

Washington Metropolitan Area Transit Authority
Board Action/Information Summary

Action Information

MEAD Number:
201728

Resolution:
 Yes No

TITLE:

Fatigue Risk Management System (FRMS) Update

PRESENTATION SUMMARY:

This presentation provides an update of the Fatigue Risk Management System (FRMS) program and its key elements.

PURPOSE:

The purpose of this presentation is to update the Safety and Security Committee on the FRMS program progress, including program elements to be implemented as part of the program.

DESCRIPTION:

WMATA has made progress in implementing the FRMS program, including establishing the FRMS Policy Instruction which provides overall guidance on implementation of the program elements. The Hours of Service (HOS) policy is based on results from the bio-mathematical scientific fatigue models. HOS guidelines set standards for rail and bus operators with plans to develop full guidelines for other safety sensitive work. Program elements underway include gathering of additional field data, an improved incident investigation protocol for fatigue-related factors, an FRMS Dashboard and a secondary employment policy.

Key Highlights:

- Reducing the risk due to fatigue remains one of Metro's primary safety goals. Implementation of the FRMS is ongoing.
- HOS rule violations for Consecutive days have decreased by up to 99% from Q1 to Q4 of 2015.
- Four (4) Fatigue Training classes will be rolled out by Fall 2016.

Background and History:

Fatigue Risk Management System (FRMS)

Metro's decision to implement a FRMS remains a first among U.S. transit authorities. In April of 2012, Metro contracted Institutes for Behavioral Resources (IBR) to support the development of FRMS. In November of 2013, the General Manager/Chief Executive Officer formally approved the Fatigue Risk Management Policy (P/I 10.6 Attached). By August of 2014, Metro approved Hours of Service (HOS) Limitations for Prevention of Fatigue Policy (P/I 10.7 Attached). These HOS limitations place restrictions on work and

rest hours for safety critical personnel in an effort to mitigate fatigue.

Well-rested, alert employees are critical to safe and productive operations. An organization with safety-sensitive, round-the-clock operations has a responsibility to consider and manage the risk associated with impairment due to fatigue. The FRMS is a science and data-based approach to systematically reducing the risk of fatigue-related performance impairment. This approach recognizes fatigue as a health and safety concern and is increasingly used in safety-critical transportation operations. Historically, the risk associated with fatigue was largely managed by limiting the number of hours worked. However, there is increasing understanding that hours-of-service limitations by themselves may not achieve the objective of managing risk from fatigue. The FRMS includes a number of programs and initiatives that are intended to reduce the risk of fatigue throughout the organization.

FRMS risk mitigation strategies are informed by the metrics derived from individual initiatives. Scientific tools are also used to estimate fatigue risk, and FRMS program metrics are additionally based on the biomathematical analysis of fatigue risk associated with work schedules. The FRMS program uses the Sleep, Activity, Fatigue and Task Effectiveness Fatigue Avoidance Scheduling Tool (SAFTE-FAST) biomathematical model of fatigue and application.

The biomathematical analysis of fatigue considers the complex interaction of the physiological factors known to increase the risk of fatigue. Given work and/or sleep schedule data, biomathematical modelling returns an objective estimate that can then be used in the prospective or retrospective analysis of schedules. A Federal Railroad Administration (FTA) study demonstrated that SAFTE-FAST-modeled effectiveness below 70% is associated with an increased risk of human factors related incidents.

Discussion:

FRMS

An FRMS Policy Instruction, signed in 2013, established the overall program goals, steering committees, and the relationship of the FRMS to existing safety programs. Per the FRMS Policy, the program includes a number of individual initiatives, each designed to reduce the risk of fatigue-related impairment in the workplace. FRMS initiatives are currently being established and rolled out and program elements are in various stages of maturity. Individual initiatives are associated with program metrics that, once reviewed by Steering Committees, will guide the improvement of individual programs and reduce the overall risk of fatigue at the Authority. One FRMS metric of interest is the proportion of work time spent at effectiveness levels below 70%. The continuous improvement process is being established for individual initiatives as they're being rolled out.

Hours of Service Rules

HOS rules are an important part of a comprehensive fatigue risk management approach and are intended to limit the risk of fatigue-related impairment by limiting work hours in the day and protecting a daily opportunity for sleep. The HOS policy development process was science-based and informed by the scientific peer-reviewed literature, industry best practices, and biomathematical analysis of fatigue risk associated with actual and planned schedules for safety-sensitive and safety critical positions. The four

(4) metrics that comprise the HOS policy set limits for the maximum daily hours of service, the minimum daily scheduled off-duty period and the minimum days off after consecutive days worked. Analysis of HOS compliance is possible for those workgroups with automated collection of daily work start/end time data (about 48% of safety-sensitive positions). The complete list of jobs that are covered by the HOS policy are listed in Appendix A of P/I 10.7.

For workgroups in Bus Transportation (BTRA) and Rail Transportation (RTRA), all HOS violations are trending downward. However, the reduction in violations of the consecutive workday rule was most significant and was 99% for BTRA and 95% for RTRA in the last months of 2015. Average estimated work time spent at low performance effectiveness was stable in BTRA: 1.3% in 1.0% in Q4. In RTRA work time estimated to be spent at low effectiveness levels was 3.8 % in Q1 and 4.5% in Q4 of 2015. A number of measures are in place to support continued compliance. Reports on HOS violations have been made available on the FRMS intranet page and the FRMS Manager offers additional coaching for schedulers and managers, as needed. Additional reports on FRMS metrics are being designed for use by operational managers.

Education, Training and Awareness

Updated training on Fatigue Risk Management strategies is being rolled out to safety-sensitive personnel. Additional fatigue management training is also in development. A combination of computer-based and instructor-led training will be used to refresh training delivery. Testing of delivery and tracking platforms for the computer-based training is ongoing. The proportion of safety-sensitive personnel with completed training will be a metric of interest from within this program.

Activities to promote individual FRMS initiatives within the organization are ongoing, include the distribution of fatigue and FRMS-related safety talks, and a presence at events for safety-sensitive personnel. The FRMS Intranet page has been designed as source for materials related to the program, and includes program videos, awareness-building activities, contact information as well as access to reports in fatigue-related metrics. Activities to promote awareness will continue to be tailored to the initiative and target group.

Investigating the Role of Fatigue in Incidents

Current incident data collection tools used within the Safety Measurement System (SMS) process are being modified to enable investigators to capture additional information pertaining to signs of fatigue and work and sleep schedules. Investigators, WMATA employees such as Street Operations Managers, Rail Superintendents and Safety personnel will receive additional specialized training on fatigue in incidents. Safety Measurement Systems are being updated to accommodate tools for investigators. A biomathematical modelling application to assist investigators in considering the role of fatigue in incidents is currently in development. The FRMS office will be launching computer and instructor based training on the methodology and redesigned data-gathering systems for capturing the role of fatigue in reported incidents. Investigations will include observations on fatigue-related behavior and the potential role of fatigue in the incident.

Quiet Room

The Recuperative Break and Quiet Room initiative is based on evidence that supplemental sleep can limit the risk of fatigue-induced impairment and help sustain

performance levels. This initiative establishes procedures that would enable off-duty personnel to sleep in designated Quiet Rooms. One Quiet Room is already in use for Rail Operation Control Center (ROCC) personnel. Quiet Rooms at Landover and Shepherd's Parkway are pending installation of final security measures. Pilot data collected from users of the Quiet Rooms will guide improvements to the Recuperative Break initiative.

Medical Certification and Sleep Disorders

Untreated sleep disorders significantly increase the risk of impairment due to fatigue. Maturation of this initiative will include establishing a formal relationship between sleep disorders management and the FRMS, to include the development of metrics indicative of fatigue risk.

FUNDING IMPACT:

No impact on funding. For information purposes only.	
Project Manager:	Lou Brown, Acting Chief Safety Officer
Project Department/Office:	SAFE

Operating budget within the approved FY2016 Operating Budget.

TIMELINE:

Previous Actions	<ul style="list-style-type: none"> • FRMS Policy/Instruction issued on November 2013 • Hours of Service (HoS) Policy/Instruction issued on August 2014 • Previous FRMS update to Committee on April 2015
Anticipated actions after presentation	<ul style="list-style-type: none"> • Continuing implementing FRMS

RECOMMENDATION:

To inform the Board's Safety & Security Committee of the status of the Fatigue Risk Management System (FRMS).



POLICY/INSTRUCTION: 10.6

FATIGUE RISK MANAGEMENT POLICY

SUPERSEDES: N/A

APPLICABLE TO: All employees and contractors

1.00 PURPOSE

The Washington Metropolitan Area Transit Authority (Metro) will work to prevent and mitigate fatigue and promote optimal alertness and vigilance by establishing and maintaining a Fatigue Risk Management System (FRMS), acting within the framework of the Metro System Safety Program with special focus on safety-sensitive and safety-critical Metro and contractor personnel.

2.00 SCOPE

The Metro FRMS will apply to all employees, especially safety-sensitive and safety-critical employees and contractors, including employees serving as train and bus operators.

3.00 DEFINITIONS

- 3.01 Body clock (or “circadian” clock) – the part of the brain that coordinates the body’s internal functions with the 24-hour day.
- 3.02 Circadian rhythm – any of the body’s functions synchronized to the 24-hour day. For example, the circadian rhythm of alertness is at its lowest during the night and at its highest in the late afternoon.
- 3.03 Fatigue – a physiological state characterized by a lack of alertness and reduced mental and physical performance that is often accompanied by sleepiness.
- 3.04 Fatigue Risk Management System (FRMS) – a program to measure and manage fatigue-related risk to the safety of operations. The FRMS is driven by science and data that can measure and address fatigue risk. Components of a FRMS typically include multiple approaches for reducing fatigue-related risk, including employee education and training; data collection and analysis; review of employee work schedules and specific policies and guidance materials.
- 3.05 FRMS Steering Committees
 - (a) FRMS Operational Committee – receives and evaluates fatigue metrics, deliberates on fatigue risk mitigation in the operational setting and issues recommendations for the FRMS Executive Committee. It is also responsible for the review and renewal of each of the FRMS program elements.
 - (b) FRMS Executive Committee – recommends management action items intended to mitigate fatigue risk. Its recommendations take into consideration the evaluation of fatigue risk as reviewed by the FRMS Operational Committee.

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POLICY/INSTRUCTION: 10.6

FATIGUE RISK MANAGEMENT POLICY

SUPERSEDES: N/A

APPLICABLE TO: All employees and contractors

- 3.06 Safety-Critical work – a job where performance regularly and directly impacts the safety of the public, other employees or both.
- 3.07 Safety-Sensitive work – a job where there is a potential of personal harm, but limited risk to the public or other employees.

4.00 RESPONSIBILITY

- 4.01 The Department of System Safety & Environmental Management (SAFE) is responsible for implementing the policy and procedures as herein outlined.
- 4.02 Individual departments with safety-sensitive and safety-critical positions are responsible for compliance with the components of the FRMS impacting their employees.
- 4.03 The FRMS Executive Committee has the authority to carry out required fatigue risk mitigations as coordinated and managed by SAFE and the Chief Safety Officer “CSO”.
- 4.04 The FRMS Operational Committee reports directly to SAFE and the Chief Safety Officer (CSO). The composition of the FRMS Operational Committee reflects the shared responsibility of individuals, labor and management in the management of fatigue-related risk. The expertise of the Operational Committee is able to customize fatigue countermeasures to the various safety-sensitive and safety-critical work environments at Metro.
- 4.05 Effective fatigue risk management is a shared responsibility between management, labor and individual personnel. Representatives of locals 922, 689, 639, 2 and the Fraternal Order of Police (FOP) are permanently invited guests of the Operational Committee.
- 4.06 The responsibilities of the FRMS Steering Committees include:
 - (a) Initiation of a Fatigue Risk Management System at Metro, including establishing appropriate fatigue risk management policies;
 - (b) Mitigation based on monitoring: development, implementation and monitoring of FRMS performance metrics (e.g., safety data, reporting, accident review, close call review, development of SMS-based monitoring systems);
 - (c) Design, analysis and reporting of studies that measure personnel fatigue, for the identification of hazards, or for monitoring the effectiveness of mitigations. Studies may be contracted out; however, the FRMS Steering Committees are responsible for ensuring that they are conducted with the highest ethical standards, meet the requirements of the FRMS, and are cost-effective;
 - (d) Development, updating and delivery of FRMS education and training materials and the development and maintenance of strategies for effective communication with all personnel.

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FATIGUE RISK MANAGEMENT POLICY

SUPERSEDES: N/A

APPLICABLE TO: All employees and contractors

5.00 POLICIES AND PROCEDURES

- 5.01 Fatigue is a normal part of daily life that varies principally by the amount and quality of sleep obtained (both within the daily sleep cycle and, where applicable, over a period of days or weeks prior) in combination with the “body clock.” The effects of fatigue may be exacerbated by workload and other stressors. As part of establishing a Fatigue Risk Management System, each Metro and contractor employee will be provided working conditions that support the prevention and mitigation of fatigue, undergirded by appropriate education and training.
- 5.02 Metro and contractor employees are encouraged to take advantage of opportunities for sleep, and Metro managers and supervisors will model appropriate work/sleep behaviors in the interest of a positive safety culture.
- 5.03 Employees of Metro and its contractors assigned to safety-sensitive and safety-critical positions will be subject to appropriate restrictions on work hours and conflicting outside employment as needed to support meaningful opportunities for sleep, taking into consideration the normal requirements of the individual’s private life. Initial efforts focus on employees in occupations identified as “safety critical” through a hazard assessment process.
- 5.04 Restrictions on work hours shall, to the extent feasible, (i) be based on scientific knowledge regarding the effects of sleep loss and normal body clock (“circadian”) phases, (ii) take into consideration restrictions applicable to individuals performing analogous duties in other work domains, and (iii) include appropriate recognition of typical demands of personal and family life that can conflict with opportunities for sleep.
- 5.05 Restrictions on work hours will be supported by management systems that effectively control schedules, protect needed opportunities for sleep, and document for follow-up any exceptions to intended work/rest patterns—including provisions for recovery following any unavoidable emergency situations.
- 5.06 Metro will continue development of its medical fitness-for-duty program that includes protocols for identification and management of sleep disorders among safety-sensitive employees. Further, Metro will verify, to the extent appropriate, that contractor employees engaged in safety-sensitive functions are subject to similar programs.
- 5.07 Metro will evaluate the need for, and feasibility of, additional fatigue risk management measures, such as, but not limited to, (i) opportunities for napping between shifts and at breaks, (ii) policies for no-fault mark-offs under controlled conditions when employees report extreme fatigue due to unexpected life events, and (iii) configuration of facilities and structuring of work practices to encourage alertness.
- 5.08 An effective FRMS will meet the needs of safety and security consistent with effective delivery of Metro transportation services, while undergirding a positive safety culture. Inclusion of employee representatives in FRMS planning throughout the system life-cycle will foster development of responsive and effective solutions.

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FATIGUE RISK MANAGEMENT POLICY

SUPERSEDES: N/A

APPLICABLE TO: All employees and contractors

5.09 The FRMS will be evaluated and adjusted periodically based upon (i) review of data defined by program metrics and (ii) safety results, as evidenced by accident rates and investigatory findings for accidents and precursor events.

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POLICY/INSTRUCTION: 10.7/1
SUPERSEDES: 10.7/0

HOURS OF SERVICE LIMITATIONS FOR PREVENTION OF FATIGUE
APPLICABLE TO: All Metro Employees

1.00 PURPOSE

The purpose of this policy/instruction (P/I) is to mitigate the risk of fatigue impacting employees who perform safety-critical functions by restricting the hours of service of such employees, and thereby reducing the potential for accidents and injuries that may be caused by fatigue. Implementation of limitations on the hours of service of employees who perform safety-critical work will reduce the risk that fatigue could result in accidents and injuries affecting co-workers and the public. This action constitutes an essential element of the Washington Metropolitan Area Transit Authority (Metro) Fatigue Risk Management System, as described in [P/I 10.6 – Fatigue Risk Management Policy](#).

2.00 SCOPE

2.01 This P/I applies to all Metro employees who perform safety-critical functions as a part of the essential functions of their job based on the job description. The Deputy General Manager Operations and Assistant General Manager (Bus Services), with concurrence from the Chief Safety Officer, will be responsible for reviewing, designating and maintaining the jobs listed in Appendix A. Appendix A sets forth the positions so identified during the initial hazard assessment. Managers are encouraged to apply similar limitations to the hours of employees who perform other safety-sensitive work, where appropriate and feasible, in the interest of personal safety, health and productivity.

2.02 As of the date of this P/I, designated safety-critical employees perform job functions in the following organizational elements:

- (a) Rail Transportation (RTRA)
- (b) Bus Transportation (BTRA)
- (c) Bus Maintenance (BMNT)
- (d) Transportation Infrastructure and Engineering Services (TIES), designated immediate staff and designated positions in the following:
 - (1) Rail Car Maintenance (CMNT)
 - (2) Elevator and Escalator Maintenance (ELES)
 - (3) Systems Maintenance (SMNT)
 - (i) Automatic Train Control (ATC)
 - (ii) Communications (COMM)
 - (iii) Power (PWR)

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SUPERSEDES: 10.7/0	APPLICABLE TO: All Metro Employees

- (4) Track and Structures (TRST)
- (e) Metro Transit Police Department (MTPD)

3.00 DEFINITIONS

- 3.01 **Covered Employee** – An employee who performs any safety-critical work during a duty tour or period of consecutive days limited by this P/I, whether or not commingled with work that is not safety-critical.
- 3.02 **Employee** – (i) An employee of Metro; or (ii) an employee of a Metro contractor or subcontractor whose position has been identified as falling within this P/I by the CFO or AGM under whose area of responsibility the contract work is performed.
- 3.03 **Duty Tour** – The elapsed period from the time the employee initially reports for work to the time the employee is finally released from duty. The duty tour may include one or more interim periods of release.
- 3.04 **Excess Service** – The period of service by a covered employee that exceeds any Hours of Service Limitation set forth in this P/I.
- 3.05 **Interim Period of Release** – A work break, i.e., off-duty time, of one hour or greater that falls between the time the employee initially reports for duty after the required daily period off duty and the time the employee is finally released.
- 3.06 **Night Work** – Any period of on-duty time occurring during the hours 00:01 to, and including, 03:59 hours (military or astronomical time).
- 3.07 **Off-Duty Time** – Time during which an employee is free to leave the workplace, engage in personal activities, and obtain rest. Off-duty time includes interim periods of release, mandatory off-duty periods, days off, vacation days and other periods not defined as “on-duty time.”
- 3.08 **On-Duty Time** – Time actually spent in the service of Metro, whether or not compensated, including time performing safety-critical tasks and other tasks, time “standing by” to perform duties when instructed, and work breaks of less than one hour.
 - (a) On-duty time does not include any interim period of release of one hour or greater.
 - (b) On-duty time includes time spent in transportation to and from a work location, but does not include travel time to/from home to work or work to home.
 - (c) On-duty time includes time devoted to Metro training.

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(d) On-duty time does not include constructive time, i.e., time not actually worked but used as a basis for computing wages under a collective bargaining agreement (e.g., “guarantee” or “arbitrary payment”).

3.09 **Safety-Critical Work** – Job duties/tasks performed on a regular basis that directly impacts the safety of the public, other employees or both.

3.10 **Safety-Sensitive Work** – Refers to a job where performance can affect at least the safety of the employee performing the function. Safety-critical work is a subset of safety-sensitive work. Positions are designated as safety-sensitive under Metro’s alcohol and drug policy.

3.11 **24-Hour Period** – A period commencing when the employee initially reports for duty after receiving the required off-duty time, or more, and consisting of 24 hours by the clock (adjusted to account for transitions to/from daylight savings time).

4.00 RESPONSIBILITY

4.01 The Department of Safety and Environmental Management (SAFE) is responsible for oversight and interpretation of this P/I.

4.02 The DGMO, CFO, AGM (Bus Services), AGM (TIES), AGM (for Access Services), Managing Director Rail Operations and Chief of the Metro Transit Police will manage implementation of this P/I in their respective organizations. Managers of individual departments with safety-sensitive and safety-critical positions are responsible for compliance with the components of this P/I, as applicable.

4.03 The Chief Financial Officer (CFO) is responsible for including in the process of budget development consideration of staffing requirements related to avoidance of excess hours of service.

4.04 Employees will record their time accurately and consistently for purposes of complying with this P/I.

4.05 The Office of Labor Relations will work collaboratively with the respective labor organizations representing safety-critical employees to ensure compatibility of labor practices and agreements with this P/I.

4.06 SAFE will conduct an annual audit to verify compliance with hours of service limits and accurate reporting of related metrics. Audit results will be shared with the department head and any remedial plans will be jointly developed and monitored.

4.07 The MTPD Office of Emergency Management and SAFE will review and make adjustments to subsequent issuances of the Emergency Operations Plan, the Severe Weather Operations Plan and related documents to address mitigation of fatigue in all departments employing covered employees during incidents within their purview.

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SUPERSEDES: 10.7/0	APPLICABLE TO: All Metro Employees

4.08 Supervisors will ensure the accurate recording of a covered employee’s hours of work for Metro in compliance with this P/I.

5.00 POLICIES AND PROCEDURES

5.01 Transportation and Bus Maintenance, general

- (a) Covered employees: This section addresses rail and bus operators and their immediate supervisors, station managers and incumbents of other specific covered positions noted in Appendix A. This section also addresses bus maintenance personnel who are incumbents of specific covered positions noted in Appendix A.
- (b) Maximum daily hours of service:
 - (1) A duty tour will not exceed 14 hours, including any period(s) of interim release.
 - (2) No employee may be on duty more than 12 hours, consecutively or aggregately, in any given duty tour.
- (c) Minimum daily scheduled off-duty period: All safety-critical employees will have normal work schedules that provide a minimum of 10 consecutive hours off duty before returning to the next day’s assignment.
- (d) Minimum days off after consecutive days worked:
 - (1) No employee may perform work on more than six consecutive days. If an employee performs work on six consecutive days, that employee must receive at least 24 hours off duty before reporting for the next duty tour.
 - (2) The normal construction of these limitations will refer to calendar days. However, for an employee whose regular assignment commences before midnight and ends thereafter, “day” shall refer to the 24-hour period commencing at the beginning of the first duty tour in the sequence.
- (e) Scheduling targets for assignments including night work:
 - (1) Night work presents special safety challenges, because it interferes with the normal phases of the body clock (circadian phases), requiring the employee to maintain performance at a time the body normally wishes to sleep and forcing opportunities for sleep into periods less favorable for quality sleep.
 - (2) Management will staff night work in such a way that, to the maximum extent practicable, the duration of duty tours including night work will be limited (including avoidance of unscheduled overtime whenever possible).

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5.02 **Bus Operations Control Center (BOCC)**

- (a) Covered employees: This section addresses BOCC specialists and incumbents of other specific covered positions noted in Appendix A.
- (b) Maximum daily hours of service:
 - (1) The elapsed length of any duty tour may not exceed 12 hours, including any period(s) of interim release.
 - (2) Within any duty tour, no employee may be on duty more than 12 hours.
- (c) Minimum daily scheduled off-duty period: All safety-critical employees will have work schedules that provide a minimum of 12 consecutive hours off duty before returning to the next day's assignment.
- (d) Minimum days off after consecutive days worked:
 - (1) No employee may perform work on more than six consecutive days. If an employee performs work on six consecutive days, that employee must receive at least 24 hours off duty before reporting for the next duty tour.
 - (2) The normal construction of these limitations will refer to calendar days. However, for an employee whose regular assignment commences before midnight and ends thereafter, "day" will refer to the 24-hour period commencing at the beginning of the first duty tour in the sequence.

5.03 **Rail Operations Control Center (ROCC)**

- (a) Covered employees: This section addresses ROCC controllers and incumbents of other specific covered positions noted in Appendix A.
- (b) Maximum daily hours of service:
 - (1) The elapsed length of any duty tour may not exceed 12 hours, including any period(s) of interim release.
 - (2) Within any duty tour, no employee may be on duty more than 12 hours.
- (c) Minimum daily scheduled off-duty period: All safety-critical employees will have work schedules that provide a minimum of 12 consecutive hours off duty before returning to the next day's assignment.

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- (d) Minimum days off after consecutive days worked:
 - (1) No employee may perform work on more than six consecutive days. If an employee performs work on six consecutive days, that employee must receive at least 24 hours off duty before reporting for the next duty tour.
 - (2) The normal construction of these limitations will refer to calendar days. However, for an employee whose regular assignment commences before midnight and ends thereafter, "day" will refer to the 24-hour period commencing at the beginning of the first duty tour in the sequence.

5.04 Transit Infrastructure and Engineering Services (TIES)

- (a) Covered employees: This section addresses TIES employees and incumbents of other specific covered positions noted in Appendix A.
- (b) Maximum daily hours of service:
 - (1) The elapsed length of any duty tour may not exceed 14 hours, including any period(s) of interim release.
 - (2) Within any duty tour, no employee may be on duty more than 14 hours.
- (c) Minimum daily scheduled off-duty period: All safety-critical employees will have work schedules that provide a minimum of 10 consecutive hours off duty before returning to the next day's assignment.
 - (1) No employee may perform work on more than six consecutive days. If an employee performs work on six consecutive days, that employee must receive at least 24 hours off duty before reporting for the next duty tour.
 - (2) The normal construction of these limitations shall refer to calendar days. However, for an employee whose regular assignment commences before midnight and ends thereafter, "day" shall refer to the 24-hour period commencing at the beginning of the first duty tour in the sequence.

5.05 Metro Transit Police Department (MTPD)

- (a) Covered employees: This section addresses MTPD-sworn police officers and officials, as noted in Appendix A.
- (b) Maximum daily hours of service:
 - (1) A duty tour will not exceed 14 hours, including any period(s) of interim release.

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10.7/1

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FOR PREVENTION OF FATIGUE**

SUPERSEDES: 10.7/0

APPLICABLE TO: All Metro Employees

- (2) No employee may be on duty more than 12 hours, consecutively or aggregately, in any given duty tour.
- (c) Minimum daily scheduled off-duty period: All MTPD safety-critical employees will have work schedules that provide a minimum of 10 consecutive hours off duty before returning to the next day's assignment.
- (d) Minimum days off after consecutive days worked:
 - (1) No employee may perform work on more than six consecutive days. If an employee performs work on six consecutive days, that employee must receive at least 24 hours off duty before reporting for the next duty tour.
 - (2) The normal construction of these limitations will refer to calendar days. However, for an employee whose regular assignment commences before midnight and ends thereafter, "day" will refer to the 24-hour period commencing at the beginning of the first duty tour in the sequence.
- (e) MTPD exceptions:
 - (1) An exception to 5.05 (b), (c) and (d) was given until the vacancy rate is brought down.
 - (2) An exception to 5.05 (b), (c) and (d) is permitted when necessary for an MTPD-sworn officer who is required to attend court on behalf of Metro on the officer's workday or what would be the officer's seventh consecutive day of work.

6.00 ENFORCEMENT

- 6.01 Management responsibility: Compliance with this P/I is the responsibility of managers and supervisors of covered employees.
- 6.02 Timekeeping: Timekeeping systems will be used to facilitate and verify compliance with hours of service limitations. Each covered employee must accurately record that employee's time in the designated timekeeping system.
- 6.03 Employee role: Except as provided in section 4.05 and this section, and except where a covered employee is also a manager or supervisor, responsibility for compliance with this P/I may not be delegated to covered employees. However, covered employees are encouraged to report any perceived deviations from this P/I to their supervisor or through the Safety Hotline (202-249-SAFE). Harassment, intimidation or retaliation is strictly prohibited against any employee who, in good faith, reports a violation.

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POLICY/INSTRUCTION: 10.7/1	HOURS OF SERVICE LIMITATIONS FOR PREVENTION OF FATIGUE
SUPERSEDES: 10.7/0	APPLICABLE TO: All Metro Employees

7.00 EXCEPTIONS

- 7.01 Exceptions warranting excess service: The following circumstances are recognized as exceptions to the limitations set forth in section 5.00 of this P/I:
 - (a) Protection of persons and property:
 - (1) An employee may perform excess service if, due to unexpected delays, it becomes necessary to complete an assignment involving persons in transportation or awaiting transportation, including customers, other employees and business guests.
 - (2) An employee may perform excess service to the extent necessary for the protection of Metro property.
 - (3) As used in section 7.01(a), excess service is "necessary" only if, and to the extent that relief by another qualified person (including a qualified supervisor) is not reasonably and timely available, given the totality of the circumstances involved.
 - (b) Unexpected unavailability of qualified personnel: In the event essential Metro functions necessitate assigning excess service to a covered employee as a result of the unexpected unavailability of qualified personnel, management must exercise due diligence to limit the amount of such excess service.
 - (c) Emergency situations, not otherwise provided for: In the event of a declared Major Disaster under the Metro Emergency Operations Plan as currently in effect, including an incident subject to the Severe Weather Operations Plan, operation of this P/I will be suspended to the extent necessary to address immediate requirements and maintain/restore transportation service (i.e., recovery).
- 7.02 Recuperative rest following excess service: Following any excess service justified under these exceptions, management of each respective department will make every reasonable effort to provide personnel time off for recuperative rest.
- 7.03 Monitoring/reporting excess service: In normal operations and with satisfactory staffing, excess service should only rarely occur. It is the responsibility of management to report instances of excess service as defined by SAFE, identify emerging excess service patterns (if any) and to promptly propose staffing remedies.
- 7.04 Procedures for retrospective review: Scheduling practices will be reviewed regularly (at least monthly) relative to compliance with the HOS policy and in terms of fatigue. Management will take reasonable efforts to modify scheduling practices to minimize exceptions and actual duty time with unacceptable estimated effectiveness.

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**POLICY/INSTRUCTION:
10.7/1**

**HOURS OF SERVICE LIMITATIONS
FOR PREVENTION OF FATIGUE**

SUPERSEDES: 10.7/0

APPLICABLE TO: All Metro Employees

- 7.05 Consideration of staffing levels during annual budget cycle: Managers in departments with covered employees will review and report staffing needs related to compliance with this P/I at the beginning of each annual budget cycle. The CFO will consider such needs in preparing the annual budget request.
- 7.06 Exceptions approved by the General Manager: The General Manager may authorize and approve additional specific exceptions to the limitations set forth in Section 5.0 of this P/I.

8.00 RELATED POLICIES, REGULATIONS & RESOLUTIONS

- 8.01 WMATA Board of Directors System Safety Policy Statement
- 8.02 Metro System Safety Program Plan
- 8.03 [Policy/Instruction 10.6, Fatigue Risk Management System](#)

9.00 IMPLEMENTATION OF THIS POLICY/INSTRUCTION

- 9.01 Requirements of this Policy/Instruction pertaining to safety-critical work in RTRA, BTRA, BMNT and TIES:
 - (a) Initial implementation date of June 28, 2014.
 - (b) Revised September 30, 2015. This revision supersedes all previous versions upon signing.
 - (c) Compliance date, as revised, not later than of October 1, 2015.

10.00 LIST OF APPENDICES, ATTACHMENTS OR FORMS

- 10.01 Appendix A: Schedule of Safety-Critical Occupations

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**POLICY/INSTRUCTION 10.7/1: HOURS OF SERVICE LIMITATIONS
FOR PREVENTION OF FATIGUE****APPENDIX A: Schedule of Safety-Critical Occupations**

Major Element	Sub-Element	Job Title	Code
Transportation, Bus and Rail			
BUS	BTRA	Bus Operator	6500, 6509
		Service Operations Manager	6428
		Assistant Superintendent, Bus Service Operations	6438
		Superintendent, Service Operations	1711
	BOCC	Bus Operations Manager	6430
		Assistant Superintendent, Street Operations/BOCC	3775
		BOCC Specialist	6450
RTRA	RTTO	Station Manager, Startup Station Manager	6765, 6762
		Interlocking Operator	6761
		Rail Operations Supervisor	6749
		Train Operator	6759
		Assistant Superintendent Field/Train Operations	6754
	ROCC	ROCC Director	0164
		Supervisor	6750
		Assistant Superintendent	6752
		Superintendent	6723
		Maintenance Operations Controller	4640
		PLNT Services Dispatcher	5325
		MOC Assistant Superintendent	4639

A P P R O V E D

By General Manager & Chief Executive Officer Paul J. Wiedefeld

Date Approved

12/7/2015

Date of Last Review

12/7/2015

**POLICY/INSTRUCTION 10.7/1: HOURS OF SERVICE LIMITATIONS
FOR PREVENTION OF FATIGUE****APPENDIX A: Schedule of Safety-Critical Occupations**

Major Element	Sub-Element	Job Title	Code
		GOTRS System Administrator	5084
		Elevator Escalator Dispatcher	1780
		Customer Service Liaison	0693, 1845
Bus Maintenance			
BMNT		Auto/Lt Truck Mechanic (AAL-D)	2011-2016
		General Garage Mechanic D thru AA and Fleet Servicer D thru AA	1904-1914
		Heavy Truck Equipment Repair	2018-2023
		Machinist Heavy Overhaul	1935-1940
		Small Unit Component Overhauler D-AAL	1949-1954
		Welder	1942-1947
Transit Infrastructure and Engineering Services			
TIES	Immediate staff	Construction Engineer	2641, 2642, 2643, 2644, 2645, 2647
		Construction Inspector	8784, 2723, 2724, 2725, 2667, 2720, 2722
		Inspector	4629
TIES	CMNT	Road Mechanical Electrical Lead Shop	3861
		Mechanic Electrical Lead MRO	3861
		Mechanic Electrical Lead S&I	3861
		Mechanic Electrical S&I	4725-4729
		Mechanic Mechanical S&I	4657, 4674-4677

A P P R O V E D

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**POLICY/INSTRUCTION 10.7/1: HOURS OF SERVICE LIMITATIONS
FOR PREVENTION OF FATIGUE****APPENDIX A: Schedule of Safety-Critical Occupations**

Major Element	Sub-Element	Job Title	Code
		Mechanic Mechanical Shop	4657, 4674-4677
TIES	ELES	Inspector	5342
		Journeyman	5810E, 5811E
TIES / SMNT	ATC	Mechanics and Helpers	5107-5110, 4661
		Shift Supervisors	5105
	COMM	Mechanics	5191, 5195, 5188, 5189, 5199, 4661
		Shift Supervisors	5186
TIES/SMNT	PWR	HV Technician	5051-5055
		LV Technician	5027-5031
		Shift Supervisors	5015
		Supervisors TEST and Calibration	5019
		TEST Technician and Helper	5056-5060
TIES	TRST	Assistant Superintendent, Track and Way	5321
		Division Superintendent, Track and Way	5142
		Inspection Track Walker	5501, 5502, 5525
		Maintenance Manager, Track and Way	5456
		Mobile Command Manager	5617
		Mobile Command Supervisor	5615
		Operators (on-track equipment)	5460-5464
		Structural Evaluation Technicians	5504
		Structure Repairmen	5493-5497

A P P R O V E D

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POLICY/INSTRUCTION 10.7/1: HOURS OF SERVICE LIMITATIONS FOR PREVENTION OF FATIGUE

APPENDIX A: Schedule of Safety-Critical Occupations

Major Element	Sub-Element	Job Title	Code
		Supervisor, Inspection Structures Track and Way	5456
		Supervisor, Track and Way	5457
		Surveyor	1164
		Track Laborer	5413
		Track Repairman	5466-5470
		Track Welder	5690-5695
		Track and Structures Training Instructor	3724
Metro Transit Police Department			
MTPD	MTPD	Sworn Police Officers and Detectives	8722, 8723, 8724, 8730
		Police Officials	0038, 0241, 0261, 1724, 1725, 1727
		Police Communications Specialists	1759
		Police Communications Supervisors and Managers	8929, 8932

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By General Manager & Chief Executive Officer Paul J. Wiedefeld

Date Approved

12/7/2015

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12/7/2015

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Washington Metropolitan Area Transit Authority

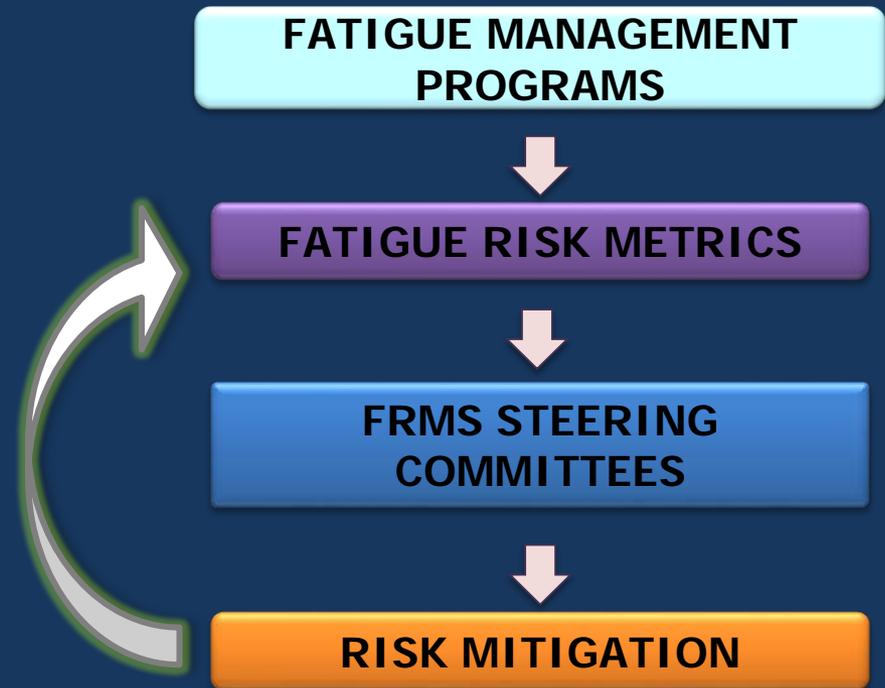
Update on Fatigue Risk Management System (FRMS)

Moving Metro Forward **Safely**

Safety and Security Committee
March 24, 2016

Fatigue Risk Management System (FRMS)

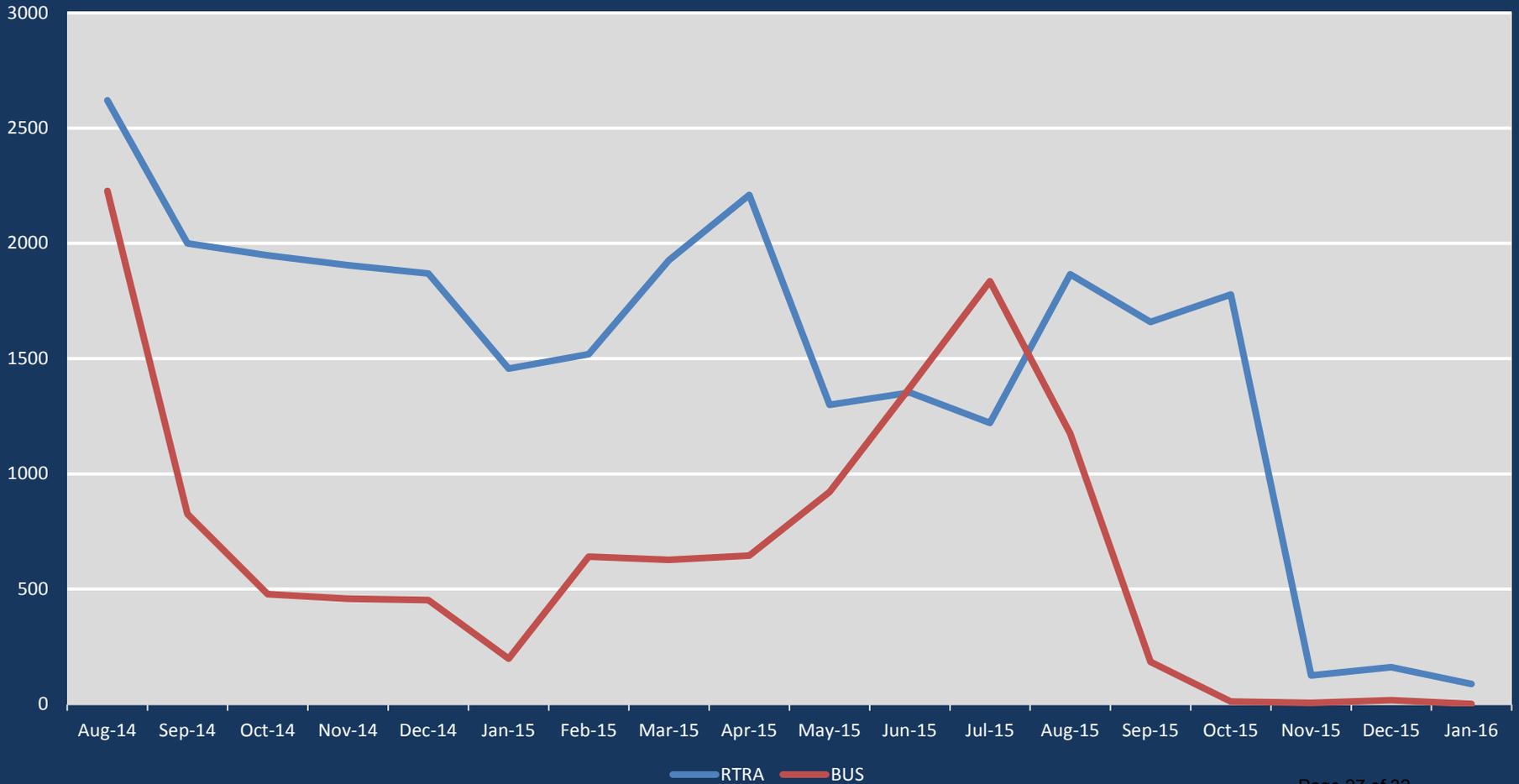
- Fatigue risk previously unmeasured & unmitigated
- Science-based, data-driven, customized & sustainable approach





Hours of Service

Consecutive Day Violations: BTRA and RTRA

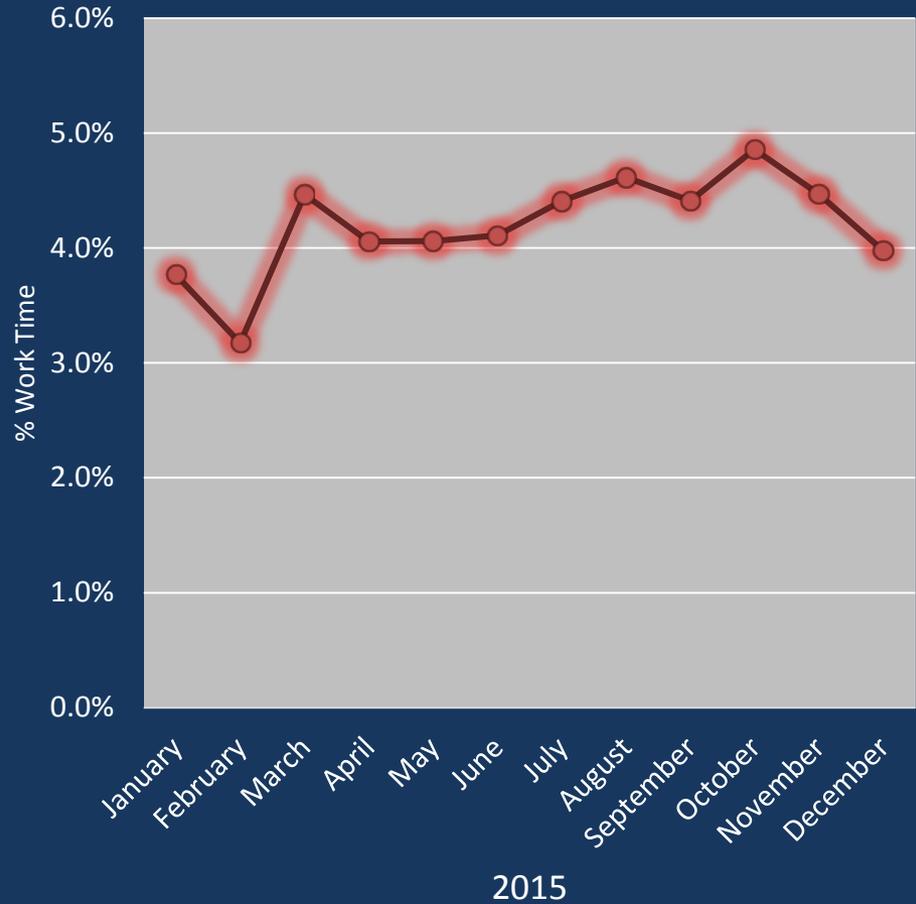
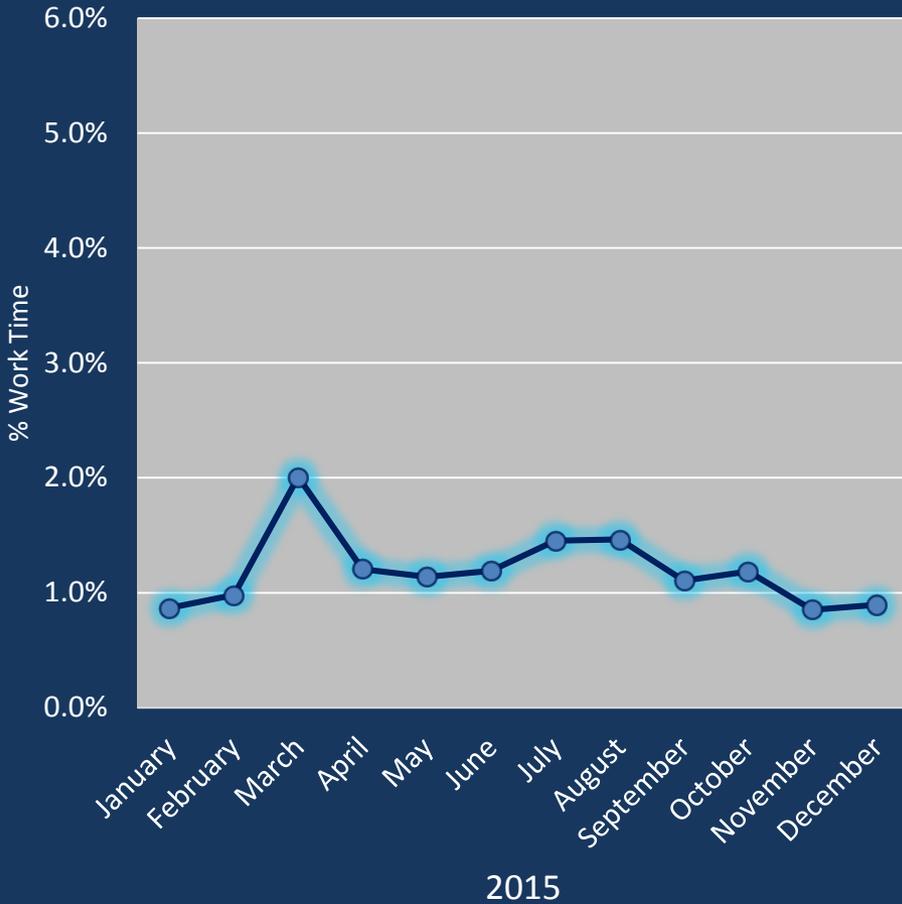




Work Time at Low Effectiveness

BTRA

RTRA



FRMS Update

- Training & Education
 - NEO, Safety-critical
- Awareness
 - FRMS Intranet Page
 - Reports



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Home > Departmental > FRMS > Occasional users and recent

FRMS

- Occupational Safety and Health
- Safety Training
- Fatigue Risk Management System
- Our Team
- Contact Us

Available Systems

- COE DMS
- SAFETY TAGS
- SAFETY SEARCH ENGINE
- ISSUE TRACKING
- TRAINING AND EDUCATION
- CENTRAL MAIL CENTER
- EMAIL MESSAGES
- PERSONNEL AND WORKS TANKS & LOGS
- TRUCK TRACK

RECOMMENDATIONS

FRMS is a priority in our work at MTRCA. Fatigue is the top risk to other safety-critical activities or malfunctions - can impair our ability to operate safely. MTRCA's Fatigue Risk Management System or FRMS, recognizes that fatigue is a health and safety concern to our employees and for our nation.

As FRMS is based in science and aims to address fatigue risk in a customized way, all FRMS norms together (the science behind fatigue and the operational conditions in the workplace, duty work environment, a culture or effective FRMS) does that into account.

Each employee is vulnerable to the effects of fatigue. To make this more visible or sustainable, Fatigue Risk is a shared responsibility - we all play a role in limiting our risk of impairment. Explore this page to learn how we can manage our fatigue to work safely in our field.

For more questions about fatigue or needs for MTRCA's Fatigue Risk Management Program, call or contact by: Norm Vlasz, Fatigue Risk Management System (FRMS) Manager at 222-MED-1000, K3.h3@metro.com

What is The Fatigue Risk Management System?

Fatigue in the Process

Getting Up at Night to Go to the Bathroom May Signal Sleep Apnea

While performing safety-critical tasks, fatigue can increase as an individual's ability to perform safety-critical tasks decreases. This is also true for the results of a human error typically presents the risk to cause a critical failure.

Start the "Sleep" Cycle Early

Researcher's Study that links with better and more frequent awakenings at night, more sleep-related and fewer cognitive performance.

Work: California Drivest Pulls Sleep/Time Clock

Researcher's Study that links with better and more frequent awakenings at night, more sleep-related and fewer cognitive performance.

Sleep Deprivation Impairs Judgment

People who have sleep for too long sleep required judgment, decision-making skills, ability to see in new information and take longer to answer.

Is Your Fatigue Keeping You Awake?

Light coming off a plane may affect our body's clock to sleep.

Many Find that "Social Jetting" is Related to Obesity

Individuals with a greater preference for the amount of sleep they get on "off days" and "week days" tend to suffer from obesity, diabetes and other health-related medical conditions.

Brain: Fresh Tonic Works to Sleep - Including Customers' Linked Protein

Brain: Fresh Tonic works to sleep - including customers' linked protein.

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FRMS Update

- Quiet Room
 - Launch Summer 2016
- Incident Investigation
 - Methodology & Wizard
- FRMS Manager
- Ongoing Development

