functional as possible. Ensuring the building envelope is functional could require a year's worth of maintenance or an extensive capital investment. A capital project could include a roof replacement, sealing significant amounts of openings in the back-up wall construction, and replacing windows. Once managers have established a functional and relatively efficient building envelope, they can develop a maintenance plan. A typical plan includes:

- visual surveys of deterioration and openings in roofs
- annual repairs of detected deterioration
- infrared surveys of roofs every five years
- visual survey of wall-system components annually
- sealants in wall systems and window perimeters
- window glazing gaskets
- cracks and openings in wall-system components
- Interior survey of openings in wall systems above the ceiling
- infra-red survey of wall components every five years

3.3 CAPITAL MAINTENANCE (CAM)

Capital Maintenance is typically done as a separate effort outside of the maintenance trades and outside the annual operating maintenance budget. The funding level required to perform this work on a regular basis to control the accumulation of deferred maintenance. Examples of critical or major maintenance include; large equipment, rebuild or replacement, roof or window replacement, and system rehabilitation. In order to address these critical maintenance needs, multi-year capital improvement programs are submitted annually for funding consideration.

3.4 ALTERATIONS AND IMPROVEMENTS (AIM)

Improvements to facilities that involve the expenditures of labor and materials, or items less that \$10,000, constitute this category of incidental maintenance.

This category involves those incidental changes in facilities that add to or alter those parts of the building, which experience has revealed are functionally inadequate. Storage facilities, relocation or re-design of spaces, or simple alterations of existing areas in a building permit government functions to evolve and change with the changing operational, space, or administrative needs. The Building Services Division manages minor renovation projects. These projects are typically maintenance items in scope and are undertaken because the finished projects are to be cared for by the Building Services Division over their useful life. Special attention is given to seeing that items used in the project are architecturally compatible with the facility and replacement parts are readily available, durable and economical to inventory.

Maintenance crews are able to accomplish many of these alterations; but others, particularly those that involve site alterations, are handled by the Building Services Division and are included in the Capital Improvement Program (CIP). In either case, a written User Concurrence Form is required prior to work to ensure programmatic and operational needs have been addressed.

3.5 CORRECTIVE MAINTENANCE (COM)

This category of maintenance encompasses all those items, which require an expenditure of labor and materials to restore them to their original condition and for which the expenditure is unpredictable. Corrective Maintenance consists of activities that are scheduled in advance and initiated by the Building Services Division without the need for an external customer request. Examples include responses to preventive maintenance investigations such as a misaligned motor fan assembly and replacement of overly hot circuit breakers or lamp ballasts that continue to function. Major (capital) maintenance is not included.

Corrective maintenance activities are generated from PM inspections, routine operational requests, and routine service requirements. These activities make up the maintenance backlog and should be planned and scheduled in advance. This approach is the most cost-effective way to perform maintenance, reducing performance costs by 2-to-4 times compared to reactive maintenance. When the majority of maintenance activities fall into this category, equipment service levels can be maintained.

The daily work, unforeseen and unexpected comprises one of the largest parts of the maintenance budget. The time that is required to accomplish the repair is scheduled by the Building Services Manager as a result of requests for service from any customers in the system. These requests (in the form of work orders and maintenance requests) are examined by the Supervisor of Maintenance or area Foremen, priorities are established, and then work crews are assigned.

In an effort to actively assess the physical condition of facilities, the Supervisor of Maintenance and his staff make an annual inspection of every facility in the County Maintenance System; and corrective work orders are initiated as a result of these inspections. These inspections promote better communications between staff and the Building Services Division, as well as reflect the proactive approach of the Department.

Heating system breakdowns, cooling system failures, and leaks from a heavy rain are all examples of the emergency type repairs that require the immediate attention of the Building Services Division.

The Building Services Division is committed to repair items as quickly as possible and to provide for a safe and efficient operation of all the County-maintained facilities. This requires sufficiently trained personnel, ample inventories of materials for all facilities, and the support of the operational staff.

3.6 REACTIVE MAINTENANCE – VANDALISM AND SECURITY (RM)

Reactive Maintenance is activities that range from a minor problem with equipment operation and hot/cold calls to some vandalism repairs. These are unplanned and are a response to a facility's needs and activities. Many organizations refer to these as trouble calls or service calls. You may consider these to be of a nuisance nature requiring low levels of skill for correction; however, these are the efforts that facility organizations are often measured by. The more planned maintenance performed greatly reduces the Reactive Maintenance.

This category of work involves those items which require expenditures of labor and material to; (1) restore facilities to their original condition after vandals have damaged them, or (2) protect them from vandalism.

Damage done to existing facilities by vandalism is an unpredictable element in planning for maintenance. The Building Services Division is confronted with this need; however, anticipates this damage by stocking those materials most often replaced or repaired.

Vandalism is not only costly in material terms, but also interferes with daily work operations. Deterring vandalism is indispensable. In addition, efforts are made to upkeep lighting at all facilities through maintenance inspections and site visits.

The growth of the County buildings inventory and expanded programs may be accompanied by increased costs for vandalism and security-related repairs. Minimizing those costs will be a significant concern for the Building Services personnel.

In far too many cases, equipment is run until it breaks down. There is no preventive maintenance; the technicians react, working only on equipment that is malfunctioning. This approach is the most expensive way to coordinate maintenance. Equipment service level is generally below acceptable levels, and product quality is usually impacted.

3.7 DEFERRED AND NON-MAINTENANCE (DM)

The Deferred Maintenance category of work refers to identified work that has been delayed due to funding constraints, workload, or is being deferred until a scheduled renovation/improvement takes place. DM is "maintenance that was not performed when it should have been; or when it was scheduled and, which therefore, was put off or delayed for a future period." Non-Maintenance includes activities that are often performed by trade employees, but do little to maintain or extend the life of facilities. Examples include construction of staging for special events, repair of furniture, and maintenance of underutilized equipment. Some of these activities cannot be avoided. If these services are expected, they must be figured into the annual workload and staffing planned accordingly.

3.8 EMERGENCY MAINTENANCE (EM)

Emergency Maintenance can sometimes vary by building, but consists of activities that stop or significantly reduce immediate damage to facilities and protect human or animal life; they restore essential services. Examples include failure to utility distribution systems, sudden structural failures, and other interruptions that adversely affect other building systems, such as those shown in Appendices A and B. Additionally, we may consider graffiti removal an emergency.

3.9 MAINTENANCE PREVENTION (MP)

Not to be confused with Preventive Maintenance above, Maintenance Prevention activities focus on changing the design of equipment components so they require less maintenance. This type of maintenance uses the data gathered from the previous techniques to design out maintenance requirements. During replacement of equipment and systems or in new construction, improvements to plant and facility equipment should be recommended for funding and implementation.

3.9.1 Predictive Maintenance

Predictive maintenance allows failures to be forecast through analysis of the equipment's condition. The analysis is generally conducted through some form of trending of a parameter, such as vibration, temperature, and flow. Preventive maintenance differs from predictive maintenance in that it focuses on manual tasks whereas predictive maintenance uses some form of technology. An extension of predictive maintenance is called condition-based maintenance, which is maintenance performed as it is needed, with the equipment monitored continually. Some plants have the production automation system directly connected to a computer system in order to monitor the equipment condition in a real-time mode. Any deviation from the standard normal range of tolerances will cause an alarm (or in some cases a repair order) to be generated automatically. This real-time trending allows for the maintenance to be performed in the most cost-effective manner. Condition-based maintenance is the optimum maintenance cost vs. equipment service level method available. The startup and installation cost can be very high, but represents the future trend for facility maintenance.

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SECTION 4. BUILDING MAINTENANCE STANDARDS

4.1 MAINTENANCE STANDARDS

The Department understands that approximately 90% of facility maintenance costs are linked directly to labor. So, we focus on delivering exceptional values in labor-saving products and strategies - maximizing human resources and allowing businesses to direct their efforts in more profitable directions. The following are the maintenance standards definitions for building, mechanical, electrical, plumbing, and architectural building systems, and industry standard funding requirements, excluding public utility **and custodial** costs.

Level A – Superior (> \$6.15. per s.f.)

- Equipment is maintained within design parameters at all times.
- This level of maintenance is inherently costly due to the daily attention required. Therefore, it should only be applied to specific significant buildings and systems.
- Each major system is inspected on a daily basis.
- Preventive maintenance is performed on time and constitutes more than 90% of all maintenance activities.
- Non-emergency breakdowns are addressed within 24 hours.
- This level is intended for portions of hospitals, such as operating and emergency rooms and high-tech, research-type facilities.
- Reactive maintenance is minimized and emergencies are infrequent and handled efficiently.
- Customer Satisfaction: High level.
- Response Time: Priority I Work Orders. Immediate.

Level B – Standard (\$5.00 - \$6.15 per s.f.)

- Recommended level based on professional engineering, architectural, and journeyman trade practices.
- Minimum life-cycle cost resulting in maximum return on investment of maintenance expenditures.
- All major systems are inspected on a weekly basis.
- Preventive maintenance constitutes more than 75% of all maintenance activities.
- Comfort control breakdowns responded to within one (1) working day.
- Level of maintenance satisfies all code and regulatory requirements.
- Preventive maintenance done slightly less than scheduled reactive maintenance required, and occasional emergencies caused by pump/cooling system failures, etc.
- Customer Satisfaction: Satisfied and usually complimentary.
- Response Time: Priority II and III Work Orders. One (1) week, or less.

Level C – Sub-Standard (\$4.10 - \$5.00 per s.f.)

- Reduced level of maintenance. Systems serviced less frequently, resulting in a greater risk of breakdowns.
- Premature failure of some systems resulting in increases in deferred maintenance funding requirements. Minimum life-cycle costs on major climate control systems only.
- Major climate control systems serviced on a regular basis.
- Preventive maintenance constitutes between 50%-75% of all maintenance activities.
- Individual room equipment and components are serviced on a breakdown basis only.
- Comfort control breakdowns responded to within three (3) working days.
- Buildings whose primary systems life-cycle will not be prolonged by implementing a preventive maintenance program due to irreparable damage, which has already occurred due to a lack of maintenance.

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- Reactive maintenance predominates, frequency of emergency occurrences cause reports to upper management.
- Customer Satisfaction: Accustomed to basic level of care with lack of pride in surroundings.
- Time: Priority III Work Orders. Two (2) months, or less.

Level D – Code Compliance Only (\$3.25 - \$4.10 per s.f.)

- Maintenance of all systems as per code and regulatory requirements. Including the new WCB Occupational Health & Safety Regulations.
- Premature failure of most systems resulting in increases in deferred maintenance funding requirements.
- All systems will be inspected a minimum of once per year. Client comfort systems will be serviced seasonally.
- Preventive maintenance constitutes between 25-50% of all maintenance activities.
- Significant portions of buildings without building systems for four to five work days due to failure of primary equipment.
- Buildings or assets that are not worth preserving and have been identified within the long term goals of the County.
- Too much time spent procuring parts and services due to increased number of emergencies.
- Reactionary with weekly complaints to upper management.
- Customer Satisfaction: Generally critical of cost, responsiveness, and quality.
- Response Time: Priority IV and V Works Orders. Partial maintenance in one (1) year, or less.

Level E – Life Safety Only (\$2.30 - \$3.25 per s.f.)

- Maintenance of essential life safety systems only as per specific regulations.
- Maximum life-cycle cost. Unpredictable, premature failure of most systems. Maximum deferred maintenance funding required to restore buildings that have been maintained at this level.
- Minimal to no inspections on most systems.
- Preventive maintenance constitutes 0-25% of all maintenance activities.
- Breakdown maintenance only on all systems.
- Large sections of entire building without ventilation.
- Many burnt out lights and potential poor power quality.
- Prolonged periods of primary equipment outages and resulting poor comfort control, HVAC system failure.
- Buildings not worth preserving, scheduled for demolition, or their systems are so basic that a lack of maintenance will not impact the ability to meet current health and safety requirements.
- Preventive maintenance not being performed due to more pressing problems.
- Reactive maintenance is a necessity. Good emergency response due to system failure skills gained.
- Customer Satisfaction: Consistent ridicule and mistrust of Division.
- Response Time: Priority V Work Orders. Service not available or funded unless directed by administration.

4.2 JANITORIAL AND CUSTODIAL STANDARDS

4.2.1. Custodial maintenance standards definitions

Level 1 – Superior (> \$4.00 per s.f.)

- Intended for corporate sites, donated buildings, or historical focal points.
- Interior finishes, floors, and base molding shine and/or are bright and like new. Colors are fresh.
- No build-up in corners or walls.
- All surfaces have a freshly cleaned appearance and have no accumulation of dust, dirt, marks, streaks, smudges, or fingerprints.
- Washroom and shower tile and fixtures gleam and are odor-free.
- Supplies are adequate.
- Trash containers are empty, clean, and odor-free.
- Exterior fixtures, walls, and windows are like new.

Level 2 – Orderly Tidiness (\$3.25 - \$4.00 per s.f.)

- Acceptable industry standard.
- Interior finishes, floors, and base moldings shine and/or are bright and clean.
- No build-up in corners, or along walls, but there can be up to two (2) days' worth of dust, dirt, stains or streaks.
- All surfaces are clean, but marks, dust, smudges and fingerprints, are noticeable with close observation.
- Washroom and shower tile and fixtures gleam and are odor-free.
- Supplies are adequate.
- Trash containers are empty, clean, and odor-free.
- Exterior fixtures, walls, windows are in good condition.

Level 3 – Casual Inattention (\$2.50 – 3.25 per s.f.)

- Staffing shortfall.
- Lower than normal expectations.
- Less than adequate funding; not totally unacceptable – yet to reach an unacceptable level of cleanliness.
- Floors are swept clean; but dirt, dust, and/or floor finishes in corners and along walls can be seen; minor leaks apparent.
- There are dull spots and/or matted carpet in walking lanes and steaks and splashes on base molding.
- Surfaces have obvious dust, dirt, marks, smudges, and fingerprints.
- Lamps all work and fixtures are clean.
- Trash containers are empty, clean, and odor-free.
- Interior/exterior aesthetics and finishes appear average.

Level 4 – Moderate Dinginess (\$1.75 - \$2.50 per s.f.)

- Significant staffing and scheduling problems.
- Areas becoming unacceptable.
- People begin to accept an environment lacking normal cleanliness.
- Floors are swept clean, but are dull, effects of leaks visible.
- Colors are dingy, obvious buildup of dust, dirt and/or floor finishes in corners and along walls.
- Molding is dull and contains streaks and splashes.
- Surfaces have conspicuous dust, dirt, smudges, fingerprints, and marks that are difficult to remove; exterior is rough looking and needs painting.

- Less than 5% of lamps burned out, fixtures are dingy.
- Trash containers have old trash, are stained and marked, and smell sour.

Level 5 – Un-Kept Neglect (<\$1.75 per s.f.)

- Poorest level of cleaning.
- “Just-in-Time” cleaning.
- Facility is always dirty, with cleaning accomplished at an unacceptable level; obvious neglect.
- Floors and carpets are dirty and have visible wear and/or pitting.
- Colors are faded and dingy and there is a conspicuous buildup of dirt; dust and/or floor finish in corners and along walls.
- Base molding is dirty.
- Stained and streaked; gum, stains, dirt, dust balls and trash are broadcast.
- Surfaces have major accumulations of dust, dirt, smudges and fingerprints, as well as damage.
- No major maintenance or cleaning done to exterior surfaces; air/water penetration evident with signs of accelerated deterioration.
- More than 5% of lamps burned out; fixtures are dirty with dust balls and flies; windows are inoperable.
- Trash containers overflow and are stained, marked and smell sour.

4.2.2. Green cleaning supplies

In 2010, the County committed to being environmentally friendly, using environmentally responsible products, green cleaning and sustainable practices. Our primary **Going Green** initiative goal is to help eliminate and/or reduce toxics that may adversely affect the health and wellness of the adults and children who may come in contact with the chemicals and processes used during cleaning everyday. Absent a compelling business argument and written approval from the County, all products used in the fulfillment of contracted janitorial services shall be environmentally safe and biodegradable.



Cleaning products listed as a part of the Environmental Preferable Purchasing (EPP) program, LEEDS O&M, the Environmental Protection Agency’s DfE Safer Product Labeling Program, Eco-friendly and/or green certified programs cleaning products will be utilized. Cleaners shall be non-toxic, products, shall be biodegradable and non-aerosol. In addition, undiluted disinfectants, sanitizers, carpet cleaners and floor care products must not be toxic to humans / aquatic life and must not contain any ingredients in concentrations above the applicable maximum contamination levels in drinking water, shall not adversely affect indoor air quality, shall exhibit a VOC limit of not greater than 0.1% or contain more than 0.5% by weight of total phosphorous. In addition, the County shall provide products avoid the use of provide information as to whether their products contain ingredients that may be identified as asthmagens (asthma-causing agents) such as monoethanolamine, toll or rosin, chlorhexidine, chloramines, etc.

4.3 UNIFORM SPACE STANDARDS

The current Space Standards utilized by the County were established by the Space Needs Study Final Report prepared by Probst Mason, Inc. and the Space Needs Task Force for the Board of County Commissioners dated July 18, 1994. The Study determined the current space needs, the personnel levels, and the space needs for the ten (10) year planning period through 2004. The following office space standards were developed after review of the Maryland Department of General Services, United States General Services Administration, and Seventh Judicial Circuit Court of Maryland Guidelines.

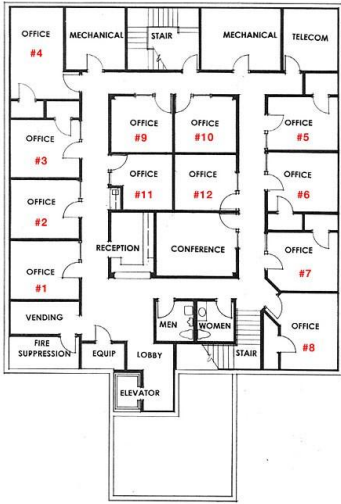


Table 4.3.1 OFFICE SPACE STANDARDS

<u>POSITION</u>	<u>NASF</u>
Judges, Jury Room	400 square feet
President of the Board of County Commissioners	250 square feet
County Administrator, Directors, Sheriff, Juvenile Master, State's Attorney, Superintendent of Schools	200 square feet
Deputy State's Attorney, SMRL Librarian	175 square feet
Division Managers, Asst. Superintendent, SMC Librarian	150 square feet
Librarians, Private Office Supervisors, Commissioners	125 square feet
Private Office Non-Supervisory Staff	100 square feet
Technical/ Professional Shared Office Engineers/Drafting Personnel (2-4 people)	80 square feet
Administrative Staff/Typists/Clerical	60 square feet
Conference Room(s) (per person, average)	25 square feet
Waiting/Reception Areas (per person, average attendance)	10 square feet
Circulation Factor (applied to total)	15%

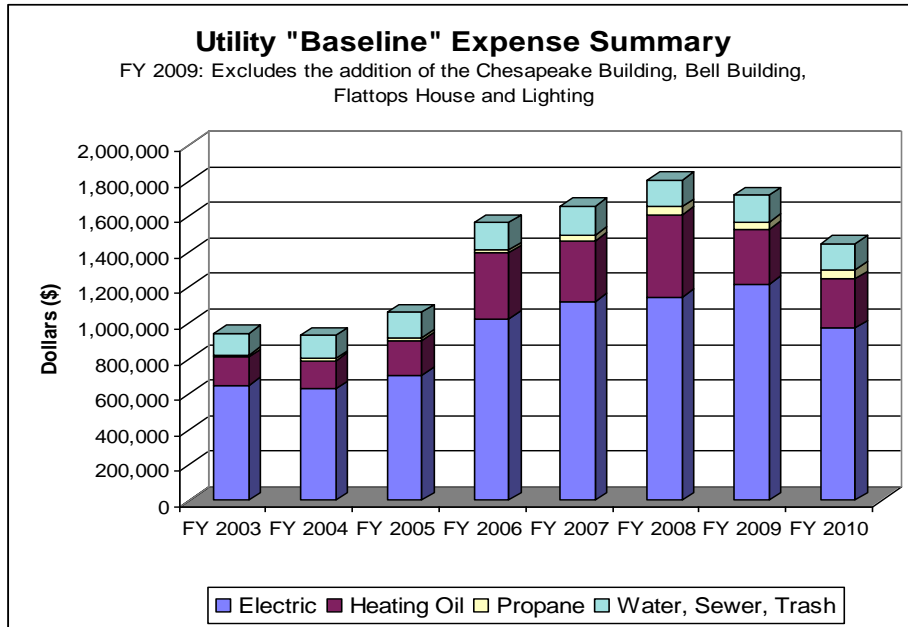
Notes:

1. All allocated areas include normal furniture requirements.
2. As a general rule, in order to convert from Net Assignable Square Footage (NASF) to Gross Square Footage (GSF), a minimum multiplier of 1.56 should be applied to NASF. This will also address efficiency (60-75%) and circulation (15-25%) requirements. GSF should be used to reflect construction costs associated with new facilities or building replacement.

4.4 ENERGY MANAGEMENT AND CONSERVATION STANDARDS

Public and staff awareness and continued energy conversation planning are needed to help offset public utility costs due to rising rates and usage. All County-maintained facilities are monitored by computer based facilities management systems. A significant challenge has been fiscally responding to Smeco rate increases from \$.0398 kwh in FY05 to \$.055 in July 2005, \$.0606 kwh in November 2005, \$.0749 kwh in FY 2006 to the current FY 2010 amount of \$.0985 for the first 8500 kwh. Facilities management systems provide:

- Electric, natural gas, heating oil, water, sewer, and trash disposal services tracking.
- Off-site (Central Office and Remote) monitoring of equipment and environmental conditions at each site to include monitoring of utility consumption through pulse-meters.
- Control of energy consuming processes (see Utility Consumption Report).
- Enhancement of maintenance routines by monitoring real time operation of equipment.
- Integration of fire and security systems into the facilities management operations.
- Implementation of programs to support biological threats.
- Installation of electronic ballast for lighting fixtures as the system standard.
- Early response to system failures or problems.



4.4.1 Occupant Comfort Zones

Because of high energy costs, Building Services has established **temperature** Comfort Zones for heating and cooling. In the winter, the set point for heating is **69** degrees (the standard acceptable temperature range is between 68 to 82 degrees). In the summer, the set point is **76** degrees (the standard acceptable temperature range is between 65 to 75 degrees). The typical cooling season begins on April 15 and ends October 15 each year. The heating system is deferred as long as is practical after October 15 and is terminated as soon as possible prior to April 15. In addition to thermal comfort, the **relative humidity**, for most applications, should be between 40% and 70%, with a 65% threshold to help prevent the growth of mold. The relative humidity Comfort Zone should not be lower than about **30%** (to prevent occupant discomforts such as dry eyes and throats, shrinking of wood flooring, and static electricity problems on carpet, and possible sick building syndrome symptoms) or higher than about **60%** in the *center of the room*. The 60% level is intended to keep the relative humidity from exceeding 70% at surfaces, such as walls and floors. The relative humidity at surfaces is typically higher than it is at the center of a room. When the relative humidity at surfaces is above 70%, mold growth can occur. To control microorganisms, it is best to keep relative humidity below 60% to control mold and 50% to control dust mites. The accuracy of the standard humidity range is 3/5th% to 3% (say 2%) over the established comfort zone. For libraries and archival materials, a stable temperature of no higher than 70 degrees and a relative humidity of between 30% and 60% is recommended.

4.4.2 Energy Audits

Good energy management begins with an energy audit. Effective management of energy-consuming systems can lead to significant cost and energy savings, as well as increased comfort, lower maintenance costs, and extended equipment life. A successful energy management program begins with a thorough energy audit.

The energy audit evaluates the efficiency of all building and process systems that use energy. The energy auditor starts at the utility meters, locating all energy sources coming into a facility. The auditor then identifies energy streams for each fuel, quantifies those energy streams into discrete functions, evaluates the efficiency of each of those functions, and identifies energy and cost savings opportunities. Audit activities, in general order, include:

- Identify all energy systems.
- Evaluate the condition of the systems.
- Analyze the impact of improvements to those systems.
- Write up an energy audit report.

The report documents the use and occupancy of the building and the condition of the building and building systems equipment. The report evaluates load data, building profiles, energy use index by building type and also recommends ways to improve efficiency through improvements in operation and maintenance items, and through installation of energy conservation measures. Audit levels in order of increasing complexity are:

Level 1 – Standard Walk-Through Audit. The walk-through audit is a tour of the facility to visually inspect each system. The walk-through includes an evaluation of energy consumption data to analyze energy use quantities and patterns, as well as to provide comparisons with industry averages, or benchmarks, of similar facilities. This is the least costly audit, but a Level 1 audit can yield a preliminary estimate of savings potential and a list of low-cost savings opportunities through improvements in operational and maintenance practices. The Level 1 audit information may be used for a more detailed audit later if the preliminary savings potential appears to warrant further auditing activity.

Level 2 – General Integrated Audit. The standard audit quantifies energy use and losses through a more detailed review and analysis of equipment, systems, operational characteristics, and on-site measurements and testing. Standard energy engineering calculations are used to analyze efficiencies and calculate energy and cost savings based on improvements and changes to each system. The standard audit will also include an economic analysis of recommended ECMs.

Level 3 – Investment Grade Audit. The Level 3 audit is the most expensive level of energy audit and is most often warranted for complex facilities or systems. The audit includes more detailed energy use by function and a more comprehensive evaluation of energy use patterns. Computer simulation software is used to predict building system performance and accounts for changes in weather and other conditions. The goal is to build a base for comparison that is consistent with the actual energy use of the facility. The auditor will then make changes to improve the efficiency of various systems and measure the effects compared to the baseline. This method also accounts for interactions between systems to help prevent overestimation of savings.

4.4.3 Conservation Measures

- **Immediate.** Immediate measures are those which can be performed at the present time requiring no additional funding or legislative support. Such measures may include increased senior management involvement, behavior modification of employees, or awareness/training, such as, turning off lights when leaving a room or turning down heaters when closing for the night; the elimination of unneeded appliances, such as hot plates or duplicate coffee pots; and keeping lighting fixtures,

filters, and heating and cooling coils clean. A detailed list of possible immediate conservation measures is included in **Appendix E**.

- **Short Term.** Short term measures are those which can be performed within the present fiscal year, requiring no funding in addition to the current budgets and/or legislative support. These measures may require more preparation than the immediate measures and may require the acquisition of energy efficient materials to replace existing items. Examples of these items may include replacing incandescent light bulbs with compact florescent lamps or reducing the wattage on bulbs when possible. Other possibilities include acquiring photocells to have lights turn on and off automatically; cleaning and providing for the periodic maintenance of filters, coils, and vents; and arranging for the recycling of reusable materials. A detailed list of possible short term conservation measures is included in **Appendix E**.

- **Long Term.** Long term measures are those which can not be accomplished within the present fiscal year and/or require additional funding or legislative support. These measures may require the acquisition of energy efficient materials; contracts for retrofitting; replacement of older or inefficient products; supplements to existing budgets; or additions or changes to statutes, regulations, policies, etc. Examples of these items may include: providing training for personnel in energy efficiency, the upgrade of computers and monitors to more recent energy efficient models, and upgrades to internal networks to allow for the reduction in the number of printers used within the office. A detailed list of possible long term conservation measures is included in **Appendix E**.

4.4.4 Sustainable Energy Initiative

The Governors' EmPOWER Maryland initiative aims to reduce state government energy consumption by **15 percent by 2015**. In addition to supporting this statewide initiative, both the organizations are and the BOE are committed to seeking new and innovative technologies in building renovations, maintenance and new construction that support cost-effective sustainable designs, reduces energy consumption, lowers carbon emissions and payback of initial capital cost.

LEED helps building owners and managers solve building problems, improve building performance, reduce environmental impacts, create healthier and more productive employee workspaces, and provide public recognition fro leadership in sustainability. By pursuing the LEEDS rating system, both a building's physical systems (equipment, design, land use, etc.) and the way the building is occupied and operated (waste management, temperature monitoring, commuting programs, etc.) can be captured and analyzed.

In calendar year 2010, a Sustainable Energy Initiative will be conducted to select a qualified consultant(s) for the purpose of obtaining U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED-EB) certification of existing County-maintained buildings under the Green Building Operations and Maintenance (O + M) system as shown in **Appendix H**. The selected consultant is expected to review the LEED rating system to assess credit potential, provide ENERGY STAR scoring prior to conducting the initial gap analyses, set target certification levels (Certified, Silver, Gold Platinum), assess what equipment will need upgrades, assign responsibility for credits and for writing green policies, recommend a capital budget program and timelines for recertification. Additional energy-related recommendations and energy consumption reduction initiatives related to the facilities and properties may also be requested.

4.5 RECOMMENDED LUMINANCE STANDARDS

Because of increasing energy costs, Building Services has adopted the following lighting standards as depicted in Table 4.5.1 after review of the recommendations provided by the Illuminating Engineering Society of North America. In 2005, a heavy duty light meter was purchased to assist building services personnel in periodically monitoring minimum lighting levels in office work spaces and non-office areas.

Table 4.5.1 Recommended Luminance Standards

Type of Activity	Luminance in Footcandles (fc)	Typical Applications
Public areas with dark surroundings	2 – 3 – 5	Unoccupied storage areas, night lighting of hallways
Simple orientation for short occupancy	5 – 7.5 – 10	Restaurant dining areas, inactive storage rooms, service elevators, stairways
Occasional, simple visual tasks	10 – 15 – 20	Auditoriums, passenger elevators, lobbies, corridors, pump island areas
Execution of visual tasks having high contrast or large size	20 – 30 – 50	Conference rooms, book stacks, active storage rooms, rough bench or machine work, simple inspections
Execution of visual tasks having medium contrast or small size	50 – 75 – 100	Mail sorting, reading poor copy, high contrast drafting, medium bench or machine work
Execution of visual tasks having low contrast or small size	100 – 150 – 200	Proofreading, low contrast drafting, difficult inspection
Execution of visual tasks having low contrast and small size for a long period of time	200 – 300 – 500	Very difficult assembly, inspection, or machine work
Execution of sustained and exacting visual tasks	500 – 750 – 1,000	Exacting assembly or inspection, extra-fine bench or machine work
Execution of special and exacting visual tasks having low contrast and small size	1,000 – 1,500 – 2,000	Surgical procedures

Source: Illuminating Engineering Society of North America

RECOMMENDED LUMINANCE STANDARDS (Cont'd.)

Application	Footcandles (fc)
Building Exteriors	
Entrances (active)	5
Entrances (inactive)	1
Critical Areas	5
Building & Monuments	
Bright Surroundings, Light Surfaces	15
Bright Surroundings, Dark Surfaces	50
Dark Surroundings, Light Surfaces	5
Dark Surroundings, Dark Surfaces	20
Bulletin Boards & Signs	
Bright Surroundings, Light Surfaces	50
Bright Surroundings, Dark Surfaces	100
Dark Surroundings, Light Surfaces	20
Dark Surroundings, Dark Surfaces	50
Dark Surroundings, Dark Surfaces	20

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Loading Docks	
Parking Facilities	0.5
Open, Low Activity	2
Open, High Activity	5
Covered, General Parking	10
Covered Ramps	50
Covered, Entrances	
Roadways	1
Storage Yards	
Active	20
Inactive	1
Walkways	0.5
General	4.0
Stairways	

Source: Illuminating Engineering Society of North America

4.6 STANDARDS FOR NAMING AND DEDICATING FACILITIES

1. It is the responsibility of the Board to adopt official names for County facilities. In fulfilling this responsibility, the Board will make every effort to respect community preferences.
2. When a new facility project is initiated, the Board will establish a temporary, generic name to designate the site or building for planning and budgetary purposes. As a new facility nears completion, the Board shall develop a listing of preferably up to four (4) names. The County Administrator will establish a process through which interested groups in the community, County personnel, board and committee members that the facility will serve shall be charged with the responsibility of recommending, in priority order, its preference from among the listing of names provided by the Board and any additional names recommended by the community.
3. It is preferred that County facilities be named for deceased, distinguished persons who have made an outstanding contribution to the community, county, state, or nation. The Board will give strong consideration to names of women and minorities so that these are equitably represented among County facility names.
4. Geographic names may also be considered for new facilities. These names should be clearly identifying, widely known, and recognized.
5. Although the Board will consider carefully community recommendations for facility names, the final responsibility for officially naming a County facility rests with the Board.
6. The Board welcomes suggestions for facility names on an on-going basis. These names will be kept on file by the County and used as reference.
7. When the use of a County facility changes and it no longer houses the original program or function, the Board may consider changing the name of the facility, only if the proposed name has special significance.
8. If there is strong interest within the community, the Board may consider petitions to name or rename existing County facilities. If the Board decides to proceed with a re-naming, the Board will follow the procedures outlined in Section A.2.
9. If there is strong interest within the community, petitions may be considered for naming or renaming a portion of a County facility (i.e., floor, room, or wing) including Recreation and Parks' facilities. The responsibility for naming or re-naming a portion of a County facility will rest with the Board, or their designee, after careful consideration of community input. Petitions received to name or re-name a portion of a County facility to generate financial gain are prohibited unless expressly approved by the Board.

4.6.1 Names on Dedication Plaques

In keeping with the practice to recognize elected officials and others for their efforts and public service in providing new and/or improved facilities to the public, the Board of County Commissioners will have 18" wide x 24" tall (minimum size) bronze Dedication Plaques installed on new construction projects. The names of persons to be included on the plaques should be identified at the time of substantial completion of the project. For existing facilities, there is no specific timeframe required. The plaques will provide the following information:

1. Name of Facility / Building (5/8" lettering in caps).
2. County Seal centered on plaque (5" diameter).

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3. BOARD OF ST. MARY'S COUNTY COMMISSIONERS (1/2" lettering in caps).
4. Names of County Commissioners at the time that the project is dedicated, or was substantially completed (1/2" lettering lower case).
 - President (centered)
 - Members (two rows / columns in alphabetical order)
5. Name of County Administrator, Board of Trustees, Board of Directors (7/16" if applicable).
6. ARCHITECT (all caps) with name of Architect (lower case lettering) centered below, if applicable (3/8" lettering).
7. CONTRACTOR (all caps) with name of Contractor (lower case lettering) centered below, if applicable (3/8" lettering).
8. CONSTRUCTION MANAGEMENT (all caps) with name of construction management firm (lower case lettering), if applicable (3/8" lettering).
8. ST. MARY'S COUNTY (name of responsible Department) in caps with name of Director (lower case) responsible for coordinating the project (3/8" lettering). Director name is optional.
9. Construction completion (month and year in caps), or date of dedication (3/8" lettering).

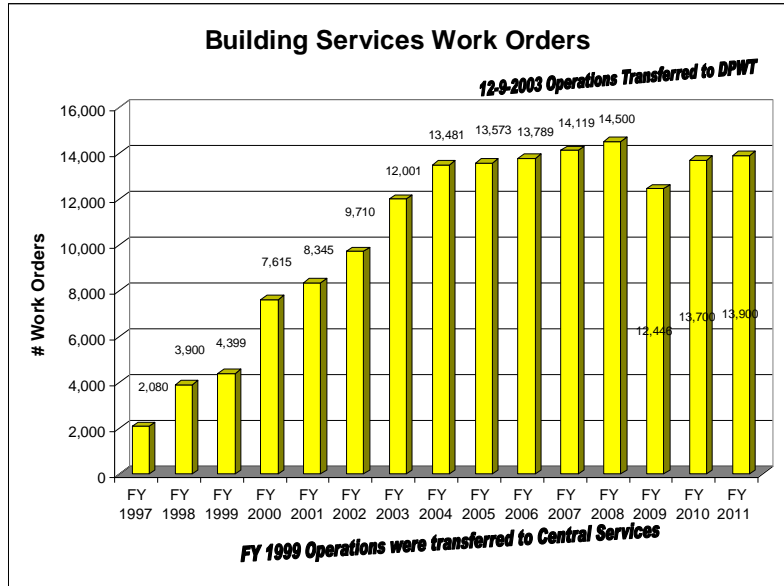
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SECTION 5. WORK ORDERS

5.1 WORK ORDER REQUEST PROCEDURES

The responsibility of the Building Services Division is to maintain and repair existing buildings and grounds belonging to St. Mary's County Government. The Division of Building Services provides emergency services, minor routine repairs, custodial services, and minor construction for 90 County Government maintained facilities (52 major, 52 minor and 9 incidental facilities) ranging from multi-story office buildings and live-in facilities, to "Welcome" signs and bus shelters, along with generators, elevators, 911 tower sites and sidewalks. Included in the services provided are climate control (HVAC), electrical, mechanical, plumbing, carpentry, roofing and painting. The information below is designed to provide guidance to County and State personnel in St. Mary's County regarding Building Services responsibilities, priorities, and response time.



A Work Request is submitted by facility users or employees and is used as a work approval, scheduling cost control, and time recording system. The purpose of the Work Request is to implement work requirements made by each facility to enable the supervisory staff to direct and schedule workloads and to enable maintenance to implement emergency actions in the shortest possible time. There is a specific contact person for each facility shown on the **Facilities Directory (Appendix C)**.

The Manager of the Division plans and assigns maintenance personnel to tasks in accordance with established priorities utilizing foremen for quality assurance. On July 1, 2004, the following work order request procedures were adopted, with our primary goal to complete 85% of all service calls within two (2) weeks, but may vary due to seasonal or unforeseen events.

5.1.1 Points of Contact (POC)

Primary Points of Contact (POC) and an alternate are designated for each facility and are shown on a **Facility Directory (Appendix C)**. These points of contact are responsible for screening all work orders for their assigned buildings. Work Orders from personnel other than the POC will not be accepted. This is done as a preventative measure (i.e., if **one** individual finds the room temperature too hot or cold, the POC needs to determine if a problem exists with the equipment, or if the condition is an isolated or perceived problem with the individual). We do understand, however, that the POC may not be at work and that emergencies do arise, which will require that someone other than the POC call the emergency in; and if deemed necessary, we will respond. As such, an alternate(s) needs to be identified to the Building Services Division by the Department/Agency. Our primary purpose and goal is to serve the employees within the County-maintained facilities and ensure their safety and comfortable working conditions.

5.1.2 Work Orders

Work Orders will be issued for calls requiring emergency repair, custodial support, outside contractors, repairs to capital equipment, all preventive and predictive maintenance, or change in use. Any request for facility modification, renovation, or change in use also requires a Work Order.

During the months of April-May and September-October, Building Services maintenance personnel expend a significant amount of time preparing the physical plant at the many facilities for the upcoming summer or winter season. During these months, responses to non-emergency work orders may be delayed

5.1.3 Emergency Work Orders

In general, Emergency Work Orders include any disaster, unusual occurrence, utility malfunction, or equipment failure, etc. shall be **phoned** in to the Building Services Division at 301-475-4200, ext. 1150, between the hours of 7:00 a.m.-3:30 p.m. The after-hours emergency procedures are attached for use after-hours, on weekends and holidays. **Unless phone contact is made with our Senior Office Specialist for emergencies during working hours, we cannot guarantee that the work requested will be acted upon.** Snow removal and ice control is handled in accordance with the Operational Plan attached as **Appendix H**.

5.1.4 Non-Emergency Work Orders

The POC will enter the Work Order (Non-Emergency) into the Work Order/Facilities Management module in H.T.E. Outlying buildings, and the State Office Building, which do not have access to H.T.E., are required to fill out an on-line Work Order (**Appendix D**) and forward to Building Services via the County's metro-mail system. Points of contact (POC) must be used to input or call in work orders to prevent multiple work orders and also to ensure that the work order is valid. Once a Work Order is entered into the H.T.E. system, **Do Not Enter** another work order for the same request. This causes staff to be sent to the site more than once because each entry generates a separate work order. If you are concerned about the status of an open work order, please call 475-4200, ext. 1150, and have your work order number and date of the work order available so that staff can check on the status. **Do Not Email staff or phone any other staff members for work orders.**

5.2 MAINTENANCE PRIORITIES

An order of priority for all repairs is established by the Manager of Building Services, or his staff, giving highest priority to items that affect the health and safety of the occupants of the building. In 2004, an After Hours Call-Out/Emergency Policy was developed for all County-maintained facilities (**Appendix A**), and the Adult Detention Center (**Appendix B**). The following levels were also adopted in 2004: Priority 1-Emergency; Priority II-Urgent; Priority III-Routine; and Priority IV-Minor; and Priority V-Other. All work orders will be prioritized by the Building Services Division according to the nature of the problem, as follows:

5.2.1 Priority I – EMERGENCY: EMERGENCY Work Orders take priority over all other work and require immediate action to usually address situations that present imminent or immediate danger to life, health, safety, security, or operational damage to buildings, equipment, or property. Evaluation and response time during working hours is within 2 hours and within 8 hours during non-duty hours, with completion normally within 24 hours. Work not completed during normal working hours, which requires overtime or night shift to complete, may also be considered Priority 1. Priority I emergencies include, but are not limited to the following:

- Smoke or natural gas smell in facility (Control Center should be contacted first);
- A serious and obvious threat to an employee's health, welfare, or safety;
- A serious and obvious threat to the operation of a County-maintained facility;
- Loss of power throughout entire facility;
- Loss of water throughout entire facility;
- Fire or burglar alarm sounding;
- Elevator break-down, particularly if there is an individual trapped;
- Security issues such as unable to secure facility (i.e., facility cannot be locked, windows broken etc.);
- Air conditioning problems if temperature inside **exceeds 78** degrees (holiday setback);
- Heating problems if temperature inside is **below 65** degrees, except for senior centers;
- Hazardous material spills or leaks;

- Major water leaks that cannot be contained by placing a container under the leak for a 24 hour period;
- Sewer/drainage problems: Overflowing toilets, ruptured pipes, and sewer back-ups;
- Exposed electrical wires;
- Stopped-up toilets when there is only one toilet in the facility;
- Fire sprinkler problems;
- Runway lighting;
- Custodial "emergencies";
- Icy sidewalks, entrances, etc; and
- Passengers trapped in elevators.

5.2.2 Priority II - URGENT: Urgent Work Orders are unscheduled and reactive, and considered to pose a threat of personal injury, equipment damage, or serious disruption of service, but are not considered emergencies. Urgent Work Orders may also include responses to safety deficiency and regulatory violations. These will be completed within one (1) week, or 5-7 days, conditions permitting. Priority II Work Orders include, but are not limited to, the following:

- Water running continuously;
- Stopped up toilet/sink (when there is more than one facility available);
- Shower repairs (when more than one shower is available);
- Minor roof leaks;
- Heating when **inside temperature is below 69 degrees** (normal thermostat setting);
- Air conditioning concerns when **inside temperature is above 76 degrees** (for > 4 hours);
- Bulbs burned out;
- Drinking fountain repair;
- Insect/rodent control;
- Nuisance conditions that do not require extensive work, but which, if not remedied, would reflect poorly on the facility (i.e., paint, graffiti, etc.); and
- Conditions that could become a safety or health hazard with more use or stress (loose handrail, loose door knob, damaged stair tread, cracked door glass).

5.2.3 Priority III - ROUTINE: Routine, preventive or scheduled maintenance-related, Work Orders are for tasks that do not pose a threat to life, property or a serious disruption to the operation of County facilities and do not require immediate corrective action. These requests are entered into the H.T.E. system and processed based on the priority given them by Building Services, and in the order in which they are received. Small repairs are normally done within 30-45 days after being entered into H.T.E. or received by Building Services; however, availability of materials, budget constraints, and unforeseen problems (snow, ice, manpower, or HVAC issues) could delay completion. **Jobs related to special events (i.e. setting up chairs, tables, etc.) require a minimum of five (5) working days advanced notice (which is strictly enforced) prior to the event date so that manpower can be scheduled accordingly.** Priority III Work Orders take precedence over Priority IV Work Orders and include, but are not limited to, the following:

- Hanging bulletin boards, pictures, bookshelves, blinds, key cabinets etc;
- Moving furniture, boxes, etc;
- Windows not functioning;
- Replacement/repair of ceiling tiles;
- Running cable;
- Sound system repairs;
- Exterior bulb/ballast replacement;
- Carpet, tile repairs;
- Furniture repairs;
- Installation of soap, paper towel dispensers;
- Custodial issues (window cleaning, picture hanging, wall cleaning, etc.); and
- Change lock.

5.2.4 Priority IV - MINOR: Other Work Order requests are requests that are of such magnitude and complexity that is more effective to develop a scope of work for the job, procure materials, schedule the work in advance, and coordinate personnel and/or outside contractors/vendors. Priority IV Work Orders may not be accomplished due to manpower and/or funding limit actions, but may normally be expected to be completed within 45-60 days. Deferred or seasonally programmed work is often considered Priority IV. **Priority IV Work Orders must be included in the approved or current Fiscal Year Operating Budget request for the Building Services Division.**

5.2.5 Priority V – OTHER: Minor construction work beyond maintenance and repair includes space and efficiency enhancements, installation of shelving, interior partitions, new lighting, painting, etc. that is not budgeted, but generally within the capabilities of the maintenance staff. For larger projects, scheduling will occur following funding approval by the administration, or following the identification of funds by the requesting Department or Agency. If directed to re-prioritize with existing operational monies, the respective project is considered a Priority V Work Order.

5.3 WORK ORDER BACKLOG

A maintenance work backlog is the amount of work currently identified as needing to be performed. This amount of work is measured in hours. Many experts believe that managing the backlog (work immediately available to be done including pending) might be one of the most important jobs of maintenance leadership. The amount of backlog should not fall too low (1 week per person) or too high (3+ weeks). No backlog usually indicates over manning and more then ten (10) days backlog indicates overtime is needed.

If people see the backlog running out they tend to slow down to avoid layoff. If the backlog is too large then user's routine work doesn't get done quickly or reliably. Increased backlog is one reason to authorize contracting or overtime. When calculating the backlog, it is necessary not only to know the hours of maintenance work needed, but also to understand current work force capacity. The formula for calculating backlog is as follows:

$$\text{Backlog} = \text{identified work (in hours)} \div \text{craft capacity per week (in hours)}.$$

The optimum range for work order backlog is between two-to-four-weeks of work. If the backlog begins to increase or trend above **four (4)** weeks, then additional resources should be added.

5.4 PROJECT CATEGORIES

From a project management standpoint, Building Services groups projects into the following four (4) categories:

-- **Incidental Projects**

Projects estimated to cost at or below \$10,000; such as small space modifications.

-- **Minor Projects**

Projects with an approved budget of between \$10,000 and \$49,999, with no purchase order amount greater than \$25,000.

-- **Intermediate Projects**

Projects with an approved budget of between \$50,000 and \$150,000.

-- **Major Projects**

Projects with an approved budget, which exceeds \$150,000.

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SECTION 6. BUILDING SAFETY INSPECTION PROGRAM (BSIP)

Effective September 1, 2008, a formal Building Inspection Safety Inspection Program (BSIP) was established through the collaborative efforts of the DPW&T Building Services Division, Human Resources Risk Manager, Local Government Insurance Trust, and the Safety Committee during March 2008. This Program is one of several workplace initiatives that implement the health and safety policy for all County maintained/insured facilities. ***The BSIP is a system for identifying and evaluating workplace hazards, including scheduled periodic inspections to identify unsafe conditions and unsafe work practices.*** The goal of the BSIP is to improve safety conditions and prevent possible injuries by identifying and eliminating both actual and potential hazards. In addition, the inspection reports are used to monitor standards and procedures and recommend positive changes to the workplace.

The process of performing routine and safety inspections of all of our facilities includes a physical walk-through, photographs, electromagnetic readings, temperature / humidity readings, tank inspections and insurance, follow-ups to LGIT observations, occupancy loading coordination with the Fire Marshall, smoking receptacle location evaluation, general preventative maintenance review, etc. These inspections and observations are un-announced, but our staff will identify themselves as well as the purpose of the inspection.

6.1 PURPOSE

Inspections are used to detect and eliminate any actual or potential hazards that could lead to accidents or incidents. St. Mary's County Government has the responsibility to provide a healthy and safe workplace. Coordinating the BSIP includes a physical walk-through, photographs, electromagnetic readings, temperature/humidity readings, tank inspections, insurance verification follow-ups to LGIT observations, occupancy loading coordination with the Fire Marshal, smoking receptacle location evaluation, and an overall general preventive maintenance review. Safety inspections are intended to raise awareness of safety, detect unsafe conditions, deficiencies, and/or unsafe practices and to make recommendations for corrective or appropriate remedial action(s).

6.2 FREQUENCY

- 6.2.1 Building Safety Inspections should be performed at least once per calendar year. These inspections may be unannounced, but Building Services staff will identify themselves and the purpose of the inspection.
- 6.2.2 The Safety Inspection Checklist (**Exhibit A**) will be used to document any findings. OSHA standards adopted from the Code of Federal Regulations (CFR) were used as a guideline for the development of the Checklist.
- 6.2.3 Inspections by outside agencies such as OSHA, MOSHA, RCM&D, LGIT, SISCO, Safety Committee, or the Office of the State Fire Marshal may also be conducted at their discretion, or upon request from Building Services (Department of Public Works & Transportation) or the Risk Manager (Human Resources).
- 6.2.4 The Risk Manager will perform sufficient follow-up to ensure critical and immediate, and possibly even high risk, concerns have been addressed.
- 6.2.5 Periodic inspections such as those described in Section 10 (Informal, Formal and Special) may also be conducted for routine and follow-up purposes.

6.3 RESPONSIBILITIES

- 6.3.1 Department Heads, Managers, and Supervisors are responsible to assign a Point of Contact (POC) to help Building Services and Risk Management implement the BSIP.
- 6.3.2 Should more than one (1) Department occupy space in a building, one or more Safety Inspection Checklists and Reports may be generated.

6.3.4 The DPW&T Building Services Division shall be designated as the central entity responsible for performing the annual inspections described by this Policy.

6.3.5 Employees are encouraged to report any alleged, unsafe condition(s) and/or practice(s) that are observed immediately to their Supervisor / POC, who should contact either Building Services or the Risk Manager.

6.4 FINDINGS

- All findings should be noted on the Safety Inspection Checklist (**Exhibit A**).
- The final Facility / Workplace Corrective Action Report (**Exhibit B**) should contain a sequential presentation of the findings and a written narrative on how to carry out the recommendations.
- Copies (i.e. hard copy and/ or CDs) of all Building Inspection Checklists and Report forms and digital photographs will be forwarded by Building Services to the Department of Human Resources, Risk Manager, for distribution to the assigned building representatives (POCs).
- Distribution shall be by memorandum and will advise the POC(s) that compliance with the recommendations will reduce the loss exposure and loss severity.
- The Safety Inspection Checklists and Reports shall be retained for a minimum of three (3) year after the inspection to ensure that all corrective action(s) have been performed.

6.5 HAZARD RISK ASSESSMENT

- This process examines the identified workplace risks and threats to both people and property based on the frequency and severity (how likely it is to happen and how bad it would be if it happened).
- Each hazardous event or exposure is ranked according to a Risk Assessment Matrix (see Section 8). The current Risk Assessment Matrix was prepared by SISCO and specifically designed for use by the Building Services Division.
- The matrix provides a systematic method for assigning a hazard level to a failure event based on the potential severity and frequency of the even occurrence.

6.6 SEVERITY CLASSIFICATON & RESPONSE TIME

The hazard level consists of one letter and one number. The letter classification represents the severity of the exposure / event.

A - Critical. Critical is defined as any hazardous condition, practice or exposure that may result in a severe or disabling injury, hospitalization, death and/or major property loss, or irreversible environmental damage to any structure, equipment or material. The total loss may exceed \$50,000. Critical hazard conditions must be addressed immediately upon notification.

B - Immediate. Immediate is defined as any hazardous condition, practice or exposure that may result in a serious injury including hospitalization of one or more nights (but not life threatening) and/or serious property loss or environmental damage to any structure, equipment or material. The total loss shall not exceed \$50,000. Immediate hazard conditions must be addressed within 0-30 days.

C - High. High is defined as any condition, practice or exposure that may result in a lost time work injury requiring medical attention and including first aid treatment (but not requiring hospitalization of one or more nights) and/or property loss or environmental damage to structure, equipment or material. The total loss shall not exceed \$10,000. High hazard conditions must be addressed within 0-60 days.

D - Medium. Medium is defined as any condition, practice, or exposure that may result in possible minor injury up to first aid treatment (no lost time work injuries). This classification may result in minimal property loss or environmental damage to structure, equipment, or material. The total loss shall not exceed \$500. Medium hazard conditions must be addressed within 0-6 months.

E - Desirable. Desirable is defined as any condition, practice, or exposure that in itself does not pose a treat to life or property, but is best practice for the industry. There would be no potential injuries and/or property loss or environmental damage to structure, equipment, or material. There should not be any lost dollars. Desirable hazard conditions must be addressed within 0-12 months.

6.7 FREQUENCY CLASSIFICATION

The number of the hazard level represents the Frequency of Occurrence. The numbers represent (1) Frequent; (2) Probable; (3) Occasional; (4) Remote; and (5) Improbable.

6.8 CRITICALITY / SEVERITY CATEGORIES

The severity and frequency of each identified hazard or threat will dictate the time frame that each item must be addressed. Risk categories enable Department Heads, Supervisors and building leaders the ability to differentiate credible high-hazard threats that may result in loss of life and property from less probable risks. Table 6.8.1 Risk Assessment Matrix is intended to: clearly and accurately prioritize deficiencies; focus first on serious and imminent hazards; set priority for correcting the deficiencies; and set reasonable dates for correction.

Table 6.8.1 Risk Assessment Matrix

Severity of Occurrence	Frequency of Occurrence				
	1 - Frequent	2 - Probable	3 - Occasional	4 - Remote	5 - Improbable
A					
Critical	A - 1	A - 2	A - 3	A - 4	A - 5
B					
Immediate	B - 1	B - 2	B - 3	B - 4	B - 5
C					
High	C - 1	C - 2	C - 3	C - 4	C - 5
D					
Medium	D - 1	D - 2	D - 3	D - 4	D - 5
E					
Desirable	E - 1	E - 2	E - 3	E - 4	E - 5

- Critical Response: 0 - 0 days
- Immediate Response: 0 - 30 days
- High Response: 0 - 60 days
- Medium Response: 0 - 6 months
- Desirable Response: 0 - 12 months

<u>Ranking</u>	<u>Effect</u>	<u>Comment</u>
1	None	No reason to expect failure to have any effect on safety, health, environment, or mission.
2	Very Low	Minor disruption to facility function. Repair to failure can be accomplished during trouble call.
3	Low	Minor disruption to facility function. Repair to failure may be longer than trouble call but does not delay mission.
4	Low to Moderate	Moderate disruption to facility function. Some portion of mission may need to be reworked or process delayed.
5	Moderate	Moderate disruption to facility function. 100% of mission may need to be reworked or process delayed.
6	Moderate to High	Moderate disruption to facility function. Some portion of mission is lost.

		Moderate delay in restoring function.
7	High	High disruption to facility function. Some portion of mission is lost. Significant delay in restoring function.
8	Very High	Very high disruption to facility function. All of mission is lost. Significant delay in restoring function.
9	Hazard	Potential safety, health, or environmental issue. Failure will occur with warning.
10	Hazard	Potential safety, health, or environmental issue. Failure will occur without warning.

6.9 CORRECTIVE ACTIONS

- Corrective actions for those recommendations involving life safety issues or present fire loss potential should be attended to first.



- The guidelines listed in Section 11 and all report recommendations are based solely from a loss control perspective and are not meant to be a substitute for legal advice.
- A copy of the findings will be forwarded to the appropriate Supervisor, Manager, Department Head or designated Point of Contact (POC) by the Human Resources Risk Manager in accordance with Section 4.
- The suggested corrective action(s) on the Building Inspection Checklists and Reports will accompany the notice of deficiencies. These may include temporary, as well as long-term solutions.
- POCs shall record the specific corrective action(s) taken or planned, including the dates corrections were made and/or scheduled on the respective Facility / Workplace Corrective Action Report (**Exhibit B**).
- If the corrective action required incurs costs not originally budgeted, the respective Department(s) or Building Services Division shall arrange for capital or operating budgeting depending on the nature and source of the unsafe condition(s). Building Services may contract out all compliance actions for billing to the respective departments/agencies where the corrective action(s) have not been performed to help instill a sense of accountability.
- If correction cannot be handled in a timely manner, the following measures will be taken by the Risk Manager in order to protect employees: work procedure(s) are changed; machine(s) are taken out of service; operation(s) will be stopped; and any other action(s) will be taken to protect employees.

6.10 TYPES OF SAFETY INSPECTIONS

6.10.1 Informal Inspections

Informal Inspections shall be performed on a continuous basis. Building Services staff will conduct informal inspections when they visit a worksite as a matter of routine. Supervisors will routinely conduct Informal Inspections in the workplace and discuss the inspection process during regularly scheduled safety meetings with the Building Service Manager.

In the course of normal daily activities, Inspectors who in the normal course of inspection find empty extinguishers, leaking sprinkler heads/valves, broken smoke/heat detectors, etc., shall report same to Building Services personnel immediately for repair or replacement. If a possible safety condition is discovered by an employee, it should be reported.

Informal inspections can be conducted with minimum documentation, but any and all deficiencies, no matter how minor, must be documented along with the steps taken to correct the situation.

6.10.2 Formal Inspections

Formal Inspections require a walk-through of a facility or worksite for the purpose of identifying unsafe conditions and/or acts. Formal Inspections must be documented (**Exhibit A**) and are usually performed prior to January 1st each year.

Although these inspections may be unannounced, they shall be conducted at times and in a manner that will minimize disruptions of scheduled work. Formal Inspections **must** be conducted at **all fixed worksites** whenever conditions warrant, **but not less often than once a year**. Fixed work sites include all County owned, maintained, and/or leased facilities. Supervisor and employees are expected to cooperate with the Building Services Manager or facility personnel during safety inspections.

6.10.3 Special Inspections

Special Inspections are performed in response to non-routine reports of alleged unsafe act(s) and/or condition(s) as a follow-up (i.e. quarterly) to the initial annual Safety Inspection, or to evaluate new hazards or risks that may be associated with new processes or equipment. Inspection response time to these special circumstances shall be based upon the severity of the identified hazard. A Special Inspection may also be conducted in conjunction with an accident investigation and includes all Maryland Commission on Correctional Standards compliance inspections conducted at the Adult Detention Center.

Full service health and safety surveys are currently conducted at the St. Mary's County Detention Center by the State of Maryland Department of Labor, Licensing and Regulation through MOSH Consulting Services. Instances of observed hazards and recommended corrective actions (with corresponding compliance deadlines) are documented annually in a *Report on Correction of Hazards* and include a full *List of Hazards*.

Special Inspections are also conducted by the Risk Manager, Building Services Manager, members of the Office of the Fire Marshal, or the County's insurance carrier upon request and in cooperation with local supervisors and employees. Special Inspections **must** be documented. The documentation must include specific identification of observed hazards and the dates by which the hazards will be corrected. Follow-up procedures must be performed to assure that the identified hazards are mitigated in a timely manner.

6.11 GENERAL GUIDELINES

The following was prepared as a part of the Local Government Insurance Trust (LGIT) Corrective Assessment Recommendation provided by Mr. Richard A. Furst, Senior Loss Control Manager.

Chemical Storage. Including cleaning products stored in the open and on shelves. Chemicals must be stored in non-flammable cabinets or in vented and locked closets. Often Material Safety Data Sheets / MSDS's were not accessible to employees for each chemical.

Blocking of Fire Extinguishers, Fire Alarm Pull Stations, Horns, Strobes, Emergency Exits, Hallways, Corridors and Electric Panels. A clearance of no less than 36 inches in front of and to each side must be maintained at all times. Emergency evacuation routes – hallways and corridors leading to emergency exists - must be clear of all furniture, equipment and storage.

Appliances. Microwaves, coffee pots, toaster/ovens, refrigerators, etc. without required 3-prong plugs, often plugged into outlet strips and extension cords in the workplace. Only appliances with 3-prong plugs are acceptable in the workplace. (Not to mention the additional electric power used by these appliances).

Extension Cords, Electric Cords and Power Strips. Used improperly or using the wrong type. Permanent use of extension cords or power strips is not allowed in the workplace. (Surge protected power strips are acceptable to power Computer / IT equipment only).

Computer Cables and Electric Cords. Multiple cables/cords found haphazardly running under desks, across floors, down walls must use strips or wire ties to secure excess wires together and out of immediate walking/working areas.

American's with Disabilities Act / ADA Compliance. Many offices and work areas are not maintaining minimum 34-36 inch clearance between furniture, cabinets, and equipment.

Clutter and Trash. Areas found with excessive clutter and trash, often shoved under desks and counters. Work areas should be clean and free from accumulation of trash, excessive boxes, and other flammable materials.

Cup and Candle Warmers. Offices were found to still be using these extremely hazardous items, which pose significant danger. (Open flame candles are also not acceptable in the workplace).

Gasoline and Oil Storage in Buildings or Work Areas. Increases explosive or fire hazard for the work being performed.

Electrical Space Heaters. Space heaters found throughout offices and under desks, which are left plugged-in after hours pose a significant fire hazard, and the electric cords are a trip/fall hazard.

6.12 REPRISAL

State law prohibits reprisal or taking disciplinary action against any employee that identified and/or reported an unsafe condition, act or practice in connection with any work activity. Employees should be informed of any action(s) taken to correct any reported unsafe condition, act or practice.

6.13 STANDARDS

Standards used in the preparation of the BSIP include, but are not limited to the following:

- American with Disabilities Act / ADA Compliance
- Life Safety Code NFPA-101-2008
- National Electric Code NFPA-70-2008
- National Fire Alarm Code NFPA-72-2007
- Code of Motor Fuel, Dispensing Facilities and Repair Garage NFPA-30-2008
- Flammable and Combustible Liquids Code NFPA-30
- Code for the Manufacturer and Storage of Aerosol Products NFPA-30B-2007
- NFPA 96: Standards for Ventilation Control and Fire Protection of Commercial Cooking Equipment
- NFPA 51: Standard for Fire Protection During Welding, Cutting and Other Hot Work
- NFPA 55: Standard for the Storage, Use and Handling of Compressed Gases...Containers, Cylinders, and Tanks
- Federal OSHA-MOSHA Regulations
 - 29CFR-1910
 - 2929CFR-1926
 - 2929CFR-1903
 - 2929CFR-1904
 - OSHA Compliance Directive



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- NIOSH Guide & Chemical Hazards
 - EPA Regulations
 - Maryland Department of the Environment (MDE)
 - St. Mary's County Safety Program
 - St. Mary's County Codes

FACILITY SAFETY INSPECTON CHECKLIST EXHIBIT A

FACILITY INSPECTION INFORMATION	1. LOCATON / NAME OF FACILITY INSPECTED:		2. FACILITY ID NUMBER:				
	3. INSPECTOR'S NAME:	5. RATING: A = CRITICAL B = IMMEDIATE ACTION C = HIGH PRIORITY D = MEDIUM PRIORITY E = DESIRED	6. RESPONSE TME: A = Critical B = 0-30 days C = 0-60 days D = 0-6 months E = 0-12 months				
	4. POINT OF CONTACT (POC):						
SECTION I. BUILDING & GROUNDS			Yes	No	RATING	N/A	
(EXTERIOR)							
GENERAL	1. Is the 911 Building Address clearly marked and visible?						
	2. Is the building accessible in an emergency?						
	3. Are all fire hydrants accessible, unobstructed and conspicuously painted?						
	4. Are Fire Department Siamese connections unobstructed, marked, caps present and in good repair?						
	5. Are exterior doors free from obstructions and doors open outward?						
	6. Is perimeter and security fencing in good condition?						
	7. Are all gates, exterior and parking lot lighting operating properly?						
	8. Are all walkways / stairs in good repair, free of tripping hazards with shrubs and trees trimmed away? Do loading docks have appropriate railings?						
	9. Are all combustibles stored away from the building?						
	10. Is the roof hatch working properly?						
	11. Are all gutters downspouts, facility signs, decorative facades, light fixtures etc adequately secured?						
	12. Is there trash on the premises?						
	13. Does the roof pitch require installation of ice guards?						
SECTION II. LIFE SAFETY			Yes	No	RATING	N/A	
A. Fire Extinguishers			XX	XX	XXX	XX	
GENERAL	1. Are Fire Extinguishers present?						
	2. Are the proper type of extinguishers provided?						
	3. Are extinguishers readily accessible?						
	4. Are the extinguishers not on hooks?						
	5. Do extinguishers have an inspection tag and have extinguishers been serviced in the last 12 months?						
	B. Fire Alarm / Detection Systems			XX	XX	XXX	XX
	1. Is the system free of trouble / alarm signals?						
	2. Are pull stations, hooks and / or strobes blocked?						
	3. Does the building have an operational fire bell or emergency system						
	4. Is the fire door propped open?						
	C. Automatic Sprinkler Systems			XX	XX	XXX	XX
	1. Are all sprinkler supply valves open and locked with a chain?						
	2. Are sprinkler controls free of obstructions?						

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	3. Is there a minimum of 18" of clearance below sprinkler heads?				
	4. Are there caps on all outside fire department connections?				
SECTION III. FIRE DOORS		Yes	No	RATING	N/A
	1. Are fire doors in working condition?				
	2. Are fire doors being kept closed? Are fire doors unobstructed?				
SECTION IV. BUILDING INTERIOR		Yes	No	RATING	N/A
GENERAL	A. Lobbies and Corridors	XX	XX	XXX	XX
	1. Are all light fixtures secure and bulbs burning?				
	2. Are floors in good repair?				
	3. Is the general lighting in most corridors sufficient to eliminate dark areas?				
	4. Do the fire doors close completely?				
	5. Are all open fire doors equipped with a fusible link on door closure?				
	6. Were all open fire doors open by means of door closure rather than wood wedge or other prop?				
	7. Are all fusible links free of paint?				
	8. Are fusible links on fire door UL approved and of the proper temperature rating?				
	9. Are all escape corridors a minimum of 44-60" in width?				
	10. Are all exit lights illuminated?				
	11. Are sufficient exit and/or directional signs and lights posted at or in exit-ways?				
	12. Are all light fixtures covered so that no wiring is exposed?				
GENERAL	B. Stairs and Stairways	XX	XX	XXX	XX
	1. Are handrails installed where required and are existing hand rails secure?				
	2. Is the floor in good repair?				
	3. Is lighting adequate to eliminate dark areas?				
	4. Are safety treads on steps secure and are stairs and halls clean and free of obstructions?				
	5. Are exit doors leading to the outside equipped with panic hardware or other acceptable latching devices, which allow exit from the building without a key?				
	6. Are all exit lights illuminated?				
	7. Are sufficient exit and / or directional signs and lights posted at or in exit-ways?				
	8. Are spaces beneath stairs clear of all combustible materials?				
GENERAL	C. Elevators	XX	XX	XXX	XX
	1. Is a current elevator inspection certificate posted?				
	2. Do elevator cabs have an emergency escape hatch?				
	3. Does the emergency escape hatch open easily and without the need of any tool?				
	4. Do elevators have an emergency alarm or some other type of emergency communication?				
	5. Does each elevator cab have a sign (affixed or painted) indicating the maximum number of passengers allowed in the cab or equivalent weight limitation?				

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	6. Do elevators provide emergency stop equipment or devices?				
	7. Is the cab flooring in good repair?				
	8. Is the cab adequately lighted?				
	9. Has elevator and shaft-way been inspected in the past 12 months?				

GENERAL	<i>C. (Elevators continued)</i>	XX	XX	XXX	XX
	10. Are "no smoking" signs (affixed or painted) in view upon entering the cab or inside the cab?				
	11. Are elevator pits clear of all combustible materials?				

SECTION V.	MECHANICAL EQUIPMENT & SHOP	Yes	No	RATING	N/A
AREAS					

GENERAL	<i>A. Heating & Air Conditioning</i>	XX	XX	XXX	XX
	1. Are mechanical rooms kept locked?				
	2. Are mechanical rooms free of storage?				
	3. Are all vents clear of combustibles?				
	<i>B. Electrical Service Entrance Rooms</i>	XX	XX	XXX	XX
	1. Are all doors locked?				
	2. Is the entrance door clearly marked?				
	3. Is the room free of all combustible materials?				
	4. Is there a working fire suppression system?				
	<i>C. Generators</i>	XX	XX	XXX	XX
	1. Is there clearance around the outside of the unit for maintenance / service accessibility?				
	2. Is there adequate clearance around the transfer switch?				
	<i>D. Miscellaneous</i>	XX	XX	XXX	XX
	1. Do machines and equipment have required guards / safety devices?				
	2. Is all electrical wiring secured and all connections enclosed?				
	3. Is the floor area clean and without evidence of spills (i.e., oil)?				
	4. Are circuit fuses of proper size for building wiring, indexed and labeled?				
	5. Are phone room, mechanical room and electrical rooms locked?				
	6. Are covers on all electrical controls and electrical equipment in place? Are fuse and switch boxes closed?				
	7. Has all pressure equipment been inspected within the last 12 months?				
8. Is all piping labeled and / or painted using the U.S. Standard color code?					
9. Are aisles and doors clear and unobstructed for access purposes?					

SECTION VI.	SPECIAL HAZARDS	Yes	No	RATING	N/A
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GENERAL	1. Are flammable liquids in explosion proof cabinets and properly vented to the exterior?				
	2. Are gas pumps and fuel storage tanks properly color coded, marked and signed?				
	3. Is compressed gas properly secured and stored?				

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4. Are MSDS sheets located in chemical rooms as required?				
5. Are biohazard rooms clearly marked and locked?				
6. Are there commercial type cooking facilities on the premises? Requirements?				
7. Is there large capacity, computer, information technology or copier demands on the workspace?				

SECTION VII. GENERAL HOUSEKEEPING	Yes	No	RATING	N/A
A. Office Areas & Work Spaces	XX	XX	XXX	XX
1. Are work and storage areas neatly arranged?				
2. Are there tripping hazards (i.e., loose carpeting, electrical cords)?				
3. Are electrical outlets overloaded? Are GFCI's on receptacles near a water source?				
4. Are non-combustible trash containers being utilized?				
5. Are there fall hazards (i.e., stacked materials)? Are there any risks of falling to another level?				
6. Is there a reach problem (i.e., step stools and ladders being utilized)?				
7. Are aisles free of obstructions? Is there adequate walking space approaching exits?				
8. Is there any evidence of possible mold or mildew growth?				
9. Do the desk areas and work station spaces accommodate ADA requirements?				
10. Is the Emergency Evacuation Route and Action Plan posted and current?				
11. Are all exits labeled and adequately visible? Emergency lights working?				
12. Are there ceiling tiles that are missing or have not been placed back into position?				
13. Is there any possibility of getting caught in or between equipment / machine parts?				
B. Personal Electrical Equipment	XX	XX	XXX	XX
1. Do the electrical cords have good insulation? Are they being used properly?				
2. Are appliances adequately located (away from combustibles) and properly powered?				
3. Is there evidence of personal space heating devices and candles being utilized?				
4. Are there too many extension cords plugged into one circuit?				
C. Miscellaneous	XX	XX	XXX	XX
1. Are baby changing stations properly attached to the wall?				
2. Are restroom stall doors properly working? Are restrooms clear of obstructions?				
3. Are telephone and IT computer cables properly installed?				
4. Are all switches, receptacles, and junction boxes in good condition?				
5. Is there any wiring through doors and windows?				

GENERAL

	SECTION VIII. DISTRIBUTION & ELECTRICAL PANELS	Yes	No	RATING	N/A
GENERAL	1. Is the immediate area (boxes and panels) free of combustibles?				
	2. Are all panels free of obstructions for maintenance and service access?				
	3. Are the distribution and electrical panels covered?				
	4. Are the panel doors closed and kept locked?				
	5. Are the panels free from signs of arching / burning?				
	6. Are disconnects clearly marked?				
	7. Are surrounding floors and walls dry?				
	8. Are exit doors accessible and unlocked?				
SECTION IX. ADDITIONAL COMMENTS & OBSERVATIONS					
<p>(1) Items marked with an asterisk (*) will primarily be scheduled and addressed by the DPW&T Building Services Division.</p> <p>(2) Items checked as N/A indicate that the inspection line item is <u>Not Applicable</u> (i.e., the individual facility may not have an elevator etc.)</p>					

St. Mary's County Government
FACILITY / WORKPLACE CORRECTIVE ACTION REPORT

EHXIBIT B

Facility		Date:	
Facility		Inspected	

Department	Photo #	Hazard	Recommended Corrective Action	Supervisor or Designated Point of		
				Corrective Action Taken or Planned	Date	Initial

REPORT DISTRIBUTION (by Human Resources Risk Manager within two working days following workplace inspection)

Supervisor or Designated Point of Contact (POC):	
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SECTION 7. MISCELLANEOUS PROVISIONS

7.1 HAZARDOUS ENERGY CONTROL PROGRAM

The program establishes requirements for hazardous energy control. It is to be used to ensure that machines and equipment are isolated from all potentially hazardous energy sources whenever servicing or maintenance activities are in progress. This sample hazardous energy control program as a minimum guide to help the Division implement OSHA's Control of Hazardous Energy (Lockout / Tagout) standard (29 CFR 1910.147). In order to comply with the standard and provide effective protection against hazardous energy, the program must be tailored to each specific worksite.

When employees are working on a piece of equipment (electrical, moving parts, energized systems, etc.) it must be locked out. Employees who are cleaning or performing maintenance where a body part could be injured should be using a "lock out tag out system". The lock out system will physically stop the piece of machinery and render it safe. A tag is attached to notify other fellow employees that someone is working on the equipment and not to start it up. State occupational safety and health laws such as 29 CFR 1910.147 require these procedures be performed.

7.1.1 Lockout / Tagout Program (LO /TO)

The Lockout / Tagout standard helps protect workers from hazardous energy while they are performing service or maintenance on machine and equipment. This rule requires, in general, that before machinery or equipment is serviced, it must be turned off and disconnected from the energy source and locked or tagged out. Covered workplaces must develop a written energy control program and put it to use.

The mechanical, electrical, hydraulic, pneumatic, chemical, thermal energy that powers equipment or the energy stored in springs, steam, or pressurized air or liquids can be dangerous. For employees that clean, service or maintain machines where the unexpected startup, movement of parts, energization, or the release of stored energy could cause injury, the standard likely applies to you. Working on equipment you believe has been shut off can cause serious injury if there's an unexpected:

7.1.2 Basic Lockout Principles

- All lockout and tagout devices should be standardized within each facility in at least one of the following criteria: color; shape; or size; and additionally, in the case of tagout devices, print, and format should be standardized. This is a requirement for the Adult Detention Center.
- All power machines and equipment must be locked out to protect against accidental or inadvertent operation, when operation could cause injury to personnel. Locks are to be applied and removed only by the authorized employee who is performing the servicing or maintenance.
- All employees shall have their own locks and keys and they should be the only authorized individuals with access to their keys. No one else should be removing the lock except for the employee who attached it in the beginning of his/her maintenance work.
- No one should attempt to operate locked-out equipment.
- Disciplinary action will be applied if any employee violates these procedures, regardless of whether or not physical harm or equipment damage results.
- Lockout devices that meet or exceed OSHA standards (i.e., padlocks) with an appropriate DANGER warning tag(s) shall be used only for energy control. Prior to the servicing or maintenance of equipment a padlock and DANGER warning tag will be obtained from the Program Coordinator. Each padlock will be keyed differently with no master key or duplicate keys available.

7.1.3 Training

- Each **authorized employee** will be trained in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.
- Each **affected employee** shall be instructed in the purpose and use of the energy control procedure.

- **Affected employee.** An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.
- **Authorized employee.** A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under the standard.
- All other employees who do not work in areas where lockout may be used will be provided a brief overview of the lockout program.
- Training in lockout will be given to all new employees as a part of their orientation. Retraining will be conducted whenever there is a change in job assignment, a change in machinery or equipment or process change that presents a new hazard. Training records will be kept for all employees covered under the standard.

7.1.4 Lockout Procedures

The following specific procedures outline the SEQUENCE to be followed for lockout.

1. Notify the Program Coordinator, _____ name and phone #).
2. Notify all affected employees that lockout is going to be utilized and the reason why.
3. If the machine/equipment is in operation, shut it down by the normal shutdown procedure.
4. Operate the appropriate switch, valve, etc., so that the machine/equipment is isolated from the energy source.
5. Lock the energy isolating devices (i.e., the machine's energy control switch, circuit breaker, etc.) using OSHA approved locks and danger tags. This locks the device in an "off" position so it cannot be started up accidentally.
6. After the lock is in place, try to start the machinery/equipment to ensure the right circuit has been disabled. At this time the employee is testing to ensure the circuit is not live and releasing any stored energy left in the system.
7. Release, drain, restrain, or dissipate any stored energy.
8. Verify that energy isolation is complete, by attempting to start the affected machinery or equipment in the normal manner.
9. After testing, return all operation controls to the "neutral" or "off" positions.

The following procedures outline the sequence to be followed for RESTORATION to normal.

1. After service or maintenance is complete, check the area to ensure that no employees are exposed.
2. Remove all tools and repair equipment.
3. Ensure that all guards have been replaced and all safety interlocks reactivated (if so equipped).
4. Verify that the operating controls are in the "off" or neutral position.
5. Remove all lockout and tag devices and activate the energy isolation devices to restore energy.

For additional clarification, the following checklist is provided and lists the common questions to ask when performing lock-out/tag-out procedures:

Yes / No	Item to be Answered
	Is the equipment you are working on capable of being turned off?
	With the switch in the off or closed position, can you physically place a lock in to keep it from turning back on?
	If the switch can not accept a lock can you disconnect power at the circuit board?
	Make sure the lock you place is your lock issued to you and that you have the only key.
	Did you attempt to turn the equipment on to release all stored energy?
	Has normal movement completely stopped?

7.1.5 Lockout Program Inspection.

At least annually an inspector will review the Hazardous Energy Control Procedure with all authorized employees and actually observe the use of the procedure. At least annually, the Building Services Manager (Program Coordinator) will verify the effectiveness of the energy control procedures. These inspections shall provide for a demonstration of the procedures and may be carried out through random audits and observations.

The inspector will review the Hazardous Energy Control Procedure with all authorized employees and actually observe the use of the procedure. This inspection will be certified and documented by the inspector.

These inspections are to ensure that the energy control procedures are being properly used and to provide a check on the continued adherence to the procedures. _____ (name of person or title) will certify that the prescribed inspections have been performed. Any deficiencies will be corrected immediately, either by modification of the procedure, retraining of employees, or a combination of both.

See your supervisor for additional information on “lock out tag out equipment” and proper use for specific facilities. The Lockout /Tagout procedures for facilities should be reviewed annually for necessary changes. Each piece of equipment should be listed and the required Lockout /Tagout isolation points (valves, breakers, disconnects, etc.) properly identified.

7.2 FACILITY SECURITY PLAN (FSP)

The purpose of these guidelines is to help govern conditions of use and access to county facilities both during and after normal business hours in order to maintain the integrity and security of the Courthouse and other County facilities, to protect the public who use County facilities, and to protect employees who work within St. Mary’s County Government facilities.

A facility must be designed to include physical safeguards that will protect against unauthorized access, detect attempted or actual unauthorized access, and activate an effective response. These measures are what we call physical security and they are necessary in order to control access to the organizations information and assets. The physical security requirements at a particular facility will vary depending on the security marking of the information or assets to be held at the site, as well as the physical layout of the facility, as each facility is unique.

For example, St. Mary’s County utilizes various measures to provide increased security to the Courthouse. These include but are not limited to: access control systems, video surveillance, security personnel, security screening, searches, and policies for access to and use of the facility. The judicial court system considers violation of security policies to be a serious matter.

It is the policy of the Building Services Division to enhance facility security through the use of access control systems. Permissions for entry should be strictly controlled to provide for only that amount of access necessary to carry out the functions of government. There are various reasons why there might be interest in accessing a facility: theft of information or purchase of information from personnel; theft from records, files, documents, or related sources; gaining access to working models, sample products, processes, or equipment, and making copies; manipulating personnel for one reason or another to gain information; gathering information after gaining access to facilities; searching through discarded records, waste, trash cans; making threats, offering bribes, etc.

As such, the Division may be required, from time to time, to implement physical security measures such as progressively restricted security zones, locked doors, access control systems, intrusion alarm systems, approved security containers, destruction equipment, and other applicable measures as funding levels permit.

7.2.1 Emergency Procedures

Suspicious circumstances or emergencies may require that the County's Emergency Operations Plan (EOP) and Radiological Emergency Plan (RAP) be initiated. The County maintains emergency procedures that address threats to life and property including fire, bomb threats, radiological releases, and threats to safety. Specific emergency annexes are also maintained by the Department of Public Safety that describe Departmental roles and responsibilities.

7.2.2 Use of Facilities During Non-Business Hours

St. Mary's County Government makes certain facilities or portions of facilities available for appropriate activities that do not infringe upon nor interfere with the primary purpose for which its buildings and grounds are intended and which do not compromise security policies or the safety of employees and the public. This Plan outlines conditions for such use. Any assessed fees are intended to recover costs associated with non-County business use.

7.2.3 Categories of Activities/Users

- **Category A.** A County Employee must be present and responsible for security. Includes official meetings of County Commissioners, meetings of County Boards and Committees, and other County meetings subject to the open public meetings act. In order to qualify as a category A activity, a County employee must be present and responsible for facility use / security.
- **Category B.** A County Employee must be present and responsible for security. Includes official meetings of County Departments and County Board and Committee workgroups that are not subject to the open meetings act. Also includes meetings of emergency services groups. In order to qualify as a category B activity, a County employee must be present and responsible for facility use/security.
- **Category C.** A County Employee must be present and responsible for security. Includes non-profit organizations that can produce proof of their 501(c) status, youth sponsored activities such as 4-H clubs, Boys and Girls Club, Scouts, and school activities. This category includes all community service and civic groups such as Rotary, Kiwanis, Lions Club, etc.
- **Category D.** A County Employee is not required to be present and responsible for security. Includes non-profit organizations who can produce proof of their 501(c) status, youth sponsored activities such as 4-H clubs, Boys and Girls Club, Scouts, and school activities. This category includes all community service and civic groups such as Rotary, Kiwanis, Lions, Granges, etc. Activities otherwise eligible for category B where no County employee is present are included in this category. Use by this category may require a special permission.
- **Category E.** A County Employee is not required to be present and responsible for security. Includes for-profit, commercial, political, union (non-county employee), religious, and private groups or activities (i.e. weddings, receptions, meetings, etc.). Special permission, reservations, fees and/or an event permits are required.

A well-planned security program will encompass a number of efforts, with special attention paid to many of the following aspects: screening and background checks for personnel; training security professionals and in-house staff; preventing unauthorized entry and controlling access; classifying sensitive and critical materials and information; safeguarding and protecting sensitive materials actively and effectively; inspecting security controls and audits periodically; establishing levels of accountability, enforcement, and authorization; controlling disposal efforts; developing access restrictions and controlling movement in the facility; evaluating and monitoring personnel continuously in sensitive areas; developing education programs in information security; and applying security techniques, devices, procedures, and policies.

7.2.4 Basic Security Planning Checklist

A Basic Security Planning Checklist is a practical approach to some of the common aspects of building security. It should be considered as a working tool or as a guide to developing a more comprehensive program. The purpose of the checklist is to help assess overall physical security needs with regard to facility location, layout, design, construction, etc. Assess effectiveness of external/ internal controls with regard to an analysis of barriers, control points, entrances / exits, lighting, authorization levels, hardware, security devices, etc. The following listing of various types of access controls and perimeter protection that should be evaluated when addressing the specific needs of facilities.

Types of access controls

- In-house or contractual security personnel: routine patrols and inspections
- Alarm systems, security and anti-intrusion devices
- Video, closed circuit television and / or electronic monitoring
- Key card control management and accountability
- Levels of access and control of movement for personnel, visitors and others
- I.D. badges and recognition systems (i.e., access to Public Safety during declared emergencies)
- Pre-employment screening and on-the-job monitoring
- Security education and emphasis on enforcement
- Unannounced inspections and checks
- Periodic Vulnerability and Risk Assessments (Office of the Sheriff)

Perimeter and barrier protection

- Natural barriers: landscape and terrain
- Fencing: height, type, access points and construction
- Walls and ceiling construction in high risk areas
- Gated facilities and security checkpoints
- Frequency of patrols and security checks
- Exterior door, window, vent, ductwork, valve locations and security devices used
- Entry and reception areas: centralize access location and control of entry
- Remove obstructions that might impede surveillance and vigilance
- Parking areas: entrance/exit, access to facility
- Restrictive signs posted in and reduced access to sensitive areas
- Lighting conditions for safety / security illumination



7.2.5 Facility Security Level (FSL) Evaluation and Recommendations

Unfortunately, there are currently no universal codes or standards that apply to all public and private sector buildings. However, most agree that security issues must be addressed and integrated into both the design of new buildings and management of existing facilities. To help determine a reasonable level of security, the Department will utilize the Interagency Security Committee (ICS) standards and best practices developed by the Department of Homeland Security and adopted by the federal government.

The standards adopted herein are similar to those utilized by the U.S. Marshals Service (USMS) for federal facilities that are based on building size, agency mission / function, tenant population, and the degree of public access to the facility. The following **Facility Security Level Determination Form** will be utilized in conjunction with the **Security Level Inventory** of existing facilities to determine recommendations for implementation.

Facility ID: _____						
Department / Agency: _____						
Name of Facility: _____						
Date FSL Determined: _____						
Facility Security Level Determination Form						
		Points				
Factor	1	2	3	4	Score	
1. Mission Criticality	LOW	MEDIUM	HIGH	VERY HIGH		
2. Symbolism	LOW	MEDIUM	HIGH	VERY HIGH		
3. Facility Population	100	101-250	251-750	750		
4. Facility Size	≤ 10,000 sq. ft.	10,001-100,000 sq. ft.	100,001-250,000 sq. ft.	250,000 sq. ft.		
5. Threat to Tenant Agencies	LOW	MEDIUM	HIGH	VERY HIGH		
					Sum of Above	
Facility Security Level (FSL)	I 5-7 Points	II 8-12 Points	III 13-17 Points	IV 18 or more Points	Preliminary FSL	
6. Intangible Adjustment	Justification:				+/-1 FSL	
					Final FSL	

Facility Security Level Scoring Criteria

1. Mission Criticality - The value of a facility to County Government is based largely on the mission of the facility, and the importance of the activities being performed. As vital as it is for the government to perform these activities, it is equally attractive to adversaries to disrupt important government missions. The "Mission Criticality" score is based on the criticality of the missions carried out by tenants in the facility (not by the tenant agencies overall). In a multi-tenant facility, the highest rating for any tenant in the facility should be used for this factor.

2. Symbolism - The "Symbolism" of the facility is considered from both a target attractiveness and consequence perspective. The symbolic value is first based on external appearances or well-known/publicized operations within the facility that indicate it is a County Government facility. Terrorists often seek to strike at symbols of government, democracy, and capitalism. Domestic radicals may seek to make a statement against government control, taxation, or regulation. Symbolism is also important because of the potential negative psychological impact of an undesirable event occurring at a prominent facility.

Facilities such as financial institutions, communications centers, transportation hubs, controversial testing laboratories, etc., may also be "symbolic" in the eyes of single-interest aggrieved individuals, radicals, and/or terrorist groups.

3. Facility Population - The infliction of mass casualties is an acknowledged goal of many terrorist organizations. Recovered terrorist pre-operational surveillance reports include considerable details on the times of day that the target population is at its highest, and do not distinguish between tenants and visitors. From a consequence perspective, the potential for mass casualties is always a major consideration.

"Facility population" is based on the peak total number of personnel in government space, including employees, on-site contract employees, and visitors. This number should NOT include transient influxes in population due to an occasional conference (or similar event), unless the facility is intended for use in such a

manner (such as a conference center) and the population is “part of normal business.” Transient shifts in population such as the occasional conference should be addressed by contingency security measures.

The number of daily visitors should be determined using the best metrics available to ensure the most accurate population. Ideally, this would be through reviewing visitor logs or access control lists; however, it may necessitate an estimate or a short-term sampling of visitor throughput. Facilities such as stand-alone parking garages should be considered to have a “population” of less than 100. Due to the sensitive nature of child care centers located in Federal facilities, every child care center or facility with a child care center merits a Population score of “Very High” and point value of 4.

- 4. Facility Size** - “Facility size” is based on the square footage of all occupied space in the facility. If the entire facility or entire floors are occupied, “gross” square footage should be used (length x width); if only portions of floors are occupied in a multi-tenant facility, “assignable” or “rentable” square footage should be used. Size may be directly or indirectly proportional to the facility population. An office facility with a large population will generally have a correspondingly large amount of floor space; however, a large warehouse may have a very small population.

For an attack on a large, recognizable facility makes for more extensive press (video) coverage. However, it should also be understood that large facilities require a more substantial attack to create catastrophic damage, requiring more planning and preparation by adversaries, which could be a deterrent. From a consequence perspective, the cost to replace or repair a large facility is a major consideration. The Complete Replacement Value (CRV) considers the cost to rebuild a facility in determining the potential economic impact of a successful attack.

The majority of County maintained facilities are below 10,000 square feet in size. Approximately twenty (20) facilities fall within the 10,000 -100,000 category and include the Airport Main Hangar, Health Department, Board of Elections, Chancellors Run Activities Center, Northern Senior Center, Old Carver Elementary School, Potomac /Patuxent / Chesapeake Buildings, three public libraries, Leonard Hall Recreation Center, and the Wicomico Shores Clubhouse, with the Adult Detention Center being the largest at 82,500 square feet. The Courthouse is the only facility within the 101,000 – 250,000 square foot range facility at 144,432 square feet.

- 5. Threat to Tenant Agencies** - Threat to Tenant Agencies is considered from a target attractiveness perspective. The facility should be viewed in terms of whether the nature of public contact required in or resulting from the conduct of business is adversarial, or, if there is a history of adversarial acts committed at the facility, against facility tenants, or against the tenant agencies elsewhere. The highest score applicable to any tenant in a multi-tenant facility will be considered when determining the FSL, even though it may be possible to limit the implementation of countermeasures for that threat to a specific tenant’s space or part of the facility. As with the impact of commercial tenants on the facility’s symbolism score, the potential threat to non-County government tenants in a mixed-tenant facility could result in a collateral threat to County government tenants. Thus, in considering the criteria, the threat to all tenants in a facility – including non-County government –should be considered and the highest used for the rating.

- 6. Intangible factors** - It is not possible to take into account all the conditions that may impact the FSL decision for all the different County and non-County departments and agencies. Certain factors, such as a short duration of occupancy, may reduce the value of the facility in terms of investment or mission, which could justify a reduction of the FSL. Such factors are in essence indicative of a reduced value of the facility itself, and a corresponding reduction in consequences of loss. Other factors may suggest an increase in the FSL, such as proximity to a highly-attractive neighboring facility which could be the target of an attack which could result in collateral damage, or designation as critical infrastructure. As such, the FSL may be raised or lowered one level at the discretion of the deciding authority based on intangible factors.

However, the intangible factor should not be used to raise or lower the FSL in response to a particular threat act. The FSL characterizes the entire facility; concerns about specific threats should be addressed with specific countermeasures, even if they are over and above that required as the baseline for a particular security level. Short-term events could also temporarily affect the factors evaluated here. Unless these events happen on a recurring basis, they should not affect the FSL determination. Instead, contingency plans should be developed to implement temporary measures until the event has passed. For example, a week-long conference may increase the population of a facility substantially during the conference, but it should not be considered in the FSL determination; however, if the facility is a conference center that normally holds

BUILDING SERVICES DIVISION
 COMPREHENSIVE FACILITIES MAINTENANCE PLAN
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such gatherings, the population during those conferences should be factored in to the FSL. Like all risk-management decisions, it is important to document these intangible factors and the resulting adjustments made to the FSL score. Any intangible factors and the associated adjustment should be documented by the decision-making authority and retained as part of the official records for the facility's security.

7.2.6 Security Level Inventory

As a part of an overall evaluation of County-maintained facilities, staff also performs an independent review of facilities using the following Security Level Inventory (sample) to help determine recommendations for implementation.

SECURITY LEVEL INVENTORY

BUILDING / FACILITIES DIRECTORY FACILITY NAME	ID #	SECURITY PERSONNEL Yes/No	METAL DETECTION or ALARM SYSTEM Yes/No	KEY CARD, FOB or SWIPE Yes/No	SECURE FENCING Yes/No	RECEPTION or ENTRY BARRIERS Yes/No	VIDEO Yes/No	RECOMMENDATIONS
Emergency Operations Center (EOC)	01							
Public Safety (911CC)	02							
Great Mills Swimming Pool (GMSP)	03							
Board of Elections (ELEC)	04							
Historical Society (HISS) old jail	05							
Northern Senior Center (NSC)	06							
Bell Building Lease (BB)	07							
Walden Counseling Center (WALDEN)	08							
Walden Outpatient Center (WC)	09							
DPW 1 Truck Bay (DPWTBAY)	10							
Recreation & Parks Maint Shop (RPMS)	11							
Transportation Building (BLDG.12)	12							
DPW Gas Flare Station (DPWGFS)	13							
DPW 2 Truck Bay (DPTB2)	14							
DPW Wash Rack (WASH RACK)	15							
DPW Salt Barn (ST)	16							
DPW Sign Shop (DPLS)	17							
St. Andrews Landfill House (ALFH)	18							
St. Andrews Convenience Center (ACS)	19							

7.3 LIFE CYCLE COST ANALYSIS (LCCA)

LCCA is a well-defined procedure for estimating the overall costs of project alternatives. It is commonly accepted throughout the business and engineering community. Basically, LCCA consists of adding all the initial and ongoing costs of the structure, product, or component over the time you expect to be using it, subtracting the value you can get out of it at the end of that time, and adjusting for inflation.

There are numerous costs associated with acquiring, operating, maintaining, and disposing of a building or building system. Building-related costs usually fall into the following categories: Initial Costs (purchase, acquisition, construction Costs); Fuel Costs; Operation, Maintenance, and Repair Costs; Replacement Costs; Residual Values (Resale or Salvage Values or Disposal Costs); Finance Charges (Loan and financing interest payments); and Non-Monetary Benefits or Costs.

A lot of information must be assembled and manipulated to accomplish a life-cycle cost analysis, but the basic formula is fairly straightforward. ASTM International, originally known as the American Society for Testing and Materials, develops and publishes technical standards for materials, products, systems, and services. ASTM standard E917- 02 "Standard Practice for Measuring Life-Cycle Costs of Buildings and Building Systems" is the standard industry procedure for analyzing life-cycle costs. The basic formula for calculating life-cycle cost is:

$$LCC = I + Repl - Res + E + W + OM + O, \text{ where...}$$

LCC = Total life-cycle cost in Present Value (PV) dollars of a given alternative

The term "Present Value" in the formula describes costs that have been adjusted for inflation, or "discounted." The emphasis on Present Value is important when considering expensive structures or components that function for many decades, because inflation can influence affordability. It's usually not worth calculating present value when analyzing the life-cycle costs of small or short-lived structures, products, or components.

I = Initial cost

Repl = PV capital replacement costs

Res = PV residual value (resale value, salvage value) less disposal costs

L = Desired useful life in years of the building or system

E = Total energy cost (PV)

W = Total water costs (PV)

OM = Total operating, maintenance, and repair costs (PV)

O = Total other costs, if any-contract administration costs, financing costs, employee salaries and benefits, and so forth (PV)

Life-Cycle Costing Estimate General Purpose Work Sheet				Alternative 1 <i>Describe: performance air handler</i>		Alternative 2 <i>Describe: economy air handler</i>		
Study Title: <i>Rooftop Air Handler System</i>				Estimated Costs	Present Worth	Estimated Costs	Present Worth	
Discount Rate: <i>10%</i> Date: _____								
Economic Life: <i>24 years</i>								
Initial/Collateral Costs	Initial/Collateral Costs							
	A.	<i>Air Handler System</i>		15,000	15,000	10,000	10,000	
	B.							
	C.							
	D.							
	E.							
	F.							
Total Initial/Collateral Costs					15,000		10,000	
Replacement/Salvage Costs	Replacement/Salvage (Single Expenditure)							
		Year	PW Factor					
	A.	<i>replace economy AH</i>	<i>8</i>	<i>0.4665</i>		10,000	<i>4,665</i>	
	B.	<i>replace performance AH</i>	<i>12</i>	<i>0.3186</i>	15,000	4,779		
	C.	<i>replace economy AH</i>	<i>16</i>	<i>0.2176</i>		10,000	<i>2,176</i>	
	D.							
	E.							
Salvage <i>air handlers</i>				<i>24</i>	<i>0.1015</i>	0	0	
Total Replacement/Salvage Costs					4,779		6,841	
Annual Costs	Annual Costs							
		Diff. Escal. Rate	PWA W/Escal.					
	A.	<i>maintenance</i>	<i>0%</i>	<i>8.985</i>	500	4,492	800	<i>7,188</i>
	B.	<i>energy</i>	<i>2%</i>	<i>10.662</i>	1,800	19,202	2,200	<i>23,470</i>
	C.							
	D.							
	E.							
Total Annual Costs					23,694		30,658	
Total Present-Worth Life-Cycle Costs					43,473		47,499	
Life-Cycle Present-Worth Dollar Savings					4,026		—	

PW – Present Worth PWA – Present Worth Of Annuity

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APPENDICES

APPENDIX A:
AFTER HOURS CALL-OUT/EMERGENCY POLICY – ADULT DETENTION CENTER
(Effective January 19, 2004)

PURPOSE

The purpose of this memorandum is to describe the procedure for reporting and responding to emergency and non-emergency maintenance requests after normal working hours, weekends or on holidays in an effort to reduce overtime costs for non-emergency after-hour call-outs.

GENERAL INFORMATION

Maintenance work requests are categorized as emergency, routine, project or deferred. The Building Services Division is the initial point of contact to request needed repairs (301-475-4200, ext. 1150). Normal working hours for the Division of Building Services are Monday through Friday from 7:00 a.m. – 3:30 p.m. **After** normal working hours, on weekends and holidays, emergencies should be called in to the Control Center at (301) 475-8016. Only **true emergencies** should be called in after hours. In an emergency situation, the element of time is a crucial factor in seeking relief and the resolution of the condition shall receive priority response if, indeed, it is truly an emergency situation. Poor planning or lack of planning or organization does not constitute an after-hours emergency.

CALL-OUT ROSTER

A call-out roster, which clearly indicates the dates on which Building Services personnel are available and on call, is provided monthly to the Control Center.

BUILDING SERVICES RESPONSE TIME

It is the desire of Building Services to respond to all **true emergencies** within one hour, however, weather conditions and/or multiple emergencies may slow the response of the on-call employee(s). In many cases, the Building Services personnel may contact the customer to determine the exact nature of the problem and to determine if a physical response is necessary **OR** if the problem may be corrected on the next working day.

REPAIRS

After making an assessment of the problem, Building Services personnel will make the needed repairs, regardless of the time of day. If more than one employee is needed to complete the repairs, the employee will contact his or her supervisor or other employees for assistance. If it is determined by the supervisor that outside assistance is required, a contractor will be contacted.

DEFINITION OF AN EMERGENCY

An emergency situation is defined as follows:

1. A serious and obvious threat to an individual or employee's health, welfare, or safety;
2. A serious and obvious threat to the operation of a County-maintained facility;
3. Electrical:
 - A. Loss of power or serious and obvious electrical threat to an individual's health, welfare, and safety. Contact the Control Services and Building Services on-call personnel will respond and determine if SMECO needs to be contacted and, if so, will contact SMECO;
 - B. If the generator starts up, the Control Center needs to be contacted and Building Services will respond.
4. Loss of water/hot water:
 - A. For the loss of water in the entire facility, contact the Control Center and Building Services will respond.
 - B. For loss of hot water in showers in the **entire** facility, contact the Control Center and Building Services will respond.
 - C. If a sewage back-up occurs in only one cell and it is not affecting the rest of the facility, please wait until the next working day to report the back-up.
5. Locks:
 - A. Electronic Locks: If locks cannot be manually operated with keys, please contact the Control Center and Building Services will respond.
 - B. If the main control doors or Door 176 are not operable, contact the Control Center and Building Services will respond.
 - C. If a door is jammed where inmates cannot be removed from cells, call the Control Center and Building Services will respond.

APPENDIX B:
AFTER HOURS CALL-OUT/EMERGENCY POLICY – COUNTY FACILITIES
(Effective January 19, 2004)

PURPOSE

The purpose of this memorandum is to describe the procedure for reporting and responding to emergency and non-emergency maintenance requests after normal working hours, weekends or on holidays in an effort to reduce overtime costs for non-emergency after-hour call-outs.

GENERAL INFORMATION

Maintenance work requests are categorized as emergency, routine, project or deferred. The Building Services Division is the initial point of contact to request needed repairs (301-475-4200, ext. 1150). Normal working hours for the Division of Building Services are Monday through Friday from 7:00 a.m. – 3:30 p.m. **After** normal working hours, on weekends and holidays, emergencies should be called in to the Control Center at (301) 475-8016. Only **true emergencies** should be called in after hours. In an emergency situation, the element of time is a crucial factor in seeking relief and the resolution of the condition shall receive priority response if, indeed, it is truly an emergency situation. Poor planning or lack of planning or organization does not constitute an after-hours emergency.

CALL-OUT ROSTER

A call-out roster, which clearly indicates the dates on which Building Services personnel are available and on call, is provided monthly to the Control Center.

BUILDING SERVICES RESPONSE TIME

It is the desire of Building Services to respond to all **true emergencies** within one hour, however, weather conditions and/or multiple emergencies may slow the response of the on-call employee(s). In many cases, the Building Services personnel may contact the customer to determine the exact nature of the problem and to determine if a physical response is necessary **OR** if the problem may be corrected on the next working day.

REPAIRS

After making an assessment of the problem, Building Services personnel will make the needed repairs, regardless of the time of day. If more than one employee is needed to complete the repairs, the employee will contact his or her supervisor or other employees for assistance. If it is determined by the supervisor that outside assistance is required, a contractor will be contacted.

DEFINITION OF AN EMERGENCY

An emergency situation is defined as follows:

1. A serious and obvious threat to an individual or employee's health, welfare, or safety.
2. A serious and obvious threat to the operation of a County-maintained facility;
3. Loss of power: Building Services on-call personnel shall determine if SMECO needs to be contacted and, if so, will contact SMECO.
4. Loss of water.
5. Fire or Burglar Alarms Sounding:
 - A. If the customer at the facility can ascertain that it is just a "trouble" alarm, this can be addressed the following day by calling Building Services.
 - B. **If the alarm is red and on full alert**, the Control Center must be contacted and Building Services personnel must respond.
 - C. **In all cases, if the on-call personnel are advised that the Fire Department is responding, the on-call personnel MUST respond.**
6. Elevators:
 - A. If an individual or individuals are trapped in the elevator, the Control Center must be contacted and Building Services personnel must respond.
 - B. If an elevator is mal-functioning and **there is another usable elevator** in the facility, we would ask that a sign be posted on the elevator, advising the elevator is "out of order" and Building Services should be contacted the next working day.

APPENDIX B:
AFTER HOURS CALL-OUT/EMERGENCY POLICY – COUNTY FACILITIES (Cont'd.)
(Effective January 19, 2004)

7. Security Issues:
 - A. If issues arise regarding the security of the facility (i.e., facility cannot be locked, windows are broken out, etc.) the Control Center should be contacted and Building Services will respond.

8. HVAC (Air conditioning/heating) Problems:
 - A. Building Services will respond after hours to any HVAC problems in **all facilities that operate 24 hours per day.**
 - B. If a call is received from other than a 24-hour per day facility and the facility is closing within 1 – 2 hours from receipt of the call, Building Services on-call personnel will determine if immediate response is necessary or if the response can be delayed until the next working day.

9. Hazardous Material Spills or Leaks:
 - A. Contact the Control Center and Building Services will respond.

10. Roof Leaks:
 - A. The customer should determine if the roof leak is small enough to be contained by placing containers under the leak until the next working day.
 - B. If the customer determines that the leak is too large or is damaging equipment of the facility structure, the Control Center should be contacted for Building Services response.

11. Sewer/drainage problems:
 - A. If a toilet/sink is inoperable, but not overflowing or presenting a health risk, **and there are other toilets/sinks available in the facility**, the customer is requested to place an “out of order” sign on the door and contact Building Services on the next working day.
 - B. Live-In Facilities: Customer is requested to contact the Control Center and Building Services personnel will respond.

BUILDING SERVICES DIVISION
 COMPREHENSIVE FACILITIES MAINTENANCE PLAN
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**APPENDIX C:
 FACILITIES DIRECTORY**

Last updated 5-20-2010

BUILDING / FACILITIES DIRECTORY FACILITY NAME	ID #	TOTAL GROSS SQ FOOTAGE OF BLDG	LEASE Yes/No	YEAR BUILT / RENOV	BUILDING CONDITION	LGIT SCHEDULE	COMPLETE REPLACEMENT VALUE (CRV)	PARKING LOT SQUARE FOOTAGE	PARKING LOT CONDITION
Emergency Operations Center (EOC)	01	5,440	No	1954	GOOD	\$437,580 Bldg Value Only	\$1,000,000	1,746	POOR
Public Safety (911CC)	02	7,200	No	2000	EXCELLENT	\$1,272,960	\$2,151,000	16,530	EXCELLENT
Great Mills Swimming Pool (GMSP)	03	4,148	No	2003	EXCELLENT	\$1,440,000	\$1,597,188	24,778	POOR
Board of Elections (ELEC)	04	10,440	Yes	1954	EXCELLENT	\$657,900	\$1,674,000	3,350	POOR
Historical Society (HISS) old jail	05	1,850	Yes	1876	GOOD	\$174,420	\$210,000	600	POOR
Northern Senior Center (NSC)	06	11,841	No	2005	EXCELLENT	\$2,800,000		21,433	EXCELLENT
Bell Building Lease (BB)	07	8,000	Yes		GOOD				GOOD
Walden Counseling Center (WALDEN)	08	3,472	No	1975	GOOD	\$127,500	\$540,000	3,757	GOOD
Walden Outpatient Center (WC)	09	2,880	No	1978	GOOD	\$174,420	\$432,000	6,090	GOOD
DPW 1 Truck Bay (DPWTBAY)	10	2,280	No	1984	GOOD	\$120,923	\$292,500	6,090	GOOD
Recreation & Parks Maint Shop (RPMS)	11	8,662	No	1989	GOOD	\$150,947	\$1,260,000	23,140	GOOD
Transportation Building (BLDG.12)	12	15,240	No		GOOD	\$897,555	\$2,286,000	40,714	GOOD
DPW Gas Flare Station (DPWGFS)	13		No	2006	EXCELLENT				N/A
DPW 2 Truck Bay (DPTB2)	14	2,280	No	1984	GOOD	\$12,093	\$292,500	6,090	GOOD
DPW Wash Rack (WASH RACK)	15	1,860	No	1999	EXCELLENT	\$127,500	\$234,000	4,975	GOOD
DPW Salt Barn (ST)	16	5,084	No	1989	EXCELLENT	\$67,320	\$480,000	13,582	GOOD
DPW Sign Shop (DPLS)	17	2,280	No	1989	EXCELLENT		\$45,500	6,090	GOOD
St. Andrews Landfill House (ALFH)	18	100	No		POOR				GOOD

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St. Andrews Convenience Center (ACS)	19	100	No	1990	FAIR	\$18,820	\$12,000	16,644	GOOD
Charlotte Hall Convenience Center (CHCS)	20	100	No	1900	FAIR	\$16,320	\$12,000	9,400	GOOD
Armory/Garage (ARGR)	21	4,000	No	1954	GOOD	\$10,200	\$520,000		POOR
Leonardtown Library (LEOL)	22	19,040	Yes	1951	GOOD	\$2,658,120	\$3,830,000	36,907	GOOD
Storage Compound (ARCH)	23	4,860	Shared		GOOD	\$20,000	\$2,614,950	8,448	POOR
Clements Convenience Center (CCS)	24	100	No	1988	FAIR	\$16,320	\$12,000	4,200	GOOD
Garvey Senior Center (GARVEY)	25	8,385	No	1954	GOOD	\$802,740	\$1,220,400	5,775	EXCELLENT
St. Mary's County Courthouse (SMC)	26	144,432	No	2001	EXCELLENT	\$12,240,000	\$22,620,000	46,350	POOR
Chesapeake Building (CHES)	27	16,100	No	2009	POOR	\$3,580,000		10,946	EXCELLENT
Potomac Building (COB)	28	32,121	No	1976	GOOD		\$6,216,000	42,000	POOR
Arnold Building (DPWADMIN)	29	5,226	No	1984	GOOD	\$518,160	\$900,000	50,026	GOOD
Oakville Convenience Center (OCS)	30	100	No	1981	FAIR	\$16,320	\$10,400	7,875	GOOD
Loveville Park-n-Ride Lot (LPR)	31	--	Yes	2010		Built	\$88,000	13,000	EXCELLENT
Tulagi Park-N-Ride (TUPR)	32		No	1996				43,725	GOOD
Wicomico Shores Golf Course Clubhouse (WSGC)	33	14,700	No	1974/2008	EXCELLENT	\$2,200,000			EXCELLENT
Hayden House (HH)	34		Yes						
Sheriff Charlotte Hall Outpost (SHERCHALL)	35	360	No	1940/2006	GOOD		\$21,600		GOOD
New Navy Museum (NAVM)	36	22,000	Yes			To Be Built	Est. \$5.5M		
Temporary Navy Museum (TNM)	37	16,300	Yes	LEASE	GOOD	\$520,200	\$5,400,000	19,264	FAIR
Emergency Equipment Shelter (EES)	38	8,100	No	2010	EXCELLENT	Built	\$650,000	--	--
New Transfer Station (TS)	39	12,000	No			To Be Built	Est. \$4.02M		
Ridge Convenience Center (RCS)	40	100	No	2000	EXCELLENT	\$16,320	\$10,400	9,213	GOOD
Health Department (HD)	41	29,600	Yes	1987	EXCELLENT	\$5,040,000	\$6,867,200	71,933	POOR
Drayden School House (DRSC)	42	600	No	1890	FAIR	N/A			
Airport Electrical Building (ELEC)	43	238	No		GOOD	\$6,120	\$30,720		N/A

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BLDG)									
New STS Bus Barn (STSB)	44	10,800	No	2010		To Be Built	\$Est. \$853,400		N/A
Landfill Scale House (LSH)	45	375	No	1988	GOOD	\$41,600	\$60,000		GOOD
Adult Detention Center/Boiler Room (ADC)	46/47	71,486	No	1986/1998	EXCELLENT	\$11,829,532	\$16,902,500	27,480	GOOD
Marcey House (MARCEY)	48	3,696	Yes	1988	EXCELLENT	\$590,580	\$792,000	2,501	GOOD
Advanced Life Support (ALS)	49	3,224	Yes	1988	EXCELLENT	\$13,236	\$506,000	4,419	GOOD
Future Tower Site (FTS)	50					To Be Built	Est. \$		
Leonardtown Tower Site (LTS)	51	546	No	2001	EXCELLENT	\$59,267	\$126,000		GOOD
Mechanicsville Tower Site (MTS)	52	546	No	2001	EXCELLENT	\$60,878	\$63,000		GOOD
California Tower Site (CATS)	53	546	No	2001	EXCELLENT	\$60,341	\$63,000		GOOD
Dameron Tower Site (DTS)	54	546	No	2001	EXCELLENT	\$60,828	\$63,000		GOOD
St. Andrews Fuel Facility (CGSC)	55	1,800	No	1991	GOOD	\$109,104	\$84,000		FAIR
Leonardtown Fuel Facility (CGSL)	56	864	No	1988/2009	GOOD	\$109,104	\$114,000	2,657	POOR
Leonard Hall Recreation Center (LHRECCTR)	57	20,016	No	1957	GOOD	\$749,700	\$2,688,000	10,804	GOOD
Leonard Hall School (LEHS)	58	9,291	Yes	1956	GOOD	\$1,120,980	\$2,369,000	13,770	POOR
Carter State Office Building (CSOB)	59	75,000	Yes	1987	EXCELLENT	\$21,692	\$16,500,000	112,350	POOR
Margaret Brent Gym (MBGYM)	60	7,560	No	1970	GOOD	\$274,380	\$780,000		GOOD
Charlotte Hall Welcome Center (CHWC)	61	3,276	No	1940/2006	GOOD	\$244,811	\$445,500	8,120	EXCELLENT
Mechanicsville Daycare (MEDC)	62	1,960	No	1960	FAIR	\$10,200	\$235,200	7,080	GOOD
Sierra Building (SIERRA)	63	6,930	Yes	1992	EXCELLENT	\$553,860	\$1,224,000	11,425	GOOD
Airport Main Hangar (MAINHANG)	64	13,260	No	1972	POOR	\$395,760	\$1,620,000	22,579	GOOD
Southern Maryland Regional Library (SOLI)	65	26,000	Yes	1988	EXCELLENT	\$3,328,260	\$5,589,000	29,044	GOOD
Charlotte Hall Library (CHAL)	66	(see #65)	No	1988	EXCELLENT				GOOD
St. Clements Island Museum Deck (SCIM)	67	3,512	No	1945	GOOD	\$288,660	\$474,120		N/A
St. Clements Island Museum Deck (SCIM)	67	2,772	No	1945	GOOD				N/A

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Hollywood Rec Center-Ripple (OHES)	68	8,240	No	1951	GOOD	\$1,001,640	\$2,679,300	12,079	EXCELLENT
Hollywood Rec Center-Daycare (OHES)	68	10,800	No	1951	POOR				POOR
Little Red School House (LRSH)	69	648	No	1820	GOOD	\$45,900	\$72,000		GOOD
Old Lexington Park Library (LEXP)	70	8,000	Yes	1963	GOOD	\$30,000	\$144,000	44,463	POOR
Piney Point Lighthouse/Museum (PPLM)	71	3,800	No	1950's	POOR	\$59,100	\$513,000		POOR
Piney Point Gift Shop (PPGS)	72	560	No	1950's	POOR	\$25,000	\$67,200		POOR
Piney Point Keeper's Quarters (PPKQ)	73	3,990	No	1836	GOOD	\$102,000	\$502,605		POOR
Valley Lee Convenience Center (VLCS)	74	100	No	1989	GOOD	\$16,320	\$10,400	10,530	GOOD
New Leonardtown Library (NEWLEOL)	75		No			To Be Built	Est. \$10.7M		
New Lexington Park Library (NEWLEXP)	76	26,000	No	2002	EXCELLENT	\$3,570,000	\$6,072,000	40,386	GOOD
Loveville Salt Barn (LSB)	77	20,000	Yes		GOOD	N/A			
Chancellor's Run Activity Center (CRAC)	78	17,640	No	1994/2010	COLLAPSE	\$1,304,580	\$2,700,000	29,132	GOOD
St Andrews Storage Shed (STRAW)	79	320	No	1998	FAIR	\$9,600	\$5,100		--
Piney Point Museum Gift Shop (PPM1)	80	5,504	No	1968			\$725,760		POOR
Piney Point Museum Boat Building Shop (PPM2)	81	2,256	No	1940	GOOD		\$366,120	15,253	POOR
Piney Point Museum Maritime Museum (PPM3)	82	6,580	No	1970/2004	EXCELLENT		\$648,000		POOR
St. Clements Museum Gift Shop (SCIM)	83	2,842	No	1930'S	GOOD	\$117,293	\$252,000		GOOD
St. Clements Museum Workshop (SCIM)	84	480	No	1998	EXCELLENT	\$27,599	\$50,160		GOOD
St. Andrews Storage Shed (BTOP)	85	320	No	1998	FAIR	\$9,600	\$5,100		--
Governmental Center Bldg Sign (GCBS)	86	--	No	1992	GOOD	\$3,000			N/A
Route 5 Welcome Sign (5WS)	87	561	No	1994	GOOD	\$21,420	\$24,000		N/A
Route 234 Welcome Sign (234WS)	88	561	No	"	"	"	"		N/A

BUILDING SERVICES DIVISION
 COMPREHENSIVE FACILITIES MAINTENANCE PLAN
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Route 4 Welcome Sign (4WS)	89	561	No	"	"	"	"		N/A
RESERVED	90								
Wicomico Building (BMF)	91	6,720	No	1979	EXCELLENT		\$600,000	20,669	GOOD
R&P Collections Management Facility (RPCMF)	92	2,520	No	2010	EXCELLENT	Built	\$250,000		--
Three Oaks Homeless Shelter (3OAKS)	93	9,040	Yes		GOOD			7,623	GOOD
Adult Detention Center Expansion (ADCEXP)	94	82,500	No			To Be Built	Est. \$18.2M		
Patuxent Building (COBA)	95	37,772	No	1999	EXCELLENT		\$6,660,000	69,131	GOOD
Old Carver Elementary School (OCE)	96	33,973	Yes	1958	GOOD	\$3,703,923		23,667	
Airport Terminal Building (APTB)	97	8,100	Yes	2000	EXCELLENT	\$1,300,000	\$3,645,000		FAIR
Bus Shelters (SHELTERS)	98	486	No		GOOD		\$12,000	109,038	GOOD
Old Great Mills School (OGMS)	99	20,574	Sublease	1935		\$2,098,548	\$1,713,600		
Old Great Mill School Trailer #2 (OGMST2)	100	672	Sublease	1980		\$35,616	\$10,200		--
Old Great Mill School Trailer #3 (OGMST3)	101	672	Sublease	1980		\$35,616	\$10,200		--
TOTALS*		877,334	0	138,155	0	\$65,398,466	\$140,872,223	1,221,941	

UPDATED LISTING IS FORWARDED TO RISK MANAGER FOR LGIT ANNUAL UPDATE. Last Updated April 20, 2010

APPENDIX D: MAINTENANCE WORK ORDER REQUEST FORM

MAINTENANCE REQUEST FORM

This Maintenance Request Form is intended for the use by County employees, occupants / users, and citizens to report building and facility related problems needing repair or to submit special work order requests. The Form will be used to help improve the level of responsiveness to our customers in a more efficient manner. If you notice and building services related issues, please do not hesitate to fill out the following Form.

If you do not see text editing areas below, your browser does not support forms. Instead, please send an email directly to jlinda_baird@co.saint-marys.md.us or call us at (301) 475-4200 ext 1150.

Date

Location (floor)

- Basement
 First
 Second
 Third
 Fourth

Nature of request

- Painting
 Shelving
 Fix Leak(s)
 Carpet - Floor Tile Replacement
 Air Temperature
 Elevator Malfunction
 Power Outage
 Trash removal
 Recycling
 Restroom Maintenance
 Wet - Dirty Floors
 Other

Specify Area

- Office
 Restroom
 Hallway
 Exterior

Department

Further Details

Name

E-Mail

Phone Number

Submit

Reset

APPENDIX E: ENERGY CONSERVATION MEASURES ACTION PLAN

1. IMMEDIATE CONSERVATION MEASURES

Measures that will have the greatest effect on usage in most work environments.

Heating and cooling accounts for about 30 - 50% of our energy costs.

- Use the automatic setting on your thermostat so the fan turns on only when you need heating or cooling. On the manual setting, the fan operates continuously and can increase your energy usage.
- Set the heating controls at 69 degrees F. (70 degrees for seniors) with a set back at night or when unoccupied to 60- 65 degrees.
- Cooling controls should be set no lower than 76 degrees F. (78 degrees for seniors).
- Consider raising cooling settings and lowering heating settings on programmable thermostats for both occupied and unoccupied hours.
- Heating and cooling should start no sooner than 1-2 hours before you begin the day.
- Heating and cooling may be set back 2 hours before the end of the day.
- Clean or replace filters regularly. Keep outside units free of leaves or debris that may clog vents.
- Do not use space heaters if your building has centralized heating.
- In the winter, close window coverings at the end of the day to cut down on heat loss. In the summer, close window coverings during the day to avoid the heat gain of direct sunlight.
- Turn off your computer monitor when you are away from your desk for more than 15 minutes and at the end of the day. Most monitors now come with power management features; talk to your staff's computer expert about activating these features. Note that screen savers don't save energy; complex screen savers actually increase energy use.
- Eliminate unnecessary hot plates, coffeepots and other small appliances in your area and turn off all tools, office machines, and portable appliances when not in use. If you're the last one leaving at the end of the day, turn off the photocopiers and other office equipment. Instead of having many coffee pots in various cubicles, select one to cover the whole office.
- Turn off all lights at night, including task and office lights, when they are not in use.
- Use natural light whenever possible. Turn off lights near windows when daylight is adequate.
- Reduce hot water heaters from 120 to 105 degrees, wherever practical (i.e., Not food service).
- Reduce boiler settings from 180 to 150 degrees, whenever possible.

Measures that will be effective for some work environments.

- Watering your landscape wastes electricity along with water. The water in your home or office gets there with the use of large electric pumps. Make sure you follow local watering guidelines for proper landscape care.
- Verify that the outside air (OSA) dampers are closed during unoccupied hours, including during morning warm-up periods. Fresh air is critical while the building is occupied, but heating OSA when it is not needed increases energy costs.
- Be sure motor-operated dampers are operating properly.
- Confirm that your adjustable speed drives (ASD) are running properly. If they are operated constantly at 100% speed, they use more energy than the directly connected motor. Most ASD's have an output monitor to report percentage of operation. A motor running at 50% speed uses 1/8 the energy of a motor running at 100% speed.
- Less frequently used equipment with remote controls such as televisions and VCRs should be unplugged when not in use because they still use some power even when turned off.
- Make sure photocells (light sensors that turn on electric lights after dark) are clean.

Measures that will be effective for some work environments.

- Also turn off lights in unused common areas such as copy rooms, break rooms, conference rooms, and rest rooms. The effect on lamp life and energy use when turning the lamp back on is negligible.
- Don't set a higher temperature to "warm up faster," or a lower temperature to cool quickly. It only wastes energy.
- Check to make sure that exhaust fans operate only during occupied periods unless required to operate continuously.
- Check that dampers on exhaust fans close when the fan is not operating. Adjust fan belt tension.

APPENDIX E:
ENERGY CONSERVATION MEASURES ACTION PLAN (Cont'd.)

Measures that will be effective for some work environments: (Cont'd.)

- Inspect control schedules and zones so that you heat only the occupied sections of the building.
- If you only have electric space heating, stagger the start times to help reduce demand, especially during peak demand times.
- Close off unoccupied areas and shut their heat or air conditioning vents; or turn off room air conditioners. This does not apply if you have a heat pump system.
- Sitting close to a window during the cloudy winter can make you feel cold; if so, close window coverings, or move further from the window.
- Try to schedule group activities in the area with the least energy use, and schedule evening meetings in areas that can be heated and cooled individually. This may include offering a work station for staff working after hours so they do not need to heat or cool half a floor or cubicles for one person on a weekend.
- Make sure that air vent grills are not blocked by plants, books, or furnishings.
- Keep drafts away from thermostat to prevent an inaccurate reading.
- Dust or vacuum radiator surfaces frequently to insure a free flow of heat.
- In cold weather, dress warmly and in layers that can be adjusted for optimal comfort. Loosen clothing and dress casually during the warmest hours.
- Dressing wisely can help you maintain natural heat. Wear closely woven fabrics. They add at least a half-degree in warmth. For women, slacks are at least a degree warmer than skirts. For men and women, a light long-sleeved sweater equals 2 degrees in added warmth. A heavy long-sleeved sweater adds about 4 degrees, and 2 light weight sweaters add about 5 degrees of warmth because the air between them serves as insulation to keep in more body heat.
- Don't use an air conditioner and an evaporative cooler at the same time. An air conditioner removes moisture from the air, while a cooler adds moisture to reduce room temperature. Since they use opposite methods for cooling, running both at the same time will increase your energy bill.

2. SHORT-TERM CONSERVATION MEASURES

- Have your vending machine operator(s) turn off the advertising lighting in the machine. This will conserve energy and could save between \$50 and \$110 per year, depending of your cost of electricity.
- Use photocells to automatically switch lights on at night or use motion sensors to increase safety. Photocells are controls that make lights "smart". They sense whether available surrounding light is present to determine whether a light should be lit or not. The light turns on and off automatically.
- Use lower wattage bulbs in non-critical areas.
- A 50-watt reflector floodlight provides the same amount of light as a standard 100-watt bulb.
- Use one large bulb instead of several small bulbs that add up to higher wattage.
- Many areas have more lighting than is required for current tasks. Measure current lighting levels and reduce excess lighting by using power reducers, multi-level switching, or simple removal of lamps and ballasts. Note that some ballast continue to use some energy even when lamps are not operating.
- Ask janitorial services to only light one area of the building at a time rather than having the entire building brightly lit until midnight.
- Ask janitorial services to take advantage of partial switching (such as turning on only one lamp of a three-lamp fixture that is wired to allow this) to further reduce energy use during building cleaning.
- Avoid using incandescent task light (desk lamps). Ask your building manager for a compact fluorescent lamp to replace the incandescent lamp in your task light.
- Using flexible work schedules / shifts are suggested to empty offices during energy peaks.
- Teleconferencing can reduce energy use and save travel costs.
- Install water flow meters in facilities to monitor gallons per minutes usage.
- Feel for air drafts around electrical outlets. Inexpensive pads are available, as are plugs for unused sockets.
- Confirm that the amount of outside air matches the occupant load. One improvement to consider is adding carbon dioxide monitors along with controls that will only bring in as much OSA as necessary for the current occupant load.
- Verify that the building control system is going into the night setback mode during unoccupied hours. Time clocks may require adjustments after daylight savings switch-over or after power outages. Even computer control systems may need updating after equipment modifications.

**APPENDIX E:
ENERGY CONSERVATION MEASURES ACTION PLAN (Cont'd.)**

2. SHORT TERM CONSERVATION MEASURES (Cont'd.)

- Confirm that OSA economizers are functioning properly to take advantage of free cooling. Most office buildings are in cooling mode when the outside air temperature is above 55 degrees F. The core of buildings over 20,000 square feet are almost always in cooling, even during the winter months.
- Keep your systems well tuned with periodic maintenance. At least once a year have a service technician measure the carbon dioxide in your gas burner. The higher the carbon dioxide the greater the efficiency of the unit. 9% is a good level.
- Make sure simultaneous heating and cooling does not occur. Verify proper operation of valves, dampers, and controls.
- For commercial and industrial applications, monitor stack temperatures on fossil fuel boilers. If the stack temperature is more than 400 degrees above the boiler room temperature, schedule the boiler for a tune-up.
- Turn off circulation pumps during unoccupied times if no freeze conditions exist.
- Make sure that air handling unit filters are changed every 2 - 3 months, and that coils on the outdoor condensing unit and indoor heating and cooling units are kept clean.
- Check control sequencing for multiple chillers and boilers. For light load operation, use the smallest and most efficient chiller or boiler available and avoid frequent equipment cycling.
- Check the duct work for air leaks about once a year if you have a forced-air heating system. To do this, feel around the duct joints for escaping air when the fan is on. Small leaks can be repaired with duct tape. Larger leaks may require caulking.

3. LONG-TERM CONSERVATION MEASURES

- Perform energy audits on all buildings.
- Incorporate energy efficiency guidelines for all new construction.
- Incorporate energy efficiency guidelines for all building retrofits.
- Purchase only "Energy Star" equipment.
- Utilize performance contracting to limit economic impact on building retrofits.
- Retrofit most energy inefficient buildings first.
- We can eliminate bulbs in fixtures as an initial conservation measure, but the long-term fix is to replace the T-12 bulbs with T-8 bulbs with electronic ballasts. In doing this, the whole lighting situation should be re-evaluated so we don't over light with the new bulbs since they are not only more energy efficient, but they put out more light.
- Replacement of windows, installing window films, and insulating buildings all have to be evaluated to make sure we are getting the most efficiency for the money spent. We will have to rely on the Public Works Board and the Building and Grounds people to provide the necessary over-sight on these projects.
- Water conservation needs to be addressed. Low flow faucets, low flow toilets and an evaluation of hand drying methods should be evaluated in the same contexts as electricity.
- Develop landscaping plans that do not require the present water consumption.
- Variable speed drives on air handlers.
- A central heating and cooling system will use less energy than individual heat-cool units for most work environments.
- Utilize high efficiency motors on electrical equipment.
- Evaluate state processes to eliminate or reduce energy resources needed for the process such as eliminating or reducing the forms needed to get permission for an activity, simplify approval chains, or modify reporting requirements, etc.
- Installing renewable energy systems in buildings may be cost effective for some buildings and will reduce the demand on the electric energy system.

**APPENDIX F:
 SUGGESTED AVERAGE USEFUL LIFE OF BUILDING COMPONENTS**

MISCELLANEOUS SITE IMPROVEMENTS			
ITEM	YEARS	ITEM	YEARS
I. PARKS AND RECREATION	15-20	VI. TRAVEL WAYS	
A. Athletic Fields	15	A. Paved Flexible Bituminous - Roads	40
B. Soccer Fields	15	B. Paved Flexible Bituminous - Walks	30
C. Outdoor Lighting	20	C. Rigid Concrete - Roads	40
D. Bleachers	20	D. Rigid Concrete - Walks	30
E. Tennis Courts	20	E. Brick – Walks	20
F. Swimming Pools	20		
G. Retaining Wall	20	VII. LANDSCAPING	
H. Fences	20	A. Evergreen	25
II. PARKING LOTS	10-35	B. Deciduous - Small	15
A. Gravel	10	C. Deciduous - Large	35
B. Asphalt	20	D. Deciduous - Historic	50
C. Concrete	35	E. Shrubs - Evergreen	15
D. Sidewalks (Concrete)	30	F. Shrubs - Deciduous	15
III. WATER MAINS	25-75	G. Flowers	1
A. Ductile Iron	75	H. Turf - General	20
B. Plastic	25	I. Turf - Play	8
IV. SANITARY SEWER	40-60	J. Turf - High Intensity	3
A. Transite	40	K. Chain Link Fencing	20
B. Vitrified Clay	40	L. Wood Fencing	10
C. Ductile Iron	50	M. Flag Poles	25
D. Plastic (PVC)	60		
E. Concrete Pipe	40		
V. STORM WATER	30-60		
A. Metal Corrugated Pipe	30		
B. Concrete Pipe	40		
C. Vitrified Clay Pipe	40		
D. Cast Iron	50		
E. Plastic	60		

To determine the Effective Age of a Building After Remodeling, See **APPENDIX G**

**APPENDIX F:
 SUGGESTED AVERAGE USEFUL LIFE OF BUILDING COMPONENTS (Cont'd.)**

STRUCTURAL SYSTEMS			
ITEM	YEARS	ITEM	YEARS
I. REINFORCED CONCRETE FRAME		V. FOUNDATIONS	
A. Masonry Exterior		A. Wood Piles	15-40
1. Heavy (brick)	75	B. Concrete / Brick / Block	Life Bldg
2. Light & Medium	40	C. Steel Piles	25-40
3. Concrete (tilt wall, Prestress)	75	VI. EXTERIOR FINISHES	
II. STEEL FRAME		A. Wood Treated (Creosote)	15-20
A. Masonry Exterior		B. Wood Treated (PT)	30 to 60
1. Heavy	45-75	C. Brick	Life Bldg.
2. Medium	35	D. Cement Plank	45+
3. Light	30	E. Vinyl	20+
B. Metal Exterior		F. Paint	7-10
1. Heavy	30	G. Wood Untreated	1 to 10
2. Medium	25	VII. FOUNDATIONS, WALLS & DECKS	
3. Light	20	A. Concrete	100
III. WOOD FRAME		B. Roof Deck, Floor Deck	100
A. Masonry Exterior		C. Stairs	100
1. Heavy	35+	D. Structural Walls	100
2. Medium	25	E. Structural Steel	100
B. Metal Exterior		F. OSB	40+
1. Heavy	30	G. Wood Framing	35-60
2. Medium	25	H. Wood Floor Joist	30-45+
3. Light	20	VIII. SHINGLES	
C. Wood Exterior		IX. EPDM, SINGLE-PLY	
1. Heavy	25	X. STANDING SEAM METAL	
2. Light & Medium	20	XI. SLATE	
IV. INTERIOR FINISHES		XII. SINGLE-PLY BUILT UP	
A. Interior Painting	5-10	A. Insulation	20
B. Carpet	5-15	B. Single Ply, Built-Up	20
C. Resilient Tile	10-20	XIII. FLASHING	
D. Ceiling Tile	7-10	A. Tin	20
E. Ceramic Tile	20+	B. Copper	25+
F. Toilet Partitions	15-20	C. Stainless Steel	25+
G. Interior Partitions	20-40	XIV. WOOD SHINGLES	
V. WINDOWS & DOORS		XV. CLAY TILE	
A. Windows	20-30	XVI. WATERPROOFING	
B. Exterior Door	20-25	XVII. ELEVATOR	
C. Solid Core Door	40		20
D. Storefronts	20-25		
E. Hollow Core	10		
F. Overhead Door	20-40		

**APPENDIX F:
 SUGGESTED AVERAGE USEFUL LIFE OF BUILDING COMPONENTS (Cont'd.)**

HVAC and PLUMBING SYSTEMS			
ITEM	YEARS	ITEM	YEARS
I. HVAC	20	B. Piping (Plumbing)	20
A. Air Conditioning		1. Cast Iron Waste	35
1. Central, Incl. Ducts &	15	2. Brass	40
Piping		3. Copper	30
2. Window Units	10	4. PVC (Plastic)	20
3. Cooling Towers	15-20	5. Steel	20
4. Rotary Compressor	20	6. Vitrified Tile	30
5. Reciprocating Compressor	20	7. Cold Water Iron	25
6. Dehumidifiers	10	8. Hot Water Iron	20
7. Humidifiers	10	9. Ductile Iron	50
8. Heat Exchanger	20	10. General	20
9. Controls	18	C. Sprinkler - Emergency	
10. Heat Pumps	10	1. Wet & Dry Systems	30
11. Evaporator Cooler Larger	15	2. Fire Pumps	20
Pipe		3. Hose Housings	20
12. Roof Top Package Unit	15	4. Engine Generator	25
13. Refrigeration Units	10	5. Fire Alarm	20
14. Evaporator Cooler (5	6. Fire Pump	20
Small)		7. Battery -Single Small	7
B. Heating	20-30	8. Battery- Multiple Large	15
1. Furnaces & Boilers	25	D. Sump Pumps	
2. Radiators, Convectors,	20	1. Small	10
Piping		2. Large	15
3. Unit Heaters - Gas Piping	15	E. Water Heaters	
4. Unit Heaters – Electrical	20	1. Gas	10
5. General Piping	20	2. Electric	10
6. Iron Piping	30-50	3. Oil	10
7. Copper Piping	25	F. Water Wells	25
8. Concealed Radiation	25	III. SERVICE SYSTEMS	
9. Direct Radiation	18	A. Elevators	20
10. Controls	10	B. Fire Alarm	20
11. Heat Pumps	15	C. Intercom	15
12. Roof Top Package Unit	20	D. Telephone	15
13. Burners	20	E. Electronic Controls	5
14. Pumps	15 to 20	(Software)	
C. Ventilation (fans & exhaust)	15		
1. VAV Boxes	20		
2. Air Handlers	20		
3. Supply Duct Work (metal)	Life		
4. Return Duct Work (metal)	Life		
5. Unit Ventilators	15-20		
6. Exhaust Hoods	15		
7. Kitchen Hoods	20		

II. PLUMBING

A. Fixtures	15
1. Drinking	15
2. Water Closets	20
3. Kitchen Equipment	10-15
4. Urinals	20
5. Faucets	15 to 20

LIGHTING and ELECTRICAL SYSTEMS

ITEM	YEARS	ITEM	YEARS
------	-------	------	-------

I. LIGHTING

A. Conduit	Life Bldg
1. Wire	20+
2. TWHN	50
3. RH	30
4. Shielded Wire	20-25
B. Fixtures	15
1. Fluorescent Lighting	10
C. Exterior Lighting	15
1. Pedestal Light	20
2. Exterior Wall Units	10
3. Exterior Pole	20

II. POWER FEED WIRING

A. Bus Duct	25
B. Capacitor	20
C. Power Feed Wiring Mains	25
D. Switchboards	20
E. Switch Units	20
F. Electrical Outlet	20

III. TRANSFORMERS

A. Wet Type	20-35
B. Dry Type	15-30

IV. HIGH VOLTAGE

A. Air Breaker	35
B. Vacuum Breaker	35
C. Oil Breaker	35

V. SPECIAL ELECTRIC

10

VI. DISTRIBUTION

A. Low Voltage Equipment	30
B. Motor Controls	20
C. Panel Boards	25-30

**To determine the Effective Age of a Building After Remodeling, see
 APPENDIX G**

APPENDIX G:

**SAMPLE DEDICATON PLACQUE
NORTHERN SENIOR
CENTER**



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ARCHITECT

Schamu Machowksi Greco

CONTRACTOR

Linden Contracting, Inc.

CONSTRUCTION MANAGEMENT

CSBI, INC.

APRIL (Year)

BUILDING SERVICES DIVISION
 COMPREHENSIVE FACILITIES MAINTENANCE PLAN
 September 2012

**APPENDIX H:
 EFFECTIVE AGE OF BUILDING AFTER REMODELING**

EFFECTIVE AGE OF BUILDING AFTER REMODELING																																				
PERCENT OF BUILDING REMODELED																																				
	10%				20%				30%				40%				50%				60%				75% +											
ACTUAL AGE OF BUILDING	5	15	25	35	5	15	25	35	5	15	25	35	5	15	25	35	5	15	25	35	5	15	25	35	5	15	25	35	5	15	25	35				
10 YRS	10				9				9				8				8				7				6											
15 YRS	14				13				12				11				10				9				7											
20 YRS	18	19			17	19			16	19			14	18			13	18			11	17			9	16										
25 YRS	23	24			21	23			19	22			17	21			15	20			13	19			10	17										
30 YRS	28	29	30		25	27	29		23	26	29		20	24	28		18	23	28		15	21	27		11	19	26									
35 YRS	32	33	34		29	31	33		26	29	32	35	23	27	31	35	29	25	30	35	17	23	29	35	12	20	27	35								
40 YRS	37	38	39	40	33	35	37	39	30	33	36	39	26	30	34	38	23	28	33	38	19	25	31	37	14	21	29	36								
45 YRS	41	42	43	44	37	39	41	43	33	36	39	42	29	33	37	41	25	30	35	40	21	27	33	39	15	22	30	37								
50 YRS	46	47	48	49	41	43	45	47	37	40	43	46	32	36	40	44	28	33	38	43	23	29	35	41	16	24	31	39								
55 YRS	50	51	52	53	45	47	49	51	40	43	46	49	35	39	43	47	30	35	40	45	25	31	37	43	17	25	32	40								
60 YRS	55	56	57	58	49	51	53	55	44	47	50	53	38	42	46	50	33	38	43	48	27	33	39	45	18	26	34	41								
65 YRS	59	60	61	62	53	55	57	59	47	50	53	56	41	45	49	53	35	40	45	50	29	35	41	47	19	27	35	42								
70 YRS	64	65	66	67	57	59	61	63	51	54	57	60	44	48	52	56	38	43	48	53	31	37	43	49	20	29	36	43								
75 YRS	68	69	70	71	61	63	65	67	54	57	60	63	47	51	55	59	40	45	50	55	33	39	45	51	21	30	37	44								
80 HRS	73	74	75	76	65	67	69	71	58	61	64	67	50	54	58	62	43	48	53	58	35	41	47	53	22	31	39	46								
85 HRS	77	78	79	80	69	71	73	75	61	64	67	70	53	57	61	65	45	50	55	60	37	43	49	55	23	32	40	47								
90 HRS	82	83	84	85	73	75	77	79	65	68	71	74	56	60	64	68	48	53	58	63	39	45	51	57	24	34	41	49								
95 HRS	86	87	88	89	77	79	81	83	68	71	74	77	59	63	67	71	50	55	60	65	41	47	53	59	27	35	42	50								
100 YRS +	91	92	93	94	81	83	85	87	72	75	78	81	62	66	70	74	53	58	63	68	43	49	55	61	29	36	44	51								

APPENDIX J: Non-Smoking and Designated Smoking Areas

AUTHORITY:

Chapter 14 Section 1405 of the Personnel Policies and Procedures Manual states: Smoking is prohibited in all County buildings and County vehicles. The Division of Building Services shall establish outside smoking areas that are away from the main building entrances so as to minimize exposure to secondhand smoke.

RESPONSIBILITY:

The St. Mary's County Government, staff, employees, and visitors are responsible for complying with the following non-smoking policies.

PURPOSE:

It is the policy of the St. Mary's County Government to regulate smoking on County properties since tobacco smoke has been found to be a Class A human carcinogen. The Attorney General, the Centers for Disease Control and other public health officials agree that that secondhand smoke poses both immediate and long term health risks for all, but especially to those individuals with asthma, cardiovascular disease, impaired lung function, hay fever, certain eye disorders, and those with allergic reaction to tobacco smoke. These dangers have been found sufficient to warrant the regulation of smoking in public places. This policy is designed to protect and enhance indoor air quality in County Government buildings and grounds, which should contribute to the health and well-being of the community, in general.

DEFINITION:

Smoke or smoking means the act of smoking or carrying a burning cigar, cigarette, pipe or other tobacco product of any kind.

ENCLOSED LOCATIONS:

Buildings - In accordance with Maryland State Law smoking is prohibited in all enclosed buildings, including residential buildings in accordance with COMAR § 01.01.1992.20; § 09.12.23; Maryland Annotated Code, Business Regulations Article, § 2-105.

Motor Vehicles - Smoking is prohibited in all motor vehicles in accordance with COMAR § 01.01.1992.20; § 09.12.23.

OUTDOOR LOCATIONS:

Entryways- Outdoor smoking is prohibited within 20 feet of all building openings including doorways, air or ventilation intake systems, entryways, windows. These areas will be clearly posted as non-smoking areas.

Disposing of Smoking Refuse- Smoking refuse, such as cigarette butts, burnt tobacco, etc., are to be disposed of in ash urns or other containers specifically designed for such disposal. Smoking refuse is not to be disposed of on the grounds outside of these designated containers including grassy areas, open spaces, sidewalks, or other paved areas.

**APPENDIX J:
Non-Smoking and Designated Smoking Areas (Cont'd.)**

DESIGNATED SMOKING AREAS:

Smoking is permissible only in areas with signage stating, “designated smoking area”. Receptacles will be available for discarded smoking materials in each designated area. Each facility off campus will have a designated smoking area.

Designated smoking areas were identified with consideration of the following criteria:

- Avoid using a main entrance to any building.
- Avoid entrances that provide wheelchair access because individuals who use wheelchairs or other persons with disabilities may not have alternative entrance choices.
- Where possible, benches have been added to designated smoking areas for the comfort of smokers.
- Ensure that individuals entering a building have a choice of not walking through a designated smoking area.
- Avoid entrances adjacent to any air intake units that would pull smoke into buildings.
- Select covered areas, where possible, to provide protection from the weather for smokers.
- Where viable alternatives are limited, work with building occupants to develop their own recommendation for a designated smoking area.
- There shall be **No Smoking** within 30 feet of building main public entrances.
- There shall be **No Smoking** within 20 feet of employee secondary building entrances*.
- There shall be **No Smoking** in public common areas.

* Note: Experts on the effects of Environmental Tobacco Smoke (ETS) have stated that 20 feet from a doorway, window or ventilation for a building is adequate.

SMOKING AREA SIGNAGE:

An educational campaign and prominent signage will inform all faculty, staff and students of the designated smoking area for each building. Placement of urns, benches, and other ways of creating smoking areas will clearly identify smoking areas.



**APPENDIX J:
Non-Smoking and Designated Smoking Areas (Cont'd.)**

ENFORCEMENT:

Anyone noticing an individual who is smoking in a non-smoking area may inform that person of the smoke-free policy and refer to the designated smoking areas.

The rights of non-smokers and smokers alike will be maintained on the basis of mutual respect and an understanding of the needs for non-smokers not to be exposed to second-hand smoke and the rights of smokers to smoke.

When an individual or employee who is smoking in a non-smoking area is observed by a designated enforcement officer, the officer shall inform the smoker of the policy and request him or her to cease smoking in the non-smoking area.

Should an individual continue to violate the smoking policy after being advised that he or she is in violation, the individual shall be reported to the Human Resources Department for further action.

SMOKING CESSATION:

Any County employee who is interested in quitting smoking is urged to contact the Department of Human Resources for information on Smoking Cessation Programs.

APPENDIX K:

CHECK LIST OF CONSIDERATIONS FOR ENTRY,
 WORKING IN AND EXITING CONFINED SPACES

ITEM	CLASS A	CLASS B	CLASS C
1. Permit	X	X	X
2. Atmospheric Testing	X	X	X
3. Monitoring	X	0	0
4. Medical Surveillance	X	X	0
5. Training of Personnel	X	X	X
6. Labeling and Posting	X	X	X
7. Preparation			
Isolate/lockout/tag	X	X	0
Purge and ventilate	X	X	0
Cleaning Processes	0	0	0
Requirements for special equipment/tools	X	X	0
8. Procedures			
Initial plan	X	X	X
Standby	X	X	0
Communications/observation	X	X	X
Rescue	X	X	X
Work	X	X	X
9. Safety Equipment and Clothing			
Head protection	0	0	0
Hearing protection	0	0	0
Hand protection	0	0	0
Foot protection	0	0	0
Body protection	0	0	0
Respiratory protection	0	0	0
Safety belts	X	X	X
Life lines, harness	X	0	
10. Rescue Equipment	X	X	X
11. Recordkeeping/Exposure	X	X	

X - indicates requirement
 0 - indicates determination by the qualified person

Source: National Institute of Occupational Safety and Health

APPENDIX L:

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

**SNOW REMOVAL AND ICE CONTROL
OPERATIONAL PLAN**



**DIVISION OF BUILDING SERVICES
44825 St. Andrews Church Road
P. O. BOX 508
California, Maryland 20619**

NOVEMBER 2011

*ORIGINALLY ADOPTED IN DECEMBER 2004
(Last updated 11/28/2011)*

Board of County Commissioners for St. Mary's County

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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 15th through April 15th, 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. Vehicles are readied and pre-positioned inside the maintenance shop. 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 1/2" 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.

OPERATIONAL OVERVIEW (Cont'd)

6. Suspension of 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, contractors and/or the traveling public (i.e., during blizzard conditions at ≥ 35 mph 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 this decision. When winds reach the established threshold (sustained gale-force winds at **50 mph or greater**), or the storm severity threatens the lives of employees, DPW&T operations will be suspended. 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. In the event of extreme life threatening circumstances and in conjunction with local and State Medical Directors, the EOC may issue a **Code Blue** notice which formally suspends all emergency response operations.

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, State blanket contracts 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. Office of the Sheriff Corrections Division may be able to provide additional manpower through Work Incentive Agreements as a part of the inmate(s) Work Incentive Program.
10. Recovery Phase. Phasing down operations, secondary parking lot / sidewalk /roof clearing, addressing maintenance calls, cleaning and servicing gutters, drains, roof leaks, vehicles and equipment.
11. Post-Storm Assessment Phase. Performing an internal evaluation and assessment of storm related operational decisions.
12. Exceptions. Certain conditions may exist, which coupled with forecasted weather conditions, may result in modifications of normal priorities. 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.
13. Storm Ready. The NOAA's National Weather Service recognized St. Mary's County as southern Maryland's first **StormReady** County. The Department of Public Works & Transportation takes very seriously its commitment to provide emergency response to the citizens of St. Mary's County.

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.

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.

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.

ALERT PHASE (Cont'd)

Condition Alerts. Similar to Metcom, during the pre-operational phases, several alert conditions are utilized to ensure the appropriate level of response / mobilization is in place. The following alert conditions are set by the Building Services Manager.

- Condition Watch. Persuasive indications that a severe storm could threaten St. Mary's County.
- Condition I. Thirty-six (36) hours before effects of a storm are predicted to reach St. Mary's County.
- Condition II. Twelve (12) to eighteen (18) hours before the anticipated on-set of the storm.
- Condition III. Arrival of a storm is within 8-9 hours, or imminent. All preventive measures should have been taken. Required personnel are on standby in pre-selected locations.

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 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. 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 primary entrances is announced at this time. Airport NOTAMS are issued by the Airport Manager or FBO, as may be required. *The **Citizen Emergency Messaging System** number 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. 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.**

OPERATIONS PHASE (Cont'd)

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. Level II Operations often occur following the issuance of official **Winter Weather Advisories.**

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).** Level III Operations often occur following the issuance of an official **Winter Storm Watch or Warning.**

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.

OPERATIONS PHASE (Cont'd)

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. Level III Operations often occur following the issuance of an official **Winter Storm Watch or Warning**. A local **Declaration of a Snow Emergency** is probable once accumulations approach 8-12 inches

- 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.

Level IV (major storm) Operations. If snowfall predictions result in an official **Winter Storm or Blizzard Warning** for anticipated accumulations of between 12 and 18 inches. Involves an event which has become, or is becoming, an emergency or disaster and requires significant County and State response (local government capabilities are clearly exceeded). Operations may be performed under a **Governor Declaration** of a State of Emergency.

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

Level V (major storm) Operations. If snowfall is 18-24 inches or greater, plowing and salting will be performed continuously throughout the severe winter storm, usually under Blizzard Warning conditions. Involves a declared emergency where the State and local government are clearly overwhelmed. Public facilities structures may need to be inspected due to the weight of heavy accumulations on rooftops, equipment, canopies and entranceways. The State may request implementation of the Federal Response Plan and **Presidential Declaration**.

- 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

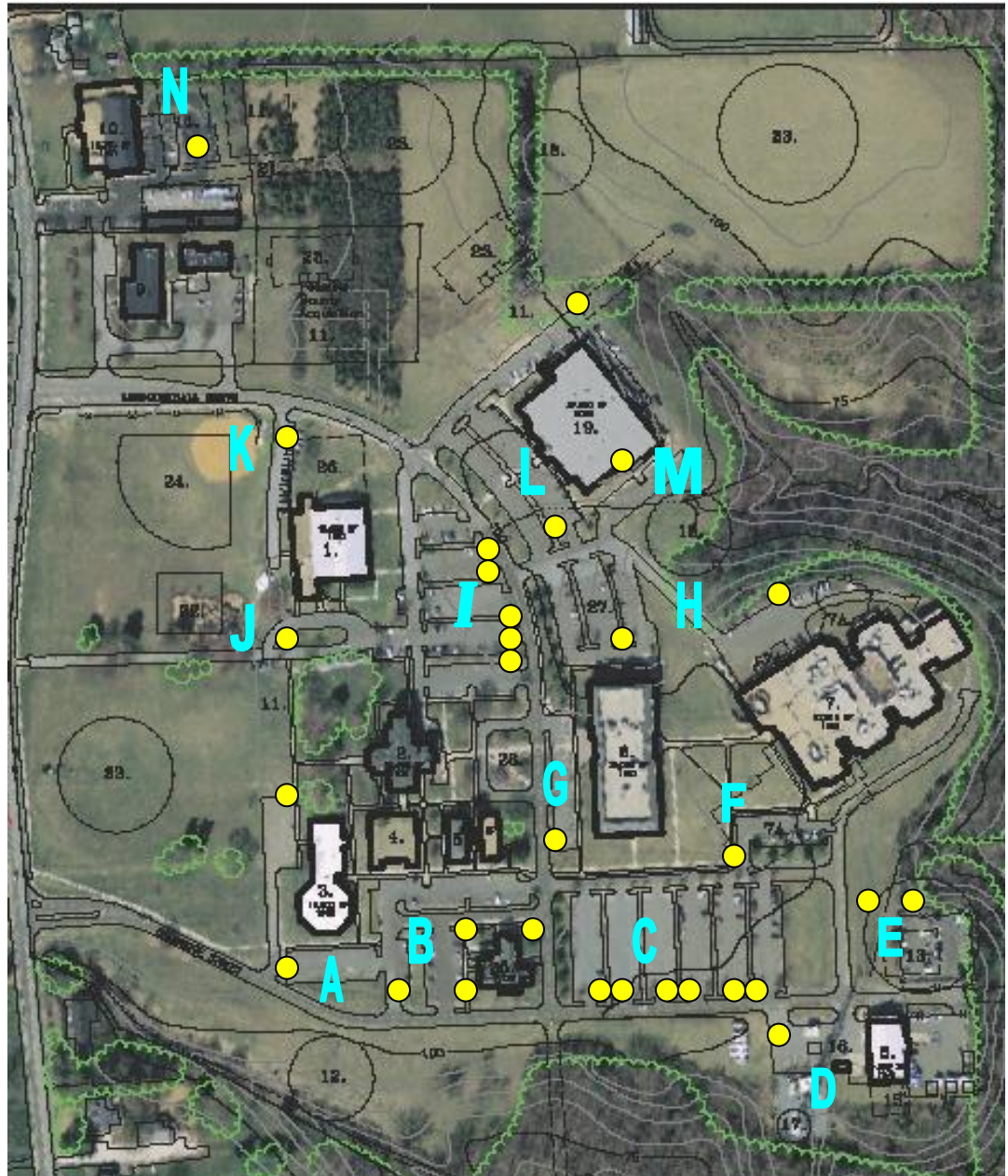
end of the storm. Expect narrowed and/or blocked parking isles, stalls, walkways, and secondary entrances due to accumulations. Snow blowers no longer can be efficiently utilized at these depths. Plowing of Priority Codes 2 and 3 Facilities takes up to **48-60 hours** to complete after the storm ends, with Recovery Phase operations completed between **5-7 days** later.

OPERATIONS PHASE (Cont'd)

Governmental Center Operations. Clearing of parking lot areas on the Governmental Center Campus shall be performed by the Recreation & Parks Department in accordance with the Responsibility Matrix shown in Appendix 1. For ease of reference, all lots on the campus have alpha-numeric signs posted that designate each lot (ie. Lot A, Lot B, Lot C.....etc) as shown on the Governmental Center Campus Plan (right).

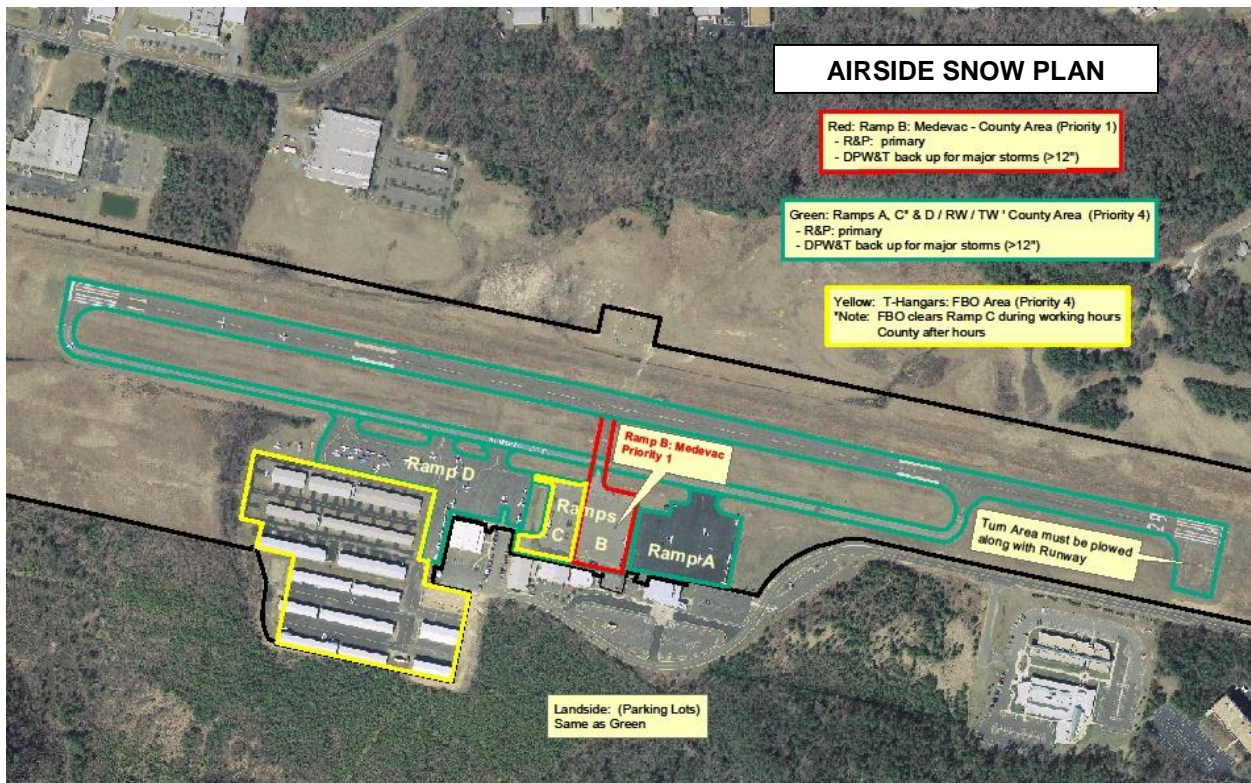
In addition, parking lot snow "piles" shall be placed in the general locations designated on the Plan (●) which are typically located at the end of parking rows, on the down-gradient side of the pavement and in close proximity to storm drain inlets.

For major storms, conditions may warrant that the parking lots be cleared / hauled by County Highways crews and/or by contractor support. Sidewalks and stairs to the County facilities are the responsibility of the Building Services Division.

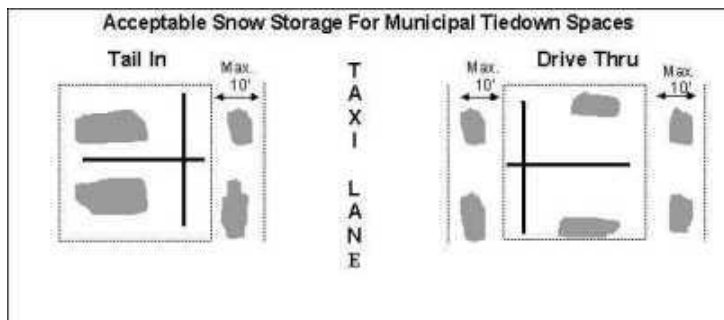


GOVERNMENTAL CENTER CAMPUS PLAN

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.



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 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.

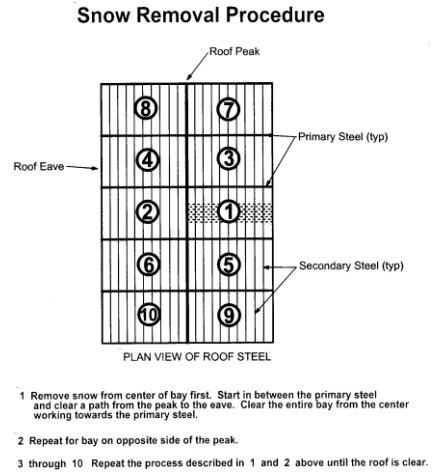
Parking lots will be plowed with the priority of visitor/commuter lots and handicap spaces being first, and employee parking as a secondary priority. It must be understood that lots with vehicles parked in them make it very difficult to do an adequate job in snow removal. Efforts will be first made to 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.

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.

SNOW REMOVAL PROCEDURES (Cont'd)

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:**

- | | |
|---|---|
| √ Cracked or split wood members | √ Bowed utility pipes or conduit attached at ceiling |
| √ Popping, cracking, and creaking sounds. | √ Sagging ceiling tiles and/or sprinkler heads pushed down below ceiling tiles. |
| √ Sagging roof members including steel bar joists, metal decking, wood rafters, wood trusses and plywood sheathing-visually deformed. | √ Doors and/or windows that pop open or are difficult to open and close. |

SNOW REMOVAL PROCEDURES (Cont'd)

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 *

Snow Depth on Roof (ft.)	Dry Snow (lbs./ft.²)	In Between Snow (lbs./ft.²)	Wet Snow (lbs./ft.²)
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:

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

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 ° F (approx.)	No Noticeable Wind		5-mph Wind		10-mph Wind		15-mph Wind		20-mph Wind	
	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	No. of Breaks
-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	

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.

SPREADING OF ABRASIVES AND CHEMICALS (Cont'd)

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.
- On call 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. Professional structural engineers are available for purposes of evaluating structures and facilities for use, re-entry and repairs.
- Debris Clearing and Removal Contract. A Blanket Purchase Order contract is in place for debris removal during emergency situations immediately after a natural or man-made disaster. The efficient clearing, removing, hauling, salt spreading for large volumes of snow and ice from roadways, parking areas, roofs, sidewalks, entrances and steps as a result of a snow event.

To be eligible for increased federal share reimbursement under the Public Assistance Program, contracts for debris removal must meet rules for Federal grants, as provided for in [44 CFR Part 13.36 Procurement](#). To be eligible for increased federal share under the Public Assistance Pilot Program award of debris removal contracts must be based on unit prices (volume or weight) and, after the initial 70-hour period, payment based on time and materials should discontinue.

- 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 / RE-ENTRY 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.

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.

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.

Damage Assessment Priorities. 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). As such, effective February 10, 2010, County Government buildings were prioritized for Damage Assessment efforts. The two severe winter storms created many instances of roof collapses, structural collapses and integrity issues with buildings county-wide. In order to ensure the safety of all county employees when returning to work, there will be a coordinated effort with Land Use and Growth Management, the Department of Public Works and Transportation and the Department of Public Safety to assess all critical facilities first and then work through all county buildings. Priority will be ordered from an operational standpoint. All facilities necessary under each operation will be assessed in the following order:

PRIORITY 1

Public Safety: Emergency Communications Center and Emergency Back-up Center
Sheriff's Office: Patuxent Building, Detention Center and Carver Building
Department of Public Works and Transportation (All necessary facilities)
Advanced Life Support Building (Leonardtwn)
Board of County Commissioner's: Chesapeake Building (Finance and Legal)
Potomac Building (Information Technology, Human Resources, Human Services, PIO)
Metropolitan Commission (Water and Sewer)
Recreation and Parks Operational Facilities

PRIORITY 2

Health Department
Circuit and District Court Buildings (Social Services included in District)
Department of Aging Facilities (Ripple, Loffler, Northern)
Libraries (Leonardtwn, Lexington Park, Charlotte Hall)
Recreations and Parks (Activity Facilities)
Museums
The Housing Authority of St. Mary's County
Marcey House
Tourism (Welcome Center, Chamber of Commerce)

RECOVERY / RE-ENTRY PHASE (Cont'd)

Eligibility of Building Safety Inspections Supporting Emergency Work. FEMA provides guidance on the eligibility of building safety inspections under the Federal Emergency Management Agency (FEMA) Public Assistance program. FEMA can consider the increased demand for building safety inspection services as an eligible emergency protective measure if such inspections are related to the disaster and are necessary to establish if damaged structures pose an immediate threat to life, public health or safety, or improved property. Short-term allowable costs that may be reimbursed include, but are not limited to: Overtime (but not straight-time) for permanently employed staff and the hiring and/or contracting of additional staff. Generally, building safety inspections consist of a thorough visual examination, inside and out, to determine whether a building is safe for use, potentially dangerous (i.e., limited entry), or unsafe. Building safety inspections primarily address structural safety, but may also address nonstructural risks such as electrical hazards, hazardous materials (including mold and asbestos), or fire safety issues.

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**).

WINTER WEATHER TERMINOLOGY

The U.S. Department of Commerce National Oceanic and Atmospheric Administration National Weather Service uses several terms WARN the public of more serious winter weather situations that may cause impossible traveling conditions and could pose a threat to life and property. Winter weather terms to be aware of include the following:

Winter Storm Watch - Means there is a POTENTIAL (>40%) for snow accumulations of 4-7 or more inches, or a ¼" of glaze ice from freezing rain, or a dangerous mixture of snow, ice and wind. Heavy snow 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 - Means that conditions ARE OCCURRING or there is a high probability (>70%) for snow accumulations of 4 or more inches, or a ¼" of glaze ice from freezing rain, or a dangerous mixture of snow, ice and wind to occur within a specific timeframe. A warning means that the storm can cause significant disruption to normal daily routines and be potentially life-threatening. Usually, snow 6 inches or more in 12 hours or less; or 8 inches or more in 24 hours can be anticipated.

Blizzard Warning - Means that winds of 35 mph or greater AND significant snow or blowing snow will produce visibilities of between zero and less than 1/4 mile. Temperatures will be below 30 degrees with wind chill temperatures below zero. Blizzards are usually accompanied by a foot or more of snow. These are the most dangerous winter storms and can be especially severe when combined with temperatures below 10° F.

Wind Chill Warning - Means that the wind chill temperature is expected to fall below -30° F (30 degrees below zero) for at least 3 hours. At these temperatures, exposure without protective clothing will quickly lead to frostbite and/or hypothermia. Longer exposures can be fatal.

High Wind Warning - Means winds of 40 mph or greater for at least one hour; or wind gusts 58 mph or greater. Trees and power lines can be blown down. May be preceded by a High Wind Watch if the strong winds are not expected to occur for at least 12 hours.

Advisories are issued when winter conditions are expected to be enough to cause inconveniences but will not be life threatening or cause significant disruptions such as:

Winter Weather Advisory - Means that accumulations of 2-4 inches, but less than 7" can be expected, that freezing rain or drizzle is expected to accumulate on untreated paved surfaces such as roads and sidewalks, and/or when blowing and drifting snow is causing hazardous road and driving conditions. Snowfall is expected to begin within the next 12 hours.

Wind Chill Advisory - Means that the wind chill temperature is expected to reach -15 ° F (15 degrees below zero) for at least 3 hours. (Same exposure concerns as a Wind Chill Warning).

Wind Advisory - Means that winds of 30 mph or greater; or wind gusts 45 mph or greater can be expected.

Blowing Snow Advisory - Means that the visibility will be significantly reduce, or when the roads have become snow covered over a large area.

SNOW DISPOSAL GUIDELINES

Finding a place to dispose of collected snow poses a challenge to municipalities and businesses as they clear roads, parking lots, bridges, and sidewalks. There are several steps that communities can take to minimize the impacts of snow disposal on public health and the environment. These steps will help avoid the costs of a contaminated water supply, degraded waterbodies, and flooding.

Avoid dumping of snow into any waterbody, including rivers, the ocean, reservoirs, ponds, or wetlands. Avoid dumping snow in sanitary landfills and gravel pits. Avoid disposing of snow on top of storm drain catch basins or in stormwater drainage swales or ditches. Snow combined with sand and debris may block a storm drainage system, causing localized flooding. A silt fence or equivalent barrier should be placed securely on the down-gradient side of the snow disposal site.

If upland disposal sites have been exhausted, snow may be disposed of near waterbodies. A vegetated buffer of at least 50 feet should still be maintained between the site and the waterbody in these situations. Under extraordinary conditions, when all land-based snow disposal options are exhausted, disposal of snow that is not obviously contaminated with road salt, sand, and other pollutants may be allowed in certain waterbodies under certain conditions.

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.

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.

Per FEMA Project Specialist (February 7, 2011), equipment rates used for reimbursement covers the cost of fuel and maintenance on all County vehicles used during a storm event. Therefore, separate accounting of fuel and maintenance costs is not needed for review of eligible costs.

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.*

ATTACHMENT 1: RESPONSIBILITY MATRIX

<u>SITE / LOTS</u>	<u>PRIORITY CODE</u>	<u>SIDEWALKS / STEPS</u>	<u>DRIVEWAYS / PARKING</u>
Building #46 / Lots F & M Adult Detention Center	1	BS / RP	DPWT / RP
Building #95 / Lot L 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 / Lot D Wicomico Building Maint. Facility	1	BS / RP	DPWT / RP
Maryland State Police Medevac / Medstar Helicopter Pads	1	BS / RP	DPWT / RP
Building #02 / Lot C 911 Communications Center	1	BS	DPWT / RP
Building #01 / Lot B Control Center	1A	BS / RP	DPWT / RP
Building #28 / Lot I Potomac Building	1A	BS / RP	DPWT / RP
Building #27 / Lot B Chesapeake Building	1A	BS / RP	DPW / RP
Building #38 / Lot E 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 / Lots G & H Carter State Office 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 Activity Center	2	BS / RP	RP
Building # 25 / Lot B Garvey Senior Center	2A	BS / RP	DPWT / RP

ATTACHMENT 1: RESPONSIBILITY MATRIX (Cont'd.)

<u>SITE / LOTS</u>	<u>PRIORITY CODE</u>	<u>SIDEWALKS / STEPS</u>	<u>DRIVEWAYS / PARKING</u>
Northern Senior Center #6	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 / Lot N 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
Great Mills Swimming Pool #3	3	BS/RP	RP
R & P Annex (Leonardtown Middle School)	3	RP	RP
Building #60 Margaret Brent Gym	3	BS / RP	RP
Building #57 / Lots J & K 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 Regional Airport	4	N/A	DPWT / RP
Non-Priority Ramp Areas	4	N/A	RP
Airport Hangar Building #64	4	BS	RP
Runway and Taxiway	4	N/A	DPWT

ATTACHMENT 2: PRIORITY CALLOUT LIST

BUILDING SERVICES

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

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

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

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

J.R. Brown
(301) 475-2753 or (240) 577-0669 (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
(301) 934-8676

Ralph Broom
(240) 298-8005

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

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.

**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							
Total	0	0	0	0			
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		

SAMPLE FEMA SCHEDULE OF EQUIPMENT RATES (9-15-2010)

<u>Cost Code</u>	<u>Equipment</u>	<u>Size</u>	<u>Division</u>	<u>Hourly Rate</u>
8331	Graders	12'	Highways	\$58.00 / hr
8394 + 8453	Loader with plow	4 cy	Highways	\$52.00 + \$18.50
8721	Dump Trucks	10 cy	Highways	\$45.00 / hr
8453	Truck-mounted snow plows	n/a	Highways	\$18.50 / hr
8455	Sand Spreaders, tailgate chassis	n/a	Highways	\$ 3.30 / hr
8801	Pick-up Trucks	1/2 ton	C&I	\$14.00 / hr
8802	Pick-up Trucks	1 ton	Highways	\$20.00 / hr
8559	Snow Throwers, walk-behind	>5hp	Building Services	\$ 7.00 / hr

SNOW AND ICE CONTROL OPERATIONAL PLAN

Conservation

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

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

File: 2010-09
Date: 15th 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 9th of February and again on the 12th 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

8. HEALTY 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 12" 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 torpedo heater.

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

reasonable. This deflection is a "spring action" within the beams and will allow the roof section 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 12th 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 8" 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 (911CC)
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 1957 and has 14" flat plate open web joists at 30" on centers 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.

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 410-610-4783.



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. 22648, Expiration Date: 3/15/2010

ATTACHMENT 6: INTRADEPARTMENTAL GUIDELINES

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

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