

## **ITEM 8 - Action**

May 18, 2005

### Endorsement of the WMATA Backup Operations Control Center for Homeland Security Funding

#### **Staff**

#### **Recommendation:**

- Receive briefing on the center's critical operations control functions needed to ensure the survivability of the Metrorail system during major emergencies and their aftermaths.
- Approve the enclosed letter to WMATA endorsing its Backup Operations Control Center for consideration for Homeland Security funding.

#### **Issues:**

None

#### **Background:**

At its April 20, 2005 meeting, the Board discussed a letter from WMATA requesting TPB endorsement of its Backup Operations Control Center project, similar to the TPB's November 17, 2004 endorsements of the security-related CapCom project and National Capital Region freight rail relocation study.

**DRAFT**

May 18, 2005

*District of Columbia**Bowie**College Park**Frederick County**Gaithersburg**Greenbelt**Montgomery County**Prince George's County**Rockville**Takoma Park**Alexandria**Arlington County**Fairfax**Fairfax County**Falls Church**Loudoun County**Manassas**Manassas Park**Prince William County*

Mr. Richard A. White  
General Manager/Chief Executive Officer  
Washington Metropolitan Area Transit Authority  
600 Fifth Street, N.W.  
Washington, DC 20001

Dear Mr. White:

This letter is to express the support of the National Capital Region Transportation Planning Board (TPB) for the Washington Metropolitan Area Transit Authority's (WMATA's) "Backup Operations Control Center (OCC)" proposal, addressing one of our region's most significant Homeland Security issues. In your April 12, 2005 letter, you described the center as a critical piece of infrastructure to provide redundancy and enhanced reliability, and to ensure the survivability of critical operations control functions to the regional Metrorail system. The Board recognizes the need to ensure that Metrorail can operate reliably during evacuations or other major emergencies. The OCC, as the brain and nervous center of the Metro System, is vital for that reliability.

WMATA and U.S. Department of Homeland Security analyses rated the OCC as WMATA's most critical asset and at the greatest risk from terrorism. The risk to WMATA is demonstrated by the high proportion of terrorist attacks around the world where transit is a target. Also, any problems with Metrorail operations, both during and in the aftermath of a major emergency, will impact the entire National Capital Region, causing danger and difficulties for the general public and emergency response personnel. Fail-safe redundancy of the OCC would eliminate a troubling single point of failure, promoting increased service reliability and consequence management.

The TPB has reviewed WMATA's assessment of the Backup OCC needs, and concurs that WMATA has demonstrated that such a project is a top Homeland Security priority for the region. The TPB looks forward to the progress that the region's partners can make on directing federal homeland security funds targeted to the National Capital Region to this important and timely effort.

Sincerely,

Phil Mendelson  
Chairman  
National Capital Region Transportation Planning Board



April 12, 2005

Mr. Ronald Kirby  
Director, Transportation Planning  
National Capital Region Transportation Planning Board  
Metropolitan Washington Council of Governments  
777 North Capitol Street, NE, Suite 300  
Washington, DC 20002-4239

Dear Mr. Kirby:

As you are aware, WMATA has been playing an active role in the FY 2005 Urban Area Security Initiative (UASI) Funding discussions as an agency and as part of ESF-1 (Transportation). Lora Byala of my staff participated in a number of the initial funding discussions among the ESFs and most recently Deborah Lipman represented me at the March 22 Chief Administrative Officers (CAO) meeting where the final CAO priorities for funding were assigned.

The CAO recommendations rated two of RESF-1's three project submissions as "Priority 2." These projects, Development of Regional Capabilities to Improve Transportation System Management (CapCom) and the WMATA Backup Operations Control Center (OCC), would only receive funding if additional funding becomes available.

The WMATA Backup OCC project is of utmost importance to the security of the entire region. It will provide a critical piece in WMATA's infrastructure that is required to provide redundancy and enhanced reliability to ensure the survivability of critical operations control functions to the regional Metrorail system. Without the use of the Operations Control Center (OCC), WMATA and the region will forfeit a critical first response and evacuation asset during an emergency situation. If WMATA's OCC is disabled or had to be evacuated it will be essentially impossible to maintain rail service with any degree of reliability. More information on the project is attached to this letter.

It is our understanding that at the March 22 meeting the CAOs requested that the TPB provide an endorsement of the WMATA Backup OCC project, as it has for CapCom. WMATA requests that the TPB indicate its support for the project, either through a letter or resolution, so that should funding become available the CAOs will be able to provide funding.

**Washington  
Metropolitan Area  
Transit Authority**

600 Fifth Street, NW  
Washington, DC 20001  
202/962-1234

By Metrorail:  
Judiciary Square—Red Line  
Gallery Place-Chinatown—  
Red, Green and  
Yellow Lines  
By Metrobus:  
Routes D1, D3, D6, P6,  
70, 71, 80, X2

Mr. Ronald Kirby  
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We greatly appreciate you providing this information to the TPB for their full consideration. If you have any questions please contact Deborah Lipman at 202/962-1003.

Sincerely,

A handwritten signature in black ink that reads "Richard A. White". The signature is written in a cursive style with a large initial 'R'.

Richard A. White  
General Manager/Chief Executive Officer

enclosure

### Proposal Summary

Experience has shown that transit systems and transit operations are a favorite target of terrorist. The current design of the Washington Metropolitan Area Authority's (WMATA) communication and train control systems is extremely vulnerable to single point failure. Incidents of this nature could totally incapacitate or severely limit WMATA's ability to operate for weeks or months at a time.

This proposal for \$6million is for the design, procurement and installation of fiber optics equipment needed to provide redundancy and increased reliability to ensure the survivability of critical operations control functions to the Washington DC regional metrorail system. The intent of this effort is to ensure that the fiber optic network design is self-healing, to the greatest possible extent, and that no single-point of failure will incapacitate the overall rail system. This fiber optics equipment is an essential piece of the backbone communications components for putting in place a fully functional backup Operations Control Center (OCC). Putting in place a backup OCC will allow WMATA to address a single point of failure in its critical operational functions. The enhanced fiber optic configuration achieved through this request will also improve the communications reliability of the existing OCC.

WMATA lacks a redundancy in its critical operational control functions. Without the use of the Operations Control Center (OCC), WMATA and the region would forfeit a critical first response and evacuation asset during an emergency situation. If WMATA's OCC were disabled or had to be evacuated due to a number of scenarios it would be essentially impossible to maintain rail service with any degree of reliability. Without the use of the OCC, WMATA will be unable to communicate directly with their trains and customers, and monitor data flowing from their chemical detection system, thereby reducing the ability to execute in quick fashion actions to get trains and passengers waiting in stations out of harms way as an incident is unfolding. The experience in Madrid, where multiple bombs were detonated over several minutes, illustrates the importance of having the capacity to shut down and evacuate a transit system exposed to multiple attacks as quickly as possible in an effort to reduce casualties.

This request reflects the additional responsibility that WMATA has to its riders and to the region to reduce the vulnerability of the Metro system and to enhance the ability to serve the area in the event of an emergency. During the rush hour, 30 percent of the region's commuters rely on Metrorail service, and half of peak period riders are federal employees. A recently completed security risk assessment of WMATA conducted by the Department of Homeland Security's Office for Domestic Preparedness (ODP) ranks the building that houses the OCC as WMATA's most critical asset and most at risk based on vulnerability and consequence rankings of all WMATA assets. The assessments states that "it is paramount that WMATA continue the development of a backup OCC . . . Implementation of a backup OCC would significantly reduce the risk of each of the scenarios developed for this asset." The Federal Transit Administration (FTA) also identified WMATA's lack of redundancy in critical operations areas as a significant vulnerability in a security readiness assessment conducted in 2002.

**Project Goals, Objectives and Implementation Steps**

1. *GOAL - NCR Eight Commitments of Action - #5 Infrastructure Protection* – transportation and transit specifically is one of the NCR's most critical assets, critical for federal continuity of government operations and emergency response/evacuation during a terrorist event.
  - 1.1. Objective 1 – Provide enhanced reliability, continuity and redundancy for critical operations control system communications
    - 1.1.1. Implementation Step 1 – Design the Super Sonet Ring to provide necessary redundancy for the current and future Operations Control Center (OCC). Design will include testing procedures necessary to measure and evaluate success of the ring topology to transmit rail information. Verification that MDOT has existing conduit from Greenbelt to Branch Avenue Station under the Beltway will be necessary.
    - 1.1.2. Implementation Step 2 – Obtain MDOT authorization to utilize conduit under Beltway. Procure and install fiber cables and fiber optic equipment for the Super SONET Ring from Metro's Greenbelt Station through New Carrollton, Addison Road and into the Branch Avenue Station utilizing third party contract(s) as well as in-house forces.

The proposed project schedule with task and activities follows.



## Project Description

Under this \$6million grant, WMATA will design, procure and install part of the Super SONET Ring necessary to provide redundancy and increased reliability to ensure system operations, security and safety. SONET FOS (Synchronous Optical Network Fiber Optic System) is a standard for optical telecommunications transport. The system-wide Fiber Optics and Carrier Transmission System design serve as the transport medium to support the transmission of current and future rail system information, voice and data communications (manage train operations). The intent of this effort is to ensure that no single point of failure will incapacitate the overall system communications, reducing or interrupting rail capacity.

The basic design of the Fiber Optics System (FOS) is to provide a ring topology that will allow a variety of rail information to be sent through the system to the current and future Operations Control Center (OCC), providing redundancy and increased reliability to ensure system security and safety. There are a total of 9 rail routes that have or will have their own FOS ring. Some of the equipment to be purchased under this grant will allow the installation of a super ring that will connect three (3) of the individual route rings, providing a FOS network with a true redundancy.

The route rings will carry four types of information (Telephone Trunks, MISV data, Local Telephones, and Information/Control Data for the current OCC at Jackson Graham Building and the pre existing site for the backup OCC at the Carman Turner Facility). Each of the route rings, the Jackson Graham Building and Carman Turner Facility will eventually be connected to the super ring. The Jackson Graham Building will be changed from being the center point of all communications on the route rings to being a node on a super ring.

WMATA's request for this project is based on a DHS/ODP *risk-based* security assessment, in which the methodology parallels section 10 of the *HSPD-8 National Preparedness* and *HSPD-7 Critical Infrastructure Identification, Prioritization, and Protection*. The ODP assessment ranks the building that houses the OCC as WMATA's most critical asset and most at risk based on vulnerability and consequence rankings of all WMATA assets. The assessment states that "it is paramount that WMATA continue the development of the backup OCC." This assessment identified the need and WMATA security plans have prioritized this critical need. WMATA has begun the process to actively implement necessary infrastructure protection.

WMATA has applied its FY03 and FY04 UASI transit grants, totaling \$6.5 million, towards design and initiation of fiber optic and radio communications procurement activities for the backup OCC. WMATA anticipates using future ODP rail/transit grants towards furthering the development of the backup OCC as well as requesting additional funds directly through the congressional appropriations process. To date, however, Congress has not been willing to direct funds in the DHS Appropriations bill to address specific critical infrastructure protection needs.



Putting in place a fully functional backup OCC with enhanced regional communications capabilities with potential applications for other regional partners addresses two priorities focused on strengthening EOC/transportation communications coordination (#2 and #9) identified by the CAOs in July 2004 as top UASI priorities. It also falls under the fourth (Infrastructure Protection) of the "Eight Commitments to Action" put into place by the NCR Senior Policy Group in August, 2002. In addition, the Department of Homeland Security's fact sheet that accompanied the January 5, 2005 release of the *National Response Plan* lists "Protect and restore critical infrastructure and key resources" in the list of National Response Plan Incident Management Priorities.

# WMATA BACKUP OCC

TPB BRIEFING

May 18, 2005



Washington Metropolitan Area Transit Authority

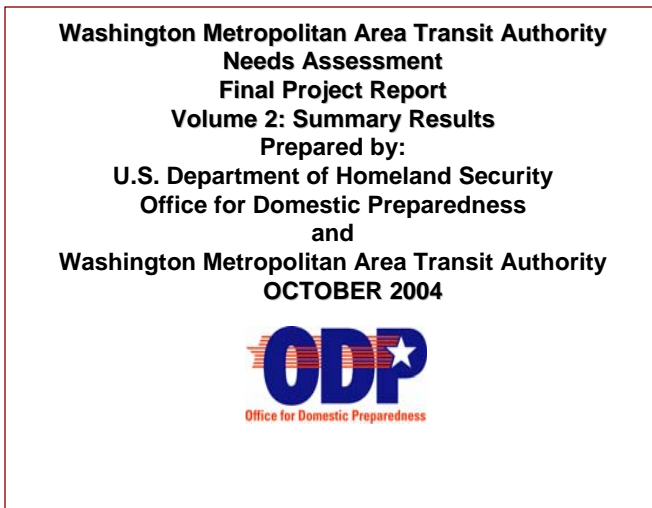
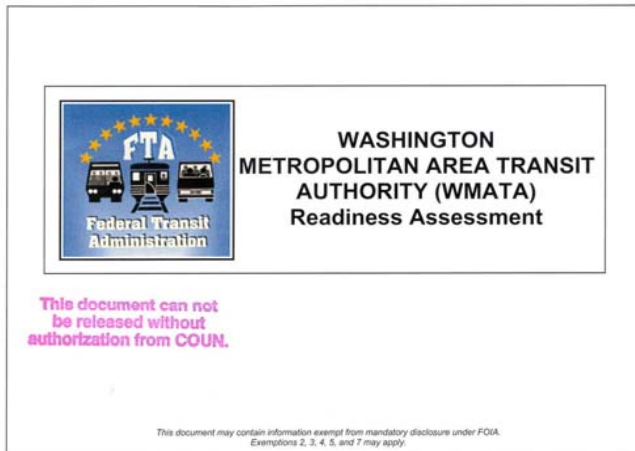


# Operations Control Center Keeps the Trains Running

- The OCC is the Brain and Nervous Center of the Metro System
- All chemical sensor detection data flows to OCC
- Without the OCC it's essentially impossible to maintain rail service
- Without Metrorail, gridlock would ensue on the region's roadways
- Gridlock would severely compromise emergency evacuation plans, Federal COOPs and private sector functions



# Post 9/11 Security Assessments Highlight Backup OCC Need



## FTA 2002 Assessment

- WMATA is critical for emergency evacuation in the event of a terrorist attack
- Redundancy of Operations Control Center (OCC) would eliminate single point of failure, promoting increased service reliability and consequence management

## DHS 2004 Assessment

- Quantitative risk-based analysis
- WMATA and other transit agencies are at risk to terrorist attack
- OCC rated WMATA's most critical asset and greatest risk to terrorism

## WMATA Viewpoint

- Federal funding decisions should recognize the unique aspects of Metro's service to the National Capital Region and the federal workforce

# Backup OCC is WMATA's #1 Security Priority

- Eliminates most critical/vulnerable single point of failure in operating system
- Backup OCC reduces the vulnerability of the Metro system and enhances regional emergency preparedness
- WMATA already has a building in place for the Backup OCC – not a bricks and mortar project
- Funding
  - WMATA applied all \$6.5 million of FY03/04 DHS Transit Grant funds to project
  - FY2005 UASI funds
    - WMATA applied for a \$6 million UASI grant for the project
    - Chief Administrative Officers (CAOs), States' Homeland Security Senior Policy Group (SPG) reviewed, did not provide UASI funding at this time
    - May be considered in the future
  - WMATA requests that TPB review and endorse the Backup OCC project for funding from security sources

# Requested TPB Action

- Authorize staff to write a letter for Chairman Mendelson's signature stating TPB's endorsement of WMATA's Backup OCC project as an important regional Homeland Security issue for funding consideration