# APPENDIX K. SAFETY AND SECURITY TECHNICAL MEMORANDUM

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# MEMO

To: Robert Forrest, Valley Metro

From: HDR Project Team

Date: May 2018

RE: **Northwest Phase II Light Rail Extension Project**
*Safety and Security Technical Memorandum*

## 1.0 INTRODUCTION

This technical memorandum provides a general overview of safety and security considerations with respect to the Northwest Phase II Light Rail Extension Project in support of the Environmental Assessment. This document includes an evaluation of the light rail corridor and proposed stations. Specific safety and security design considerations would be further defined in the final design, permitting and construction of the project. This technical memorandum also describes the measures to be taken to enhance the safety and security of the Northwest Phase II Light Rail Extension Project and its riders, as well as residents and businesses in the corridor.

Valley Metro has established a set of comprehensive security activities emphasizing the importance of security in all aspects of the Light Rail Transit Starter Line system and associated extensions. These activities are documented in the following plans and would be updated to include the proposed project:

- System Safety Program Plan (Revision 11, 2015) – Establishes requirements for the identification, evaluation and minimization of safety risks throughout all Valley Metro systems and complies with Federal Transit Administration (FTA) regulations at 49 Code of Federal Regulations (CFR) Part 659, the Moving Ahead for Progress in the 21st Century (MAP-21) Act, the Fixing America's Surface Transportation (FAST) Act and Arizona Department of Transportation (ADOT) guidelines.
- System Security Program Plan (Revision 11, 2015) – Documents and assists in implementing and monitoring the System Security Program, describes the responsibilities of all staff, ensures secure design, sets security goals and objectives, establishes relationships with emergency management personnel and complies with FTA regulations at 49 CFR Part 659 and with ADOT guidelines.
- Emergency Management Plan (EMP) (Revision 9, 2015) – Assists in identifying, planning for, responding to and resolving emergency situations in an efficient, controlled and coordinated manner ("Rev. 2016 System Security and Emergency Preparedness Plan (SSEPP); SSEPP will incorporate EMP and SSPP").
- Accident/Incident Investigation Plan (Revision 8, 2015) – Establishes the requirements, responsibilities and procedures for investigating and documenting all accidents or incidents involving Valley Metro patrons, employees, facilities, vehicles and/or persons or equipment that may come in contact with the system.

Valley Metro's Safety, Security and Quality Assurance (SS&QA) Division or a designated third-party contractor would conduct, in cooperation with the local

responding police agency and a designated third-party contractor, a Threat and Vulnerability Assessment as part of the safe and secure operation of the extension. This would occur in conjunction with continued cooperation through a Regional Security Team consisting of law enforcement personnel system-wide to track, trend and respond to incidents along the entire system. The SS&QA Division would also continually evaluate safety and security elements, quality assurance audits, compliance and certification for the Northwest Phase II Light Rail Extension, including, but not limited to, the following:

- Threats and hazards associated with the light rail extension
- Design and architectural details to enhance safety and security
- Use of closed-circuit television (CCTV) cameras and lighting as specific design measures
- Security patrols of transit property and vehicles
- Ongoing train safety awareness education

# 2.0 SAFETY AND SECURITY

## 2.1 NO-BUILD ALTERNATIVE

The No-Build Alternative is not expected to have an adverse impact on safety and security because adequate safety and security measures would have already been established for the transit services included in this alternative.

## 2.2 BUILD ALTERNATIVE

The Build Alternative would not have an adverse effect on safety and security. The proposed light rail would be located in a designated fixed guideway, separated from vehicular traffic by a physical barrier. At intersections, appropriate signal timing, warning instruments (for example, crossing signals with flashing lights) and other measures would be implemented to avoid adverse impacts on pedestrian and vehicle safety when crossing the tracks. All elevated structures and bridges would incorporate railings and other features to lessen the chance of accidental falls and fencing to prevent items from falling to the ground below. Both park-and-ride facilities at Metrocenter and Rose Mofford Sports Complex and transit center at Metrocenter would be equipped with adequate lighting, emergency callboxes, CCTV cameras and security patrols.

### 2.2.1 Security Protection Safety Services

The design criteria for Valley Metro projects require that light rail stations be designed in accordance with Crime Prevention through Environmental Design guidelines. Also, the light rail vehicles, transit center, PNRs and stations would be designed in accordance with the Americans with Disabilities Act. CCTV would be provided at the station platforms, ticket vending machines and park-and-ride facilities. In addition, the stations, transit center and PNRs would have emergency call boxes that would be connected to Valley Metro's Operations Control Center, which would have direct communication with the City of Phoenix police and fire departments. The U.S. Department of Homeland Security also requires all such facilities to install U.S. Department of Homeland Security-

compliant trash cans that are either resistant to explosives or that use an open metal frame and clear bag.

The light rail vehicles would include passenger emergency reporting devices that allow passengers to communicate with the train operator. The vehicle interior and exterior would also be equipped with CCTV. The train operator could report problems directly to the Valley Metro Operations Control Center, which could then contact security or local police. Light rail vehicles would have bells, horns and flashing headlights to provide both audible and visual warnings as needed to alert drivers and pedestrians of an approaching train. In addition, the vehicles would be designed with energy-absorbing bumpers to lessen potential impacts in the event of a collision. The vehicle would also have low ground clearance, which would reduce the likelihood of a pedestrian sliding underneath the train in the event of a collision.

Valley Metro design standards require certain features to discourage pedestrians from illegally crossing the tracks and to enhance safety at permitted crossing locations. These features include, but are not limited to, pedestrian signals, lighting and well-marked crosswalks, which would be provided at all crossing locations. No trespassing signs would be installed identifying the guideway as a no trespassing zone. The station platforms would be marked with “Do Not Cross Tracks,” and signs to direct pedestrians to the proper crossing location would be incorporated into the Build Alternative design. The station platforms will also be signed appropriately as paid fare zones and demarcation painting/elements to clearly identify the station perimeter.

Security personnel would patrol the stations, park-and-rides, transit centers and trains. Security services for the future light rail system would be provided through a contract between Valley Metro and a private security services firm, similar to the contract Valley Metro has for the current light rail service. Fare inspections would be conducted by security personnel. The train operators and security personnel would be trained to spot potentially suspicious activities and to take appropriate action. The City of Phoenix Police Department would respond to criminal incidents and automobile or pedestrian accidents with the light rail vehicle, etc., while the City of Phoenix Fire Department would respond to fire and rescue emergencies.

### 2.2.2 Fire Protection and Emergency Medical Services

Light rail vehicles would yield to fire and emergency medical service vehicles at intersection crossings or anywhere else along the guideway.

The final design would include a guideway designed in accordance with the Valley Metro Design Criteria Manual, National Fire Protection Association NFPA-130 (Standard for Fixed Guideway Transit and Passenger Railway Systems) and the applicable fire and building codes.

### 2.2.3 Pedestrian Safety

To minimize the accident potential for students attending nearby schools, Valley Metro would conduct a safety education program to target elementary and junior high school students. The program would be similar to that carried out prior to operation of the existing light rail. That program included distribution to the schools of age-appropriate safety-related materials such as coloring books, word hunts, crossword puzzles, maze

worksheets, bookmarks and build-your-own-train with safety messages. In addition, Valley Metro maintains a website (http://www.valleymetro.org/safety/kids_safety_spot) that allows anyone accessing the site to download most of the materials and includes a link for teachers or administrators to request Valley Metro staff to make a presentation to their classrooms.

In addition, Valley Metro, as part of its standard procedures for initiating new services, would work with the City and local organizations to educate riders, automobile drivers, bicyclists and pedestrians about safety and security along the planned extension. This would include advertising, social media and other outreach efforts to explain how the light rail interacts with automobile traffic, bicycle lanes and pedestrian activities. This program would commence during the initial testing phase of operations and would work hand-in-hand with other safety and security outreach efforts for the regional transit system.

### 2.2.4 Elevated Structures

The Build Alternative would include a bridge over Interstate 17 that will end with an elevated station platform that will have a combination of elevators and stairs for passenger access.

The elevated station would be designed to lead pedestrian movements away from the edges of the structure, especially in areas where there is activity below. Railings would be included along the edges of the structure to help prevent falls. Multiple points of ingress and egress would be provided at each end of the structure, including stairs and escalators. Each elevator would include CCTV cameras and emergency call boxes that would connect to the local police department and Valley Metro security personnel. Fire suppression would be provided on the underside of the elevated structure above the transit center, and all parts of the structure would be accessible to emergency personnel. All applicable safety and security measures mentioned previously for at-grade stations including proper lighting, emergency call boxes and security patrols would be implemented on the elevated structures.

The light rail bridge over Interstate 17 would be controlled in a manner similar to the existing Tempe Town Lake Bridge along the current light rail corridor. Fencing and warning signs posted near the ramps leading up to the bridge would discourage pedestrian use of the bridge. A visual and audible warning system would be included at each end of the bridge that would recognize pedestrian and bicycle movement. This system would then notify these users that the bridge is not authorized for pedestrian or bicycle use, as well as notify Valley Metro security of the unauthorized use. The bridge would be designed according to ADOT standards, including physical barriers to prevent accidental falls or items falling to the highway below. The bridge would be wide enough to provide space for personnel to respond to emergencies that may occur on the bridge, including providing space for riders to disembark a stranded train.