Memorandum

MIAMI-DADE COUNTY

Date: March 4, 2016

To: Honorable Chairman Jean Monestime
and Members, Board of County Commissioners

From: Carlos A. Gimenez
Mayor

Subject: North Terminal APM System Screening Alternatives – Directive 151507

The following memorandum is in response to Resolution No. R-730-15 approved by the Board of County Commissioners (Board) on September 1, 2015, directing the Mayor to submit a report recommending potential enhancements to beautify and improve the visual appeal of the aesthetics along the Skytrain corridor viewed by travelling passengers, including the costs associated with those enhancements.

The primary variables for the Miami-Dade Aviation Department include cost, installation logistics, weather-related requirements, and maintenance requirements.

If additional information is required, please contact Miami-Dade Aviation Department Director Emilio T. Gonzalez at (305) 876-7077.

Pursuant to Ordinance 14-65, this memorandum will be placed on the next available Board meeting agenda.

c: Abigail Price-Williams, County Attorney
Jack Osterholt, Deputy Mayor, Office of the Mayor
Emilio González, Director, Aviation Department
Charles Anderson, Commission Auditor
Eugene Love, Agenda Coordinator

North Terminal Automated People Mover System Screening Alternatives

Below are three (3) main options to improve the aesthetics along the Miami International Airport Skytrain corridor: Guideway Wall-Mounted Systems, Rooftop-Mounted Systems, and a Vehicle-Mounted System.

1. Guideway Wall-Mounted Systems
   Any guideway-mounted fencing (one of several systems mounted on the wall next to the train guideway) must not impact the existing structure and should be able to withstand hurricane winds. These requirements, as well as the necessary long-term maintenance, factor into the cost of the system and potential impacts to the Automated People Mover (APM) operation, which is a major concern for the Miami-Dade Aviation Department (MDAD). The installation process would be prolonged due to the need for the ongoing operation of the APM system. The estimated cost for each of the three (3) guideway options listed below is $500,000.00, which is inclusive of structural engineering services, material procurement, and installation:

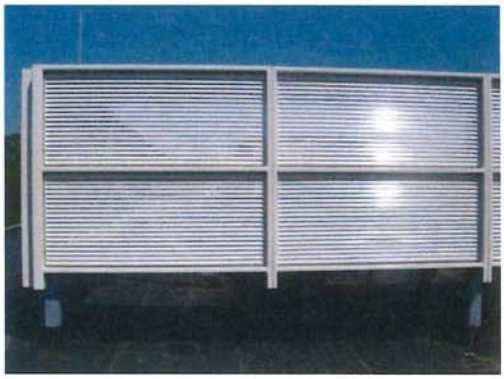
- Guideway Wall-mounted Framing and Rigid Opaque Screening
  Framing and Rigid Opaque Screening would require installation of framing along the guideway walls to hold the rigid opaque fencing. Multiple variations are available in material and design. This option carries with it several noteworthy areas of concern, including cost, installation coordination with existing operations, structural considerations, and long-term maintenance.

- Guideway Wall-mounted Framing and Sacrificial Fabric Screening
  A fabric screening solution would also require installation of framing along the guideway to support the screening. Structural design considerations would be similar to rigid opaque fencing including long-term maintenance requirements. The fabric could be designed to release in case of a hurricane or very high winds, however, if released, the material could lodge in the wheels of a train or a plane engine.

- Guideway-mounted Florida Department of Transportation-Type Glare Shields

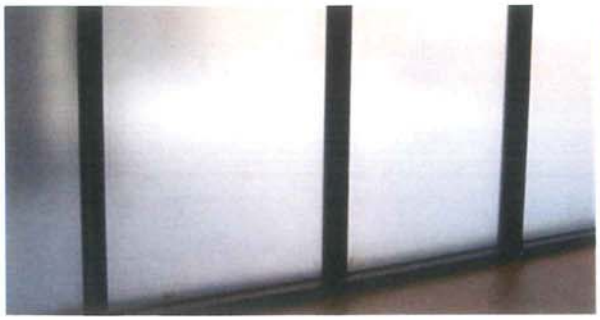
Florida Department of Transportation-type glare shields on top of the guideway walls work well when viewed at a direct angle; however, when viewed at a perpendicular angle to the vehicle, they do not provide full screening unless placed very close together. Wind loads, structural and installation concerns, and long-term maintenance costs need to be considered for financial reasons.

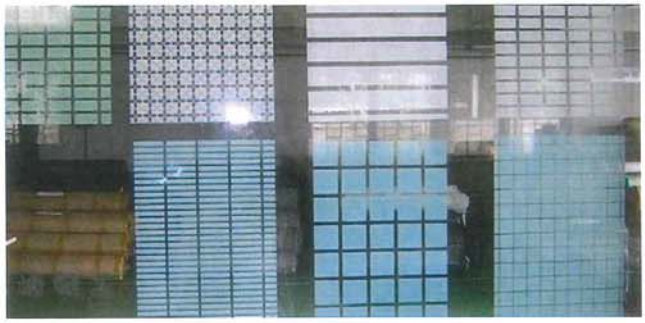
2. Rooftop-Mounted System
   A system attached to the roof rather than the guideway wall would limit impacts to the APM system, as installation could be undertaken without affecting train operations. Penetrations into the existing rooftops will require a very high standard of care in order to avoid long-term concerns of water intrusion, structural impacts, wind load, and long-term maintenance. The cost for this option, inclusive of structural engineering services, material procurement, and installation is estimated at $500,000.00.



3. Vehicle-Mounted System
   A vehicle-mounted solution would entail having an opaque or partially opaque window film application adhered to the interior or exterior windows. Films are available in solids and multiple designs, or MDAD could utilize site-specific branding such as Miami International Airport (MIA) and/or County logos. Interior window applications would not be exposed to weather impacts, but could be easily scratched or peeled away by passengers. An exterior application would not be easily accessible to passengers to be vandalized, but would be exposed to wear and tear by the weather.

Since the objective is to obscure the view of adjacent rooftops, primarily to the south of the APM system, screening films could be applied only to the south side of the vehicles, as the vehicles are not turned around during operation. However, aesthetics should be considered. It may be more desirable to include some type of film on both sides of the vehicle, with the south side mostly opaque and the north side more transparent, or to build an overall theme within the car, with a screen-only window on the south side, which is the side that faces the rooftops. The north side overlooks the airfield.





Window screening may only be applied to the side windows of the train because the front and rear windshields must remain clear for safety, operational, and maintenance purposes. This means that passengers in the front or rear cars would still have an unobstructed view of the surrounding airport, including adjacent rooftops. Additionally, the side windows could not be too heavily obscured by screen or made fully opaque, as the lack of visibility may invite a hazard when manual operation is required or in case of an emergency that requires an evacuation.

This solution would offer ease of maintenance and could be applied with little impact to train operations, existing facilities, or adjacent fixed facilities so that there would be no structural or wind load considerations. This option is the most cost effective and may be completed with in-house resources. The estimated cost, including materials and labor, is $50,000.00.

Recommendation

At this time, MDAD does not recommend pursuing any of these options due to the costs for installation and maintenance.