FINDINGS OF A PEER REVIEW PANEL
CONDUCTED BY
THE NORTH AMERICAN TRANSIT SERVICES ASSOCIATION (NATSA)
ON

Baltimore MTA Subway Link
PROVIDED FOR
Maryland Department of Transportation
Maryland Transit Administration

April 23 – 27, 2018
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Executive Summary

The NATSA (North American Transit Association) Peer Review Panel found the staff of the Baltimore MTA Metro Subway Link to be congenial, exceptionally dedicated and hardworking despite the number of vacant positions and organizational uncertainty from management turnover.

A lack of in-house operations engineering expertise has resulted in an organizational disconnect between engineering and operations. An in-house field engineer is needed within each of the operational departments to provide more frequent and consistent communication between engineering and operations. While technical knowledge at the lower levels was adequate, training requirements are not well defined. Manual data entry and a lack of modern mobile technology prevents supervisors from providing oversight of laborers. The existing State of Maryland wage structure for supervisors - combined with union contracts with annual wage increases - discourages natural advancement and likely encourages staff turnover. Additionally, inflexibility within the hiring process has exacerbated the situation by leading to position vacancies, leaving multiple supervisory positions vacant or removed. Slow Orders [a process for instructing train operators to reduce the speed of their train over a specific area of track] were noted to be verbally issued and with inconsistent compliance.

Organizational stability and an influx of additional manpower or contractual maintenance support are needed with adequate supervision and oversight. It is also recommended that MTA establishes separate Power and Signals departments.
Introduction

In February 22, 2018, Kevin B. Quinn, Jr, Administrator, Maryland Department of Transportation, Maryland Transit Administration (MTA Maryland) contacted the American Public Transportation Association (APTA) to request a peer review of the agency’s Metro Subway Link Operations.

APTA, through its wholly owned subsidiary the North American Transit Services Association (NATSA) and through discussions between NATSA and Maryland Transit Administration staff, determined the review would be conducted April 23 – 27, 2018.

A panel of industry peers was assembled comprised of individuals with senior and executive industry leadership skills from within the public transit sector to provide advice, guidance, benchmarking and best practices. The onsite peer review panel consisted of the following individuals and the transit agencies from which they were selected:

**ANTHONY FAZIO**
Director of Track Engineering and Utility Equipment,
Southeastern Pennsylvania Transportation Authority
Philadelphia, PA

**JOSEPH GUSHUE, P.E.,**
Director of Maintenance of Way
Massachusetts Bay Transportation Authority
Boston, MA

**ADDI MATTHEW**
Manager of Train Control
Metropolitan Atlanta Rapid Transit Authority
Atlanta, GA

**WILLIAM MOONEY**
Vice President Power & Way Maintenance
Chicago Transit Authority
Chicago, IL

**STEPHEN ROBERTS**
Senior Project Manager, Signal Engineering
Chicago Transit Authority
Chicago, IL

**CONNIE THIERRY**
Manager of Electrical Power & Equipment
Metropolitan Atlanta Rapid Transit Authority
Atlanta, GA

**CHARLES V. JOSEPH**
Director, Rail Programs and Peer Review Facilitator
American Public Transportation Association (APTA),
Washington, DC

The panel convened in Baltimore on April 23, 2018. Panel coordination and logistical support was provided by APTA Staff Advisor Charles Joseph who coordinated panel member input in the drafting of this peer review report. Cedric Johnson, MDOT MTA Chief Safety Officer, provided agency liaison support on behalf of MTA Maryland.
Peer review panel biographies

ANTHONY FAZIO
SEPTA – Director of Track Engineering and Utility Equipment
Anthony Fazio began his rail career on the Hudson Bergen Light Rail DBOM project in Jersey City, NJ as a Track trainee. He has also worked in the New Jersey Transit Structures design group and worked extensively on Amtrak’s New York Division. In his current position, Anthony oversees Track Design and Engineering for Southeastern Pennsylvania Transportation Authority (SEPTA), which is comprised of railroad, light rail, and subway/elevated territories.

JOSEPH GUSHUE
MBTA- Director of MOV, Track Engineering and Track Maintenance
Joseph Gushue has been employed with the Massachusetts Bay Area Transportation Authority since 1998 where he began as a track engineer. His current position as Director of MOV requires that he is responsible for the oversight and directive of all activities associated with the repair, maintenance and modification of all transit track infrastructures. Supervises a heavily unionized environment and through a Deputy Director, Superintendents, Supervisors and Forepersons all maintenance, engineering and administrative staff of 286 employees responsible for the inspection, maintenance, repair, modification, design, installation and all other activities associated with the transit track infrastructure. Reviews all specifications and RFPs associated with the selection of consultants and/or vendors for services and materials related to transit track maintenance, repairs and modifications. He attended Northeastern University and has a Bachelor of Science in Civil Engineering.

ADDI MATTHEW
MARTA – Manager of Train Control
Addi Matthew has been employed with the Metropolitan Atlanta Regional Transit Authority since 1998 where he began as an Automated Train Control Technician. His current position as Manager of Train Control requires that he is responsible for managing the overall work goals and activities of MARTA’s Train Control branch. Addi creates and maintains a consistent quality and customer focused team orientation among subordinate employees which supports the division's mission. Assists in the development of, administering and maintaining the branch's preventive, pro-active maintenance, and other work programs. He has multiple years’ experience as a Manager Train Control and General Foreman of Train Control. He attended DeVry University where he holds a bachelor’s Degree in Technical Management and an Associates in Electronics Technology.

WILLIAM R. MOONEY
CTA – Vice President of Power and Way Maintenance
William R. Mooney is responsible leading activities of all sections within the Power & Way Maintenance department to ensure that all signal, track, power, and structure infrastructure function safely and efficiently throughout the Chicago Transit Authority’s rail rapid transit system. This includes leadership of areas as specialized and diverse as signal maintenance, structure maintenance, power maintenance, track maintenance, emergency response, material delivery and the non-revenue vehicle fleet. Change management is one of Bill’s many strengths. He established a reorganization of CTA’s Track Maintenance department which included the separation of track inspection and maintenance functions, to develop accountability structures and increase overall productivity, efficiency and safety. This innovative program complied with National Transportation Safety Board recommendations and APTA standards and has been recognized as an industry best practice.

STEPHEN ROBERTS
CTA - Senior Project Manager, Signal Engineering
Stephen Roberts started his career in 1985 with rail rolling stock manufacturer/re-manufacturer Morrison Knudsen. He has been employed with the Chicago Transit Authority since 1995 beginning as a Signal
Peer review panel biographies

Technician and moving up to the Signal Manager in 1995. He held positions of Manager of Network and Communications system, and Power & Substation Maintenance to his current position as Senior Project Manager, Signal Engineering. In his current position he is responsible for the oversight of signal system construction projects and in-house system modifications. Provide technical assistance for the upgrade, repair implementation of new or modified Wayside and Cab signaling systems utilized by the authority. Review drawings, schematics and equipment submittals for proposed equipment. Prepare drawings schematics and specifications for signal projects. Oversee equipment cutovers and manage project timelines for schedule adherence, perform acceptance testing and site visits to ensure specification compliance and quality assurance. He currently holds an Associates in Electrical/Mechanical Engineering technology and is currently attending DePaul University in the Computer Science / MIS curriculum with goal towards a Bachelor of Science.

CONNIE A. THIERRY JR
MARTA - Manager of Electrical Power and Equipment

Mr. Thierry has 43 years of experience in Management of Transit, Commercial, Industrial, Residential Electrical Design Construction, Installation, and Maintenance. He has worked at MARTA since October 25, 2010 where he supervises (64) Electrical Technicians in installation maintenance and repair of Marta electrical systems. Prior to his employment at Marta he worked for the City of Atlanta - Department of Aviation as an Electrical Field Engineer Electrician Supervisor where he directed and managed operations in City of Atlanta Parks System. He attended Oklahoma Junior College of Business and Technology focusing on Computer Science Electronics. He is a member of the International Brotherhood of Electrical workers.
MTA Subway Link Peer Review Provided at Maryland Department of Transportation

1.0 Methodology
The NATSA peer review process is well-established as a valuable resource to the industry for assessing all aspects of transit operations and functions. The process begins much like a structured formal audit, but unlike a formal audit, peer review teams are comprised of highly experienced transit professionals. The purpose of using experienced subject-matter professionals is to share methods, insight and experiences interactively with the requesting property.

It is through this exchange of ideas and experiences that the synergistic process of the peer review earns value as each of the participants, on the review team and at the property, gain a better understanding of the complexities of transit functions and opportunities for improvement. It is truly an industry self-improvement process where all parties benefit.

The peer review concludes with a caucus among the peer review team to draw out the opinions of the team members and define a consensus summation of observations taken and their professional judgment as to areas where improvement could be attained. This information is then presented to the requesting property in an exit conference and followed by a report, if so desired by the requesting property. There are no expectations expressed or implied that the requesting property take any action to satisfy the opinions of the peer review team nor engage any members of the team in any follow-up activities. The information provided by the peer review team is consensus-based and transferred to the requesting property as a pro bono work product, which the transit property holds all rights to under the terms of the peer review agreement.

2.0 Scope of the report
- Review:
  - National benchmarks on track standards
  - MTA’s Standard Operating Procedures (SOPs)
  - MTA’s Field Guide for Track Inspectors
- Conduct a comprehensive review of practices, procedures used to inspect and monitor the subway system
- Review of industry studies, surveys, reports and best practices for track, signals and power

3.0 Opening comments
The panel found the Maryland MTA staff to be congenial, exceptionally dedicated and hard working. Staff appear to adapt to the prevailing conditions despite the number of vacant positions. Frontline staff interviewed are technically proficient. The stations and trains are clean and well maintained, and the Security at MTA facilities is adequate. Station and on-board train announcements are reasonably clear.

Our observations and recommendations are limited to review of documents, interviews with staff, access to some facilities and riding the system. We did not get an opportunity to walk the track.
4.0 Observations and recommendations

4.1 Organizational Disconnect between Operations and Engineering

Observations:
A lack of engineering expertise in the rail modes has resulted in a lack of communication between engineering and operations. An in-house field engineer is needed within each of the operational departments to provide more frequent and consistent communication between engineering and operations.

Operations and Engineering departments do not appear to communicate regularly in maintenance standards development, review, or approval.

There appears to be a distinct lack of communication and or understanding between engineering and operations for project development, procurement, and system requirements as well as a lack of timely awareness/understanding of operational needs. Capital projects utilize maintenance staff for support at the expense of daily maintenance.

There seems to be a lack of in-department track engineering expertise as well as inadequate track inspection training and no track recertification. Also, there is no clear definition and responsibility of who oversees geometry/ultrasonic testing and data verification in accordance with regulatory requirements.

Recommendations:

a) Engineering and operations need to coordinate in the development of maintenance standards, including their review and approval.

b) Consider re-structuring operations and engineering departments to better facilitate asset ownership, including project development, procurement, and system needs.

c) Consider creating a separate standing capital projects support group to free maintenance staff from contractor escort duties.

d) Clearly define responsibilities for oversight of geometry car testing and data verification.

4.2 Technology Training and Utilization

Observations:
MTA Maryland uses the MAXIMO [enterprise asset management (EAM) software system which is used to track operation, maintenance and disposal of assets]. However, the panel found that this software is not being fully utilized by all departments. Most employees have difficulty using the program due to lack of training. The system currently is not being leveraged as an asset management tool as in Transit Asset Management (TAM) requirements for MAP21.

The ProjectWise system which the MTA uses as its Document Retention System is not readily used by staff and employees have difficulty using the system due to lack of training.

Recommendations:

a) Establish a policy and procedure for data backup and data recovery for records management systems.

b) Provide a systems expert for MAXIMO and ProjectWise so that system users can get assistance with reports, dashboards or any other issues.

c) Employees using MAXIMO need more thorough and re-occurring training. MTA should provide capability and training for customizable dashboard and reports based on department needs.

d) Continue exploration of mobile technology to streamline maintenance practices.
e) Greater utilization of MAXIMO as an asset management tool.
f) Provide ongoing and refresher training for ProjectWise
g) Explore the feasibility of a Memorandum of Agreement (MOA) with Washington Metropolitan Area Transit Authority (WMATA) regarding staffing specialty needs.

4.3 Track Standard Operating Procedures (SOPs) and Training
Observations:
In August 2017, MTA published a ‘Field Guide for Track Inspections’. This guide is to a) assist track maintenance department staff to verify that tracks are in a safe operating condition as designed, and b) to provide guidance on periodic track inspection requirements.

a) The panel found no clear SOPs to detail how and when to measure Gauge Face Angle (GFA).
b) The Field Guide set in place a standard that created a new black condition for GFA.
c) An inspection in February 2018 revealed several sections in black conditions as defined by the new Field Guide.

Replacement rail was procured and scheduled for installation in the summer of 2018. When an inspection revealed the GFA limit was reached, MTA management recommended the tracks be removed from service. With the removal of tracks from service, revenue train services were suspended between February 12, 2018 and March 9, 2018 during which time necessary track repairs were performed.

There seems to be a lack of in-department track engineering expertise as well as inadequate track inspection training and no track recertification. Also, there is no clear definition and responsibility of who oversees geometry/ultrasonic testing and data verification in accordance with regulatory requirements.

Track inspection sections may be too long for a single-track inspector to cover during the assigned period of time.

Recommendations:

a) Create SOP for the measurement of GFA.
b) Purchase a MiniProf [a profile measuring equipment] unit to measure GFA.
c) Develop clear track maintenance standards that is separate from the ‘Field Guide for Track Inspectors’ document.
d) Re-assess how MTA categorizes GFA defects under a black condition.
e) Ensure a resident track expert (engineer) is located within the track department.
f) Assign track data collected to resident track expert for analysis.
g) Use qualified track personnel to accompany geometry/ultrasonic vehicle.
h) A track engineering field representative from the engineering department should be assigned to the Operations department and should have a thorough understanding of the parameters that trigger an ‘alarm’ on the geometry car.
i) A ‘chase truck’ [a truck which follows the geometry/ultrasonic testing vehicle and carries a track crew with appropriate tools and materials to address identified urgent track defects. A typical chase truck would have a rail drill, rail saw, gauge rods, joint bars, etc.] should follow the geometry/ultrasonic vehicle to address urgent defects.
j) Identify a process by which testing data is evaluated, verified, and addressed.
k) Develop initial training requirements and subsequent recertification training at defined periods.
1) Specifications to the vendor should state that those parameters for geometry will be established by MTA, and violations of these parameters will be immediately reported to MTA representative by vendor for corrective action.

4.4 Human Resources & Staffing

Observations:
Managerial vacancies and turnover have led to organization instability. Existing wage structure discourages natural advancement and promotes staff turnover. There is a lack of supervision as well as issues of current and future attrition. The restricted staff levels have resulted in a lack of subject matter experts (SMEs) to oversee their respective fields. External staff are being used to fill some safety critical functions.

Roles and responsibilities are not clearly defined within the organizational structure. It appears from employee interviews that the compensation of many maintenance staff is at or near the eligibility for retirement level.

The average difference in compensation between frontline supervisory positions and frontline labor is negligible. This, along with unfavorable benefit carryover from the transition from laborer to supervisor, discourages labor personnel who have displayed aptitude at their craft and supervisory potential from applying for promotion. The net result is that both the promising prospects for internal advancement and the nurturing of in-house expertise are stymied.

The hiring process appears to be lengthy and may result in candidate loss. There has been a high loss of frontline staff especially supervisory staff resulting in a high turnover rate. While we observed a dramatic loss of frontline staff, there were cases observed where frontline staff lacked two levels of supervisory positions due to high turnover. In addition, hiring managers have not been engaged in the recruitment process and there seems to be no clear succession planning process.

Recommendations:
   a) Review and adjust wage structure to incentivize and retain all positions (especially management).
   b) Establish sufficient staffing levels to account for events such as vacation, training, sick, FMLA, and off-duty due to injuries.
   c) Identify safety critical PINs (Position Identification Number).
   d) Assign SMEs to their respective departments as leads.
   e) Implement an apprenticeship program. Consider interaction with local technical colleges for technical training of potential staff as MTA forecasts future needs.
   f) Review manpower needs to meet safety and regulatory requirements.
   g) Review minimum job requirements and consider other equivalent experience.
   h) Streamline hiring process.

4.5 Slow Orders

Observations:
The panel found no Standard Operating Procedures (SOPs) for implementation of Slow Orders. Slow Orders are currently being implemented verbally and in some cases are not adhered to at all by train operators. There are no physical or electronic indicators.

Staff confirmed that there are no wayside signs for implementing temporary speed restrictions. In the absence of such, train operators are given a list of speed restrictions over the train radio with reliance that train operators will have their train under control in the speed restricted area.
Recommendations:

a) Develop a SOP for implementing and removal of Slow Order.

b) Slow orders should be enforceable through the signaling system.
   i) Review the capacity of the existing signaling system and determine how it can be used to enforce slow orders as an interim measure.
   ii) Install wayside signage as an interim measure.

c) Review commercially available systems to alert track walkers when slow orders are implemented.

d) Procure wayside signs for implementing temporary speed restrictions.

4.6 Signals & Power

Observations:
The signals and power personnel share the same responsibilities and equipment but there seems to be a lack of in-department signal and power engineering expertise and inadequate signal and power training with no periodic recertification.

The panel found that relay testing is out of compliance in some places by more than two review cycles. The panel also found many examples such as a) work orders were not completed, b) abandoned and unidentified wires were observed in the signal rooms, and c) original baseline for track circuits was unknown to maintenance personnel [Field records did not reflect initial baseline measurements. It should be noted that in the event of a relay failing, trains will automatically cease operations.

There is no apparent SOP for use of relay jumpers in the Train Control & Communications Room (TC&C).

There is no policy in place for the reporting and recording of signal system anomalies. Also, it is our understanding that MTA’s policy is for refresher/retraining for signal technicians to be provided every two years. We found no records or evidence that this is being carried out on a consistent basis.

Community keys are used for lock-out/tag out, which is not an industry standard practice. It is unclear if appropriate Personal Protective Equipment (PPE) are issued to all employees and if they understand when and where to wear it. Current substation design restricts de-energizing the main in-coming power at the traction current power substation without entering the facility.

Recommendations:

a) Separate signal and traction power departments to ensure subject matter expertise is available in these highly technical fields.

b) Develop initial training requirements, refresher training, and subsequent recertification training at defined periods in compliance with MTA policy.

c) Include vehicle side Train Control Systems as part of signal training so that a complete understanding of system functionality is achieved.

d) Ensure resident signal and power experts (engineers) are located within the power/signal departments to address anomalies and to maintain the line of communication between engineering and operations.

e) Develop abandoned wire protocol SOP for TC&C Rooms.

f) Develop SOP for use of jumpers in the signal system.

g) Verify and document relay testing frequency compliance and completion.

h) Develop a SOP for reporting and recording of signal anomalies.
i) Issue employee specific lock out/tag out keys.

j) Perform a job hazard analysis for PPE use for all related tasks.

k) Provide a means of disconnecting in-coming mains power at traction power substations without having to enter the building.

4.7 Other Observations

The panel observed the following issues during the peer review:

a) Multiple stations had excessive amount of garbage on the right-of-way (ROW).

b) Diamond plate aluminum panels are used as steps over the third rail at certain stations. This is an electrical exposure hazard.

c) Heavily salted roads at Old Court at-grade level near aluminum fence and proximity to the 3rd rail. Salt water is a conductor and presents a risk of arcing.

d) Concerns related to fatigue due to working overtime by staff.

e) Concern regarding detail of block orders provided to dispatchers. Controllers are only provided short one-line summaries and not the whole package.

f) During an observed vehicle operator change on the main line the control cab was not secured.

g) MTA’s has defined On-Time-Performance (OTP) goals and Key Performance Indicators (KPIs) but they do not appear to have trickled down to front line staff.

h) It is understood that some union staff refuse to sign and acknowledge receipt of certain important documents.

i) Prior to procuring equipment, engineering department should seek the advice of in-house experts, especially those who will be using the equipment.

j) It is not clear that a formal process is in place so that when engineering sends specs for review and comments, there is accountability from those who should respond and that there is a tracking mechanism in place to follow up with delinquent responders.

k) The panel found that the OCC still employs paper-based records.

l) Some of the controllers in the OCC were observed using personal electronic devices while on duty.

m) Based on speed curve information provided, there appears to be many curves with excessive underbalance elevation.

5.0 Concluding Remarks

These observations and recommendations are intended to assist the MTA in strengthening the safety and effectiveness of the organization’s on-going rail operations, programs and strategies. The panel sincerely appreciates the support and assistance extended throughout the entire peer review process by all personnel. When possible, the panel stands available to assist with any clarification or subsequent support that may be needed.
Appendix A - Photos

Photo 1: Diamond step plate and garbage

Photo 2: Record of signal relay last tested

Photo 3: Heavily salted road near aluminum fencing in proximity to the traction power 3rd rail
February 22, 2018

Mr. Paul P. Skoutelas
President and CEO
American Public Transportation Association
1300 I Street NW, Suite 1200 East
Washington DC 20005

Dear Mr. Skoutelas,

The Maryland Department of Transportation Maryland Transit Administration (MDOT MTA) requests that the American Public Transportation Association (APTA) convene a panel to perform a peer review of the MDOT MTA’s practices versus best industry practices for maintaining the Metro SubwayLink. As you may know, on February 9, 2018, the MDOT MTA shut down the Metro SubwayLink operations due to rails that a physical inspection identified were worn sooner than anticipated.

We would ask that the review include:

- A review and recommendations of national benchmarks on track standards, Standard Operating Procedures, the Field Guide for Track Inspectors of the Metro SubwayLink and other relevant documentation.

- A comprehensive review of current practices, procedures, methods utilized within MDOT MTA to inspect and monitor the Metro SubwayLink system.

- A review of industry studies, surveys, reports, and best practices.

We have met with the Federal Transit Administration (FTA) to brief them on the Metro SubwayLink closure. Both the FTA and the State Safety Oversight (SSO) team participated in a track walk of the Metro SubwayLink with the MDOT MTA.

I would ask that the peer review team include transit professionals from larger metropolitan services that have heavy rail operations.
Mr. Paul P. Skoutelas  
Page Two  

The point of contact for the review is Mr. Cedric Johnson, MDOT MTA Chief Safety Officer. Mr. Johnson can be reached at 410-454-7142.

Please feel free to contact me at 410-767-3943 should you require any additional information.

Sincerely,

Kevin B. Quinn, Jr.  
Administrator

cc: Mr. Cedric Johnson, Chief Safety Officer, MDOT MTA
Appendix E: Organization Chart for MTA Metro Operations Organization Chart
Appendix F: Organization Chart for Maintenance of Way

SUPERINTENDENT OF METRO MAINTENANCE OF WAY
Arkadiya Ruditskiy

ASSISTANT SUPERINTENDENT
VACANT

SUPERVISOR
VACANT

14 A- Repairman

2 Heavy Equipment Mechanics

Administrative Personal

Brittany Chavez Administrative Assistant

Avraham Feldman Consultant

Union Personnel (16)
Appendix G: Organization Chart for Power & Signals

SUPERINTENDENT
R. Michael Blevins

ASSISTANT SUPERINTENDENT
VACANT

SUPERVISOR (ACTING ASSISTANT SUPERINTENDENT)
Robert Douy

SUPERVISORY COMMAND AND DATA ACQUISITION (SCADA)
(2 ET's) Electronic Technician – (2 A-REP's) A-Repair

ELECTRONICS REPAIR AND CALIBRATION SHOP
(6 ET's) Electronic Technician – (3 A-REP's) A-Repair

SIGNALS
(4 ET's) Electronic Technician – (13 A-REP's) A-Repair

TRACTION POWER
(5 ET's) Electronic Technician – (8 A-REP's) A-Repair

Total UNION PERSONNEL (43)

ADMINISTRATIVE PERSONAL

Catherine Henson
PAYROLL CLERK

Dwayne Darby
ADMINISTRATIVE ASSISTANCE

Larry Shipman
CONSULTANT

Mark Nalepa
CONSULTANT
Appendix H: Peer review agenda

NATSA Peer Review for the
Maryland Department of Transportation
Maryland Transit Administration

Peer Review Schedule

April 22-27, 2018

Peer Review Panelists:

1. Anthony Fazio, Trackwork Engineer (SEPTA)
2. Joe Gushue, Track Engineering & Track Maintenance (MBTA)
3. Stephen Roberts, Senior Project Manager, Signal Engineering, (CTA)
4. Addi Matthew, Manager of Train Control, (MRTA)
5. Connie Thierry, Manager of Electrical Power and Equipment (MARTA)
6. Bill Mooney, VP Power and Way Maintenance, (CTA)
7. Charles Joseph, Director of Rail Programs & Facilitator (APTA)
8. Nathan Leventon, Program Manager, (APTA)

Logistics

1. MTA to provide a screen, projector, 2 easels, flip charts, and marker pens at all times in the meeting room
2. May need Wi-Fi connection in the meeting room
3. May need some photocopying facility at meeting location
4. Meeting location: MTA Maintenance Facility, 4380 Old Court Road, Pikesville, MD
5. Nearest metro stop is Old Court Station.
6. MTA to provide transit passes
7. MTA to provide appropriate PPE for tours
8. Cedric Johnson (Chief Safety Officer) will be our contact on this peer review.
   Tel: (410) 454 7142 or cell (443) 992 8230

**Sunday April 22, 2018**

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<tr>
<th>Time</th>
<th>Activity</th>
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<tr>
<td>Various</td>
<td>Peer review team arrive in Baltimore, MD and check into hotel.</td>
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<td>Members to make their own ground transportation arrangements to the hotel.</td>
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<td></td>
<td>APTA will make hotel arrangements.</td>
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<tr>
<td>6:00 pm</td>
<td>Peer review team members meet in hotel lobby for a briefing by APTA</td>
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<td>7:00 pm</td>
<td>Peer review group dinner</td>
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Monday April 23, 2018
7:00 am  Team briefing in the hotel.
7:30 am  Breakfast at hotel
8:30 am  Check-in at MTA Maintenance Facility.
8:45 am  Welcome and introductions by MTA senior staff.
9:15 am  Briefing to include an overview presentation and discussion of issues and expectations from
the peer review team - by Cedric Johnson and others.
11:30 pm Panel to verify all required documents are available (either hard copy or electronically. See
Appendix A for a list of suggested documents.
12:00 noon Peer review panel to arrange their own lunch
1:00 pm  MTA to arrange tour of the system
5:30 pm  Return to hotel and end of Day 1
6:30 pm  Discuss findings of the day and strategize work plan for Tuesday
7:00 pm  Dinner (Location TBD) – for peer review members and MTA staff

Tuesday April 24, 2018
7:00 am  Team briefing in the hotel.
7:30 am  Breakfast at hotel.
8:30 am  Check in at MTA Maintenance Facility.
9:00 am MTA staff interviews:
    Zandra Ford, Director of Metro Operations
    Eric Bowser, Metro Manager of Maintenance
    Arkadiy Ruditskiy, Superintendent MOW
    Michael Blevins, Superintendent Systems Maintenance
    Michael Alchin, Track Inspector MOW
    Keith Jenkins, Metro Deputy Director
12:00 noon Peer review panel to arrange their own lunch
12:00 pm MTA staff interviews:
    Wilson Wallace
    Michael Gilhooly
    Manager responsible for maintenance of policies and procedures for track/signals/power
    2 Track Inspectors
    2 Track repairmen
5:30 pm  Return to hotel and end of Day 2
6:30 pm  Discuss findings of the day and strategize work plan for Wednesday
7:00 pm  Dinner (Location TBD) - for peer review members

Wednesday April 25, 2018
7:00 am  Team briefing in the hotel.
7:30 am  Breakfast at hotel.
8:30 am  Check in at MTA Maintenance Facility.
9:00 am MTA staff interviews: (May need other field staff for each discipline)
2 Signal technicians
2 Traction power substation technicians

12:00 pm   Lunch (MTA will provide)
12:30 pm   Closed door team review team deliberation
5:30 pm   Back to the hotel and end of Day 3
6:30 pm   Discuss findings of the day and strategize work plan for Thursday
7:00 pm   Dinner for peer review members

**Thursday April 26, 2016**
7:00 am   Team briefing in the hotel.
7:30 am   Breakfast at hotel
8:30 am   Check in at MTA Maintenance Facility
9:00 am   Closed door peer review team deliberation
12:00 noon   Peer review panel to arrange their own lunch
1:00 pm   Continued peer review team deliberation
5:30 pm   Back to the hotel and end of Day 4
6:30 pm   Discuss findings of the day
7:00 pm   Dinner (TBD) – for peer review members

**Friday April 27, 2018**
7:00 am   Team briefing in the hotel.
7:30 am   Breakfast at MTA Maintenance Facility
8:30 am   Check in at MTA Maintenance Facility.
9:00 am   Closed door peer review team prepare for exit conference presentation
11:00 am   Exit conference briefing and Q&A to MTA senior staff.

**1:00 pm**   END

**NO MEDIA ATTENDANCE**
Appendix I – MTA staff interviews

The following MTA staff who were interviewed and have been in their current positions as indicated:

**Zandra Ford**, Director of Metro Operations  
Joined the organization on February 28, 2018 some 19 days after the Metro Line shut down on February 9, 2018

**John Voigt**, Safety Compliance Officer  
Has been with MTA for 6 years

**Datonya Griffin**, Systems Safety Compliance Officer  
Started on Metro Rail two days before the peer review started

**Keith Jenkins**, Deputy Director of Metro Operations  
Approximately 2 years in this position

**Michael Blevins**, Superintendent of Systems Maintenance  
Started with MTA in November 2017 – some three months before the Metro Link shut down in February 2018

**Michael Gilhooly**, Manager of Facilities Maintenance and Environmental Services  
Started January 2016

**Joseph Trapani**, Superintendent Maintenance Facilities  
Started September 2016

**Eric Bowser**, Manager of Maintenance  
Started September 2015

**Arkadiy Ruditskiy**, Superintendent MOW  
In current position since January 3, 2018

**Michael Alchin**, A Repairman – Track  
Started December 1998

**Paul Scarborough**, Repairman, Signals & Power  
Has been with the MTA for 10 years

**Orlando Jenkins**, Repairman, Signals & Power  
Has been with the MTA for 17 years

**Govind Sulibhavi**, Manager, Track & Structural, Engineering Division  
Has been with the MTA for 20 years

**Wane-Jang Lin**, Deputy Director, Office of Engineering & Construction  
In current position for 2 years with a total of 16 years with the MTA

**Leonard Stepney Jr.**, Manager, Operations Control Center  
In current position for 2½ years
Appendix J: Documents provided by MTA

The following documents were made available to the peer review panel.
1. 2016-05-26 Trackwork
3. Job Vacancy - A Repairman – MOW
4. Metro Operations Mainline Service Restoration Plan
5. Baltimore Track Inspection Workshop – Enhancing Awareness and Skills
6. Baltimore Metro Subway Map
7. A Brief History of Baltimore Metro Subway Link
8. Current Master Area #1 OM OC MOW Monthly Mainline Switch Inspection
9. Current Master Area #2 MM RP MOW Monthly Mainline Switch Inspection
10. Current Master Area #3 RA RO MOW Monthly Mainline Switch Inspection
11. Current Master Area #4 BH JH MOW Monthly Mainline Switch Inspection
12. Draft MTA Track Inspection Report
13. Job Vacancy – Electronic Technician
15. Final 2017 Baltimore Pocket book – Covers both Light and Heavy Rail Systems
18. KPI’s MTA Administration Summary – Work order Counts (Feb.1-28, 2018) – Work Group MTA-466
20. LR.09.02.00.00 LRV Riding Track – MTA Central Light Rail Line Standard Operating Procedure
22. Master Right of Way Track Inspection Report
23. Master Special Right of Way Track Inspection Report
24. Master Walking Right of Way Track Inspection Report
25. MDOT MTA Peer Review item1
27. Metro Maintenance Management Plan - MOW
29. Metro Maintenance Management Plan – Metro System Maintenance
30. Metro MTS 472 Work Orders from March 2013 – April 11, 2018
31. Metro MTS 472 Work Orders from March 2013 CM
32. Metro Operations Summary 2013
34. Metro Rule book 2012 Rev. 6/26/17
35. MOCC Incident Report 2018
36. MOW April 2018 (003) Updated
37. MOW Inspection between Sept. -Work order details
38. MOW Org. Chart 3/2/18
39. MOW Training – Inspection Procedure
40. MOW Training – Track Inspection
41. MOW Training – Transcripts
42. MR.05.02.00.03.01 – Weekly Preventive Maintenance & Inspection of TPE & Systems
43. MR.05.02.00.03.02 – Monthly Preventive Maintenance Inspection
44. MR.05.02.00.03.03 – Quarterly Preventive Maintenance Inspection
45. MR.05.02.01.03.05 – DC Rectifier/Transformer Annual PMI
46. MR.05.02.02.03.00 – Emergency Trip Annual PM
47. MR.05.02.08.03.05 – 480 277 VAC Circuit Breaker Annual PMI
48. MR.05.02.09.03.05.01 – Annual PM for FBK-H DC Breaker
49. MR.05.02.09.03.05.02 – Annual PM for FBK-H Section B
50. MR.05.02.09.03.05.04 – Annual PM for FBK-H Circuit Breaker
51. MR.05.02.09.06.00 – TPSS & SCADA DC Breaker
52. MR.05.02.09.06.00 – Wabash Yard Emergency Trip Test Annual
53. MR.05.02.10.01.00 – Red Tagging Equipment & Third Rail
54. MR.05.03.02.03.00 – Grade Crossing Semi-Annual PM
55. MR.05.03.05.02 – M3 Switch Inspection & Performance Test
56. MR.05.03.05.02.02 – YM-2 Monthly Performance Test & Inspection
57. MR.05.03.05.03.03 – M3 Switch PM Procedure
58. MR.05.03.06.06.02 – Ground Detector Test Quarterly
59. MR.05.03.06.06.03 – Cable Continuity Loop…
60. MR.05.03.06.06.04 – Vital Relay Inspection
61. MR.05.03.06.06.05 – Vital Relay Inspection
62. MR.05.03.06.06.06 – Vital Relay Inspection
63. MR.05.03.06.06.08 – Vital Relay Inspection
64. MR.05.03.06.06.09 – Vital Relay Inspection
65. MR.05.03.06.06.10 – Tunnel Approach
66. MR.05.03.07.02.00 – Interlocking Inspection
67. MR.05.03.07.06.00 – Approach Locking Inspection
68. MR.05.03.07.06.01 – Detector Locking Inspection
69. MR.05.03.07.06.02 – Loss of Shunt Locking
70. MR.05.03.07.06.03 – Overrun Signal Locking
71. MR.05.03.07.06.04 – Route Locking Test
72. MR.05.03.07.06.05 – Switch Locking Test
73. MR.05.03.07.06.06 – Time Locking Test
74. MR.05.03.07.06.07 – Traffic Locking Test
75. MR.05.03.08.06.06 – Genisys Performance
76. MR.05.03.09.03.02 – EM-1 Trip Stop PM
77. MR.05.03.10.03.05 – AF-400 Track Circuit Maintenance
78. MR.05.03.10.03.06 – PM of Track Circuits
79. MR.05.07.02.03.02 – SCADA Annual PM
80. MR.09.02.00.03 – Walking Track Inspection
81. MR.09.02.00.04 – Metro Riding Track Inspection
82. MR.09.04.00.01 – Metro Track Access
83. MR.09.02.00.03 – Inspection Crew
84. MR.09.02.00.02 – Walking Track Inspection
85. MR.09.02.00.02 – Track Access for Inspection
86. MR.09.02.00.03 – Track Access for Lubricating Running Rail
87. MR.09.02.00.04 – Track Access for Maintenance Crew Performing Minor repairs
88. MR.09.04.02.01 – Metro Work Block Implementation…
89. MR.09.04.02.02 – Metro Work Block Implementation…
90. MTA Global Org. Chart
91. MTA Metro RWP Manual
92. MTA Plustwoprint-04112018
93. MTA Plustwoprint-04122018
94. OCC-MR-007 Metro Single Tracking
95. Schedule March 22, 2018
96. Speed Curve Information
97. System Maintenance & MOW…
98. Track Maintenance Standards
99. Work Activity Plan