

# **Metro**

*Los Angeles County Metropolitan Transportation Authority  
One Gateway Plaza  
3rd Floor Board Room*



## **Agenda - Final**

**Thursday, May 16, 2019**

**9:00 AM**

**One Gateway Plaza, Los Angeles, CA 90012,  
3rd Floor, Metro Board Room**

### **Operations, Safety, and Customer Experience Committee**

*Mike Bonin, Chair*

*Hilda Solis, Vice Chair*

*Jacquelyn Dupont-Walker*

*Robert Garcia*

*Janice Hahn*

*John Bulinski, non-voting member*

*Phillip A. Washington, Chief Executive Officer*

**METROPOLITAN TRANSPORTATION AUTHORITY BOARD RULES**  
(ALSO APPLIES TO BOARD COMMITTEES)

**PUBLIC INPUT**

A member of the public may address the Board on agenda items, before or during the Board or Committee's consideration of the item for one (1) minute per item, or at the discretion of the Chair. A request to address the Board should be submitted in person at the meeting to the Board Secretary. Individuals requesting to speak on more than three (3) agenda items will be allowed to speak up to a maximum of three (3) minutes per meeting. For individuals requiring translation service, time allowed will be doubled.

Notwithstanding the foregoing, and in accordance with the Brown Act, this agenda does not provide an opportunity for members of the public to address the Board on any Consent Calendar agenda item that has already been considered by a Committee, composed exclusively of members of the Board, at a public meeting wherein all interested members of the public were afforded the opportunity to address the Committee on the item, before or during the Committee's consideration of the item, and which has not been substantially changed since the Committee heard the item.

The public may also address the Board on non-agenda items within the subject matter jurisdiction of the Board during the public comment period, which will be held at the beginning and/or end of each meeting. Each person will be allowed to speak for up to three (3) minutes per meeting and may speak no more than once during the Public Comment period. Speakers will be called according to the order in which the speaker request forms are received. Elected officials, not their staff or deputies, may be called out of order and prior to the Board's consideration of the relevant item.

In accordance with State Law (Brown Act), all matters to be acted on by the MTA Board must be posted at least 72 hours prior to the Board meeting. In case of emergency, or when a subject matter arises subsequent to the posting of the agenda, upon making certain findings, the Board may act on an item that is not on the posted agenda.

**CONDUCT IN THE BOARD ROOM** - The following rules pertain to conduct at Metropolitan Transportation Authority meetings:

**REMOVAL FROM THE BOARD ROOM** The Chair shall order removed from the Board Room any person who commits the following acts with respect to any meeting of the MTA Board:

- a. Disorderly behavior toward the Board or any member of the staff thereof, tending to interrupt the due and orderly course of said meeting.
- b. A breach of the peace, boisterous conduct or violent disturbance, tending to interrupt the due and orderly course of said meeting.
- c. Disobedience of any lawful order of the Chair, which shall include an order to be seated or to refrain from addressing the Board; and
- d. Any other unlawful interference with the due and orderly course of said meeting.

**INFORMATION RELATING TO AGENDAS AND ACTIONS OF THE BOARD**

Agendas for the Regular MTA Board meetings are prepared by the Board Secretary and are available prior to the meeting in the MTA Records Management Department and on the Internet. Every meeting of the MTA Board of Directors is recorded on CD's and as MP3's and can be made available for a nominal charge.

## DISCLOSURE OF CONTRIBUTIONS

The State Political Reform Act (Government Code Section 84308) requires that a party to a proceeding before an agency involving a license, permit, or other entitlement for use, including all contracts (other than competitively bid, labor, or personal employment contracts), shall disclose on the record of the proceeding any contributions in an amount of more than \$250 made within the preceding 12 months by the party, or his or her agent, to any officer of the agency, additionally PUC Code Sec. 130051.20 requires that no member accept a contribution of over ten dollars (\$10) in value or amount from a construction company, engineering firm, consultant, legal firm, or any company, vendor, or business entity that has contracted with the authority in the preceding four years. Persons required to make this disclosure shall do so by filling out a "Disclosure of Contribution" form which is available at the LACMTA Board and Committee Meetings. Failure to comply with this requirement may result in the assessment of civil or criminal penalties.

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## LIMITED ENGLISH PROFICIENCY

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General Information/Rules of the Board - (213) 922-4600

Internet Access to Agendas - [www.metro.net](http://www.metro.net)

TDD line (800) 252-9040

**NOTE: ACTION MAY BE TAKEN ON ANY ITEM IDENTIFIED ON THE AGENDA**

**CALL TO ORDER**

**ROLL CALL**

**APPROVE Consent Calendar Items: 17, 18**

CONSENT CALENDAR

17. **SUBJECT: METRO GREEN LINE (MGL) TRACK CIRCUITS AND TRAIN-TO-WAYSIDE COMMUNICATION (TWC) UPGRADE - MODIFICATION NO. 2 FOR TRAIN CONTROL SIMULATOR LAB** [2019-0112](#)

**RECOMMENDATION**

AUTHORIZE the Chief Executive Officer to execute Modification No. 2 to Contract No. OP43306000 with Ansaldo STS USA, Inc. (Ansaldo STS) in the amount of \$996,221, increasing the total contract value from \$18,691,449 to \$19,687,670, for the fabrication of a train control simulator lab.

**Attachments:** [Attachment A - Procurement Summary](#)  
[Attachment B - Contract Modification/Change Order Log](#)  
[Attachment C - Expenditure Plan](#)  
[Attachment D - DEOD Summary](#)

18. **SUBJECT: WESTLAKE/ MACARTHUR PARK COMMUNITY MARKET VENDING PROGRAM** [2019-0241](#)

**RECOMMENDATION**

RECEIVE AND FILE status report on the Westlake/ MacArthur Park Community Market Vending Project.

**Attachments:** [Attachment A- Crime Reduction](#)  
[Attachment B - LA City Vending Rules](#)  
[Attachment C - Board of Supervisors Motion \(002\) Presentation](#)

NON-CONSENT

19. **SUBJECT: OPERATIONS EMPLOYEES OF THE MONTH** [2019-0144](#)

**RECOMMENDATION**

Operations Employees of the Month



Attachments:      [Presentation](#)

20.    **SUBJECT:**      **ORAL REPORT ON NEW BLUE UPDATE**      [2019-0145](#)

**RECOMMENDATION**

RECEIVE oral report on New Blue Update.

Attachments:      [Presentation](#)

21.    **SUBJECT:**      **PILOT BUS ONLY LANE**      **2019-0279**

**RECOMMENDATION**

**WITHDRAWN:** RECEIVE oral report on Pilot Bus Only Lane Project.

(ALSO ON EXECUTIVE MANAGEMENT COMMITTEE)

22.    **SUBJECT:**      **P2550 LIGHT RAIL VEHICLES MIDLIFE MODERNIZATION -**      [2019-0057](#)  
                          **REQUEST FOR PROPOSAL SOLICITATION AND**  
                          **ESTABLISH LOP**

**RECOMMENDATION**

CONSIDER:

- A.    AUTHORIZING the Chief Executive Officer (CEO) to solicit a Best Value Request for Proposals (RFPs), as competitive negotiations, pursuant to Public Contract Code (PCC) §20217 and Metro's procurement policies and procedures for the midlife modernization of Metro's P2550 Light Rail Vehicles (LRV's); and

(REQUIRES 2/3 VOTE OF THE FULL BOARD)

- B.    ESTABLISHING a Life of Project budget (LOP) of \$160 million for the midlife modernization of Metro's fifty (50) P2550 LRVs; for CP 214003 (P2550 Light Rail Vehicle Mid-Life Modernization). This is an initial estimate for the midlife project; adjustments will be made once proposals are received and evaluated.

23.    **SUBJECT:**      **MONTHLY UPDATE ON TRANSIT SAFETY AND SECURITY**      [2019-0229](#)  
                          **PERFORMANCE**

**RECOMMENDATION**

RECEIVE AND FILE Transit Safety and Security Report.

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Attachments:      [Attachment A - System-Wide Law Enforcement Overview March 2019](#)  
[Attachment B - MTA Supporting Data March 2019](#)  
[Attachment C - Key Performance Indicators March 2019](#)  
[Attachment D - Transit Police Summary March 2019](#)

24.    **SUBJECT:      OFFICE OF THE INSPECTOR GENERAL REPORT ON BUS OPERATOR SAFETY BARRIER USE AND EFFECTIVENESS STUDY**      [2019-0232](#)

**RECOMMENDATION**

RECEIVE AND FILE Report on Bus Operator Safety Barrier Use and Effectiveness Study.

Attachments:      [Attachment A - Bus Operator Safety Barrier Use and Effectiveness Study.pdf](#)  
[Attachment B - Management Response to Study Presentation](#)

25.    **SUBJECT:      MOTION 39 RESPONSE- BRIDGE HOUSING ON THE DIVISION 6 BUS YARD**      [2019-0250](#)

**RECOMMENDATION**

RECEIVE AND FILE report on Bridge Housing on the Division 6 Bus Yard in response to Board Motion 39.

Attachments:      [Presentation](#)

26.    **SUBJECT:      CONTRACT MODIFICATION - LA COUNTY DEPARTMENT OF HEALTH SERVICES C3 HOMELESS OUTREACH TEAMS**      [2019-0242](#)

**RECOMMENDATION**

AUTHORIZE the Chief Executive Officer to execute Contract Modification No. 1 to Contract No. H-705713 with Los Angeles County Department of Health Services to extend the contract for Metro's C3 (city, county, community) homeless outreach teams for an additional two years at the cost of \$4,940,000 annually for a total cost of \$9,880,000, inclusive of administrative fees.

Attachments:      [Presentation](#)

27.    **SUBJECT:      PHASED ART ASSET MANAGEMENT PROGRAM UPDATE**      [2019-0255](#)

**RECOMMENDATION**

RECEIVE AND FILE Annual Report on the Phased Art Asset Management Program.



**Board Report**

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**File #:** 2019-0112, **File Type:** Contract**Agenda Number:** 17.

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**OPERATIONS, SAFETY, AND CUSTOMER EXPERIENCE COMMITTEE  
MAY 16, 2019****SUBJECT: METRO GREEN LINE (MGL) TRACK CIRCUITS AND TRAIN-TO-WAYSIDE  
COMMUNICATION (TWC) UPGRADE - MODIFICATION NO. 2 FOR TRAIN  
CONTROL SIMULATOR LAB****ACTION: APPROVE CONTRACT MODIFICATION****RECOMMENDATION**

AUTHORIZE the Chief Executive Officer to execute Modification No. 2 to Contract No. OP43306000 with Ansaldo STS USA, Inc. (Ansaldo STS) in the amount of \$996,221, increasing the total contract value from \$18,691,449 to \$19,687,670, for the fabrication of a train control simulator lab.

**ISSUE**

The Metro Green Line (MGL) is presently upgrading the track circuits and TWC which provide train detection and transmit cab signals to maintain safe train speed and safe train separation. The system components require an extensive knowledge of electronics and software to properly maintain the train control system. The simulator lab will be used for providing maintenance troubleshooting and training Wayside personnel to identify and test for train control system failures that affect train movements.

**BACKGROUND**

In February 2018, the Metro Board authorized the single source award of Contract No. OP43306000 to Ansaldo STS USA, Inc., in the amount of \$18,655,967, for the upgrade of the MGL track circuits and TWC equipment.

In July 2018, Metro executed Modification No. 1, under the contract modification authority (CMA), in the amount of \$35,482, increasing the contract value from \$18,655,967 to \$18,691,449. Modification No. 1 acquired train operations simulation services from Ansaldo STS to evaluate the MGL and Crenshaw Line train speeds, headway times, and turnback for the realignment of both main tracks at the future Airport Metro Connector Station Central Platform and the temporary shoofly which will be in service during construction of the station.

Approval of Modification No. 2 increases the contract value by \$996,221 from \$18,691,449 to \$19,687,670, and will allow for the fabrication of a train control simulator lab to be used for the MGL

and Crenshaw Line.

## **DISCUSSION**

Metro Maintenance and Engineering has been implementing a phased program of upgrading the legacy MGL train control system that has been operational since the start of service in 1995. The first phase of work (replacement of obsolete vital control processors) has been completed. The current phase is to replace obsolete track circuits and TWC equipment. Upon completion of the project, the MGL train control system will be upgraded to the same equipment and configuration as the new Crenshaw Line.

The train control simulator lab will be essential for maintaining the train control system and reducing train service interruption times when railway signal faults occur. The simulator lab will include a shop test set for wayside electronic equipment that allows for onsite troubleshooting and testing of track circuit functionality to identify faulty circuits. Presently, Metro Wayside workforces do not have this capability and must send components back to the Original Equipment Manufacturer (OEM) to diagnose, test, and confirm faulty components as the root cause.

The simulator lab will also be used for training Metro Wayside workforces. It will replicate a subset of the MGL and Crenshaw Line train control equipment and include learning software that will allow trainees to observe and understand all the vital and non-vital functions and operation of the actual train control system.

## **DETERMINATION OF SAFETY IMPACT**

Approval of the recommendation will have a positive impact on safety and Metro's compliance with the OEM's factory replacement standard and specifications. Further, maintaining the rail system in a State of Good Repair (SGR) is essential to providing safe and reliable service to customers.

## **FINANCIAL IMPACT**

Funding for the modification amount of \$922,221 will come from Capital Project (CP) 205107 - Metro Green Line Train Control Track Circuits and TWC Replacement. The Board approved a Life-of-Project (LOP) budget of \$28,851,200 in September 2016. Funding of \$544,579 is included in the FY19 budget in cost center 3960 Transit Systems Engineering, project 205107, account 53102 - acquisition of equipment.

Since this is a multi-year contract, the Project Manager for CP 205107 will ensure that the balance of project funds is budgeted in future fiscal years.

### **Impact to Budget**

The source of funds for this procurement will come from Metro's share of Transportation Development Act (TDA) Article 4 as well as future Federal, State and local funding sources that are eligible for Rail Capital Projects. These funding sources will maximize the use of funds for these activities.

## **IMPLEMENTATION OF STRATEGIC PLAN GOALS**

Approval of this recommendation supports the following Metro Strategic Plan Goal 1: Provide responsive, accountable, and trustworthy governance within the Metro organization. This project will help maintain safety, service and reliability standards in an effort to provide a world-class transportation system that enhances quality of life for all who live, work, and play within LA County.

## **ALTERNATIVES CONSIDERED**

The Board may choose not to authorize Modification No. 2, but this is not recommended because the train control simulator lab provides vital onsite maintenance troubleshooting of faults with the train control system and helps reduce the interruption time in MGL service as train movements come to a stop until component failures are identified and repairs are completed.

## **NEXT STEPS**

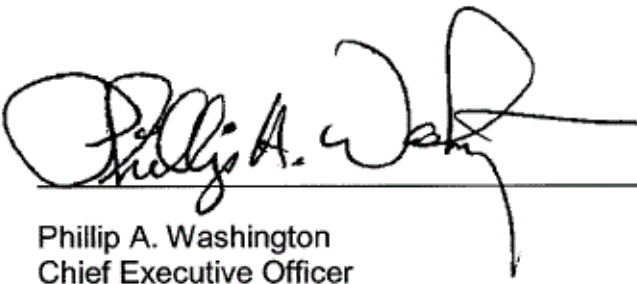
Upon approval of this recommendation, staff will execute Modification No. 2 to Contract No. OP43306000 with Ansaldo STS USA, Inc. to fabricate, deliver and provide factory training for the train control simulator lab.

## **ATTACHMENTS**

- Attachment A - Procurement Summary
- Attachment B - Contract Modification/Change Order Log
- Attachment C - Expenditure Plan
- Attachment D - DEOD Summary

Prepared by: Aderemi Omotayo, DEO, Wayside Systems Engineering and Maintenance, (213) 922-3243  
Geyner Paz, Senior Administrative Analyst, (213) 617-6251

Reviewed by: James T. Gallagher, Chief Operations Officer, (213) 418-3108  
Debra Avila, Chief, Vendor/Contract Management Officer, (213) 418-3051



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Phillip A. Washington  
Chief Executive Officer

## PROCUREMENT SUMMARY

## MGL Track Circuits &amp; Train-to-Wayside Communication Upgrade/OP43306000

1.	<b>Contract Number:</b> OP43306000		
2.	<b>Contractor:</b> Ansaldo STS USA, Inc.		
3.	<b>Mod. Work Description:</b> Train Control Simulator Lab		
4.	<b>Contract Work Description:</b> Upgrade of MGL's Track Circuits		
5.	<b>The following data is current as of:</b> April 10, 2019		
6.	<b>Contract Completion Status</b>		<b>Financial Status</b>
	<b>Contract Awarded:</b>	March 1, 2018	<b>Contract Award Amount:</b> \$18,655,967
	<b>Notice to Proceed (NTP):</b>	N/A	<b>Total of Modifications Approved:</b> \$35,482
	<b>Original Complete Date:</b>	February 28, 2023	<b>Pending Modifications (including this action):</b> \$996,221
	<b>Current Est. Complete Date:</b>	February 28, 2023	<b>Current Contract Value (with this action):</b> \$19,687,670
7.	<b>Contract Administrator:</b> Victor Zepeda		<b>Telephone Number:</b> (213) 922-1458
8.	<b>Project Manager:</b> Adremi Omotayo		<b>Telephone Number:</b> (213) 922-3243

**A. Procurement Background**

This Board Action is to approve Contract Modification No. 2 issued for the design and development of a simulator that will be used to train Metro personnel on the upgrade of the track circuit system on the Green Line, which will also be compatible with the Crenshaw Line.

This Contract Modification will be processed in accordance with Metro's Acquisition Policy and the contract type is a firm fixed price.

In February 2018, the Board authorized the single source award of Contract No. OP43306000 to Ansaldo STS USA, Inc., in the amount of \$18,655,967, for the upgrade of the MGL track circuits and TWC equipment. In July 2018, Modification No. 1 was approved in the amount of \$35,482, which increased the contract value from \$18,655,987 to \$18,691,449. The period of performance remains unchanged from March 2018 to February 2023 (Refer to Attachment B – Contract Modification/Change Order Log).

**B. Cost/Price Analysis**

The recommended price has been determined to be fair and reasonable based upon a cost analysis, ICE, technical analysis, and negotiation.

<b>Proposal Amount</b>	<b>Metro ICE</b>	<b>Negotiated Amount</b>
\$1,205,171	\$1,274,864	\$996,221



## CONTRACT MODIFICATION/CHANGE ORDER LOG

## MGL Track Circuits &amp; Train-to-Wayside Communication Upgrade/OP43306000

<b>Mod. No.</b>	<b>Description</b>	<b>Status (approved or pending)</b>	<b>Date</b>	<b>\$ Amount</b>
1	Train Operations Simulation Services	Approved	7/27/18	\$35,482
2	Simulator Lab	Pending	Pending	\$996,221
	<b>Modification Total:</b>			<b>\$1,031,703</b>
	<b>Original Contract:</b>			<b>\$18,655,967</b>
	<b>Total:</b>			<b>\$19,687,670</b>

Project 205107 Expenditure Plan

Metro Green Line Train Control Track Circuits and TWC Replacement

Non-Labor Item	Past ITD	Current FY 2019	Future FY 2020	Future FY 2021	Future FY 2022	Contingency FY 2023	Total
OP43306001 - Track Circuits and TWC Upgrade (Ansaldo STS USA)	\$ 932,798	\$ 500,000	\$ 4,000,000	\$ 7,000,000	\$ 6,223,169		\$ 18,655,967
OP43306001 - Modification No. 2 - Train Control Simulator Lab (Ansaldo STS USA)			\$ 996,221				\$ 996,221
PS32017000 - Solicitation Audit of RFP No. OP43306001 Track Circuits and TWC Upgrade Contract Award (BCA Watson Rice LLP)	\$ 12,690						\$ 12,690
PS54830-MOW-TO9 - Train Control Engineering Support Services (Gannett Fleming)		\$ 281,149	\$ 281,148	\$ 250,000	\$ 200,000		\$ 1,012,297
PS54830-MOW-TO4 - Project Scheduling Services (Gannett Fleming)		\$ 18,000	\$ 8,000	\$ 8,000	\$ 8,000		\$ 42,000
Project Management Support Services		\$ 126,746	\$ 126,745	\$ 125,000	\$ 125,000		\$ 503,491
Project Contingency						\$ 1,206,934	\$ 1,206,934
	\$ 945,488	\$ 925,895	\$ 5,412,114	\$ 7,383,000	\$ 6,556,169	\$ 1,206,934	\$ 22,429,600
<b>Metro Labor</b>	\$ 7,215	\$ 42,560	\$ 2,332,130	\$ 2,401,595	\$ 1,638,100		\$ 6,421,600
<b>Yearly Cash Flow Forecast</b>	\$ 952,703	\$ 968,455	\$ 7,744,244	\$ 9,784,595	\$ 8,194,269	\$ 1,206,934	\$ 28,851,200

DEOD SUMMARY

**METRO GREEN LINE (MGL) TRACK CIRCUITS AND TRAIN-TO-WAYSIDE  
COMMUNICATION (TWC) UPGRADE / CONTRACT NUMBER OP-4330-6000**

**A. Small Business Participation**

The Diversity and Economic Opportunity Department (DEOD) did not establish a Small Business Enterprise/Disabled Veteran Business Enterprise (SBE/DVBE) goal for this non-competitive, sole-source procurement. It was determined that the AF-900 First Generation Track Circuits and Train-to-Wayside (TWC) Modems are proprietary equipment. As such, there are no apparent subcontracting opportunities. Ansaldo will be providing the services with its own workforce.

**B. Living Wage and Service Contract Worker Retention Policy Applicability**

The Living Wage and Service Contract Worker Retention Policy (LW/SCWRP) is not applicable to this modification.

**C. Prevailing Wage Applicability**

Prevailing wage is not applicable to this modification.

**D. Project Labor Agreement/Construction Careers Policy**

Project Labor Agreement/Construction Careers Policy is not applicable to this Contract. Project Labor Agreement/Construction Careers Policy is applicable only to construction contracts that have a construction contract value in excess of \$2.5 million.



## Board Report

File #: 2019-0241, File Type: Informational Report

Agenda Number: 18.

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### OPERATIONS, SAFETY AND CUSTOMER EXPERIENCE COMMITTEE MAY 16, 2019

**SUBJECT: WESTLAKE/ MACARTHUR PARK COMMUNITY MARKET VENDING PROGRAM**

**ACTION: RECEIVE AND FILE**

#### **RECOMMENDATION**

RECEIVE AND FILE status report on the Westlake/ MacArthur Park Community Market Vending Project.

#### **ISSUE**

In March 2017 Metro launched a Westlake/ MacArthur Park Community Market Vendor Pilot Program which was made permanent in 2019. This report is an update of that program.

#### **BACKGROUND**

In an effort to manage longstanding street vending at Metro's Westlake/ MacArthur Park Station, Metro partnered with L.A. County Supervisor Hilda Solis, L.A. City Council Member Gil Cedillo, Central City Neighborhood Partners and Union de Vendedores Ambulantes (Union Of Street Vendors) to launch a one-year permitted vending pilot project at the Westlake/ MacArthur Park Station adjacent to the Red and Purple Lines. Metro's issued permit has allowed the station's plaza to address historical challenges to unpermitted vending at that location. The goals of the program are to minimize blight and disorder, ensure safe boarding and alighting, and to ultimately transform the station plaza into an inviting environment. The Westlake/ MacArthur Park Community Market Vending program demonstrates Metro's strong commitment to partnering with the community to creatively solve challenges. In light of the program overall success the program has been made permanent in 2019.

#### **DISCUSSION**

##### Operating Structure

The County and City of Los Angeles pooled financial resources to fund the Westlake/ Westlake/ MacArthur Park Community Market Vendor Pilot Program to cover the costs of various permits, maintenance and security. The program is administered by the Central City Neighborhood Partners, a community nonprofit street vendor membership organization that keeps records of vendor applications and coordinate member contributions as well as operating costs. Operating hours are

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from 7am to 7pm, seven days a week. There are total of 24 booths and a total of 68 spaces for vendors where approved goods are sold. All participants must demonstrate that they reside in the local community (LA City Council District -CD1) or demonstrate at least a year of selling in that area. The program is self-funded by partners as are the permit fees and cost of fixed post security.

#### Success and Lesson Learned Resulting in Partnership Improvements

Under Westlake/ MacArthur Park Community Market Vendor Pilot Program the objectives of the program were met-blight and disorder were reduced, the vendors no longer impeded space that otherwise was to be used for safe boarding and greater order at the station was achieved that ultimately has made the station into an inviting environment to the benefit of Metro and the community at large. To maintain safety of the area while honoring the community market partnership, Metro and CD1 together funded a LAPD fixed post officer in 2018 and 2019 resulting in the reduction of crime at that station since the launch of the project - 14% reduction in aggravated assaults and 61% reduction of robberies (**Attachment A**). To avoid community and vending location confusion, demarcation lines were drawn at the station to distinguish jurisdictions as Metro and LA City have different vending policies at that site.

#### SB 946

In September of 2018 former Governor Jerry Brown signed Senate Bill 946, the Safe Sidewalk Vending Act (Sen. Ricardo Laura) which required that cities and counties throughout the state create permit programs and establish health and safety policies for vending. Since the enacting of that legislation, L.A. City developed General Rules and Regulations for sidewalk vending through the Bureau of Street Services (ordinance for Council File No. 13-1493-S5) (**Attachment B**). Even in light of the changing law, Metro's Westlake/ MacArthur Park station maintains itself as attractive vending property. Vendors remain attracted to this historic vending site from all over the world and Metro's program allows for vending practices that are not allowed under the City ordinance (ex. vending kiosk at and around public transportation) which is a clear attractive benefit. LA County's Department of Consumer and Business Affairs has designated Metro's Westlake/ MacArthur Park Community Market Vendor Pilot Program project as a standard of best practices and Metro is working with the County to aid in the development of the County's vending policies (**Attachment C**).

#### FINANCIAL IMPACT

The vending program operates generally free to Metro. Metro and LA City equally share the cost of the one LAPD officer who is fixed post.

#### IMPLEMENTATION OF STRATEGIC PLAN GOALS

The program described supports Goal #2 and #4 of Metro's Strategic Goals. Goal #2, Deliver outstanding trip experiences for all users of the transportation system; and Goal #4, Transform Los Angeles County through regional collaboration and national leadership

#### ALTERNATIVES CONSIDERED

The alternative would be to cancel the vending program which would have a negative impact onto the vending population at that site.

**NEXT STEPS**

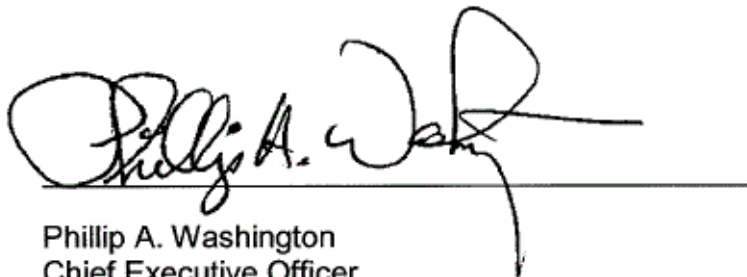
Continue to manage the vending project at that location site. Identify if other locations at Metro would be suitable to run similar host programs.

**ATTACHMENTS**

- Attachment A - Crime Reduction
- Attachment B - LA City Vending Rules
- Attachment C - Board of Supervisors Motion

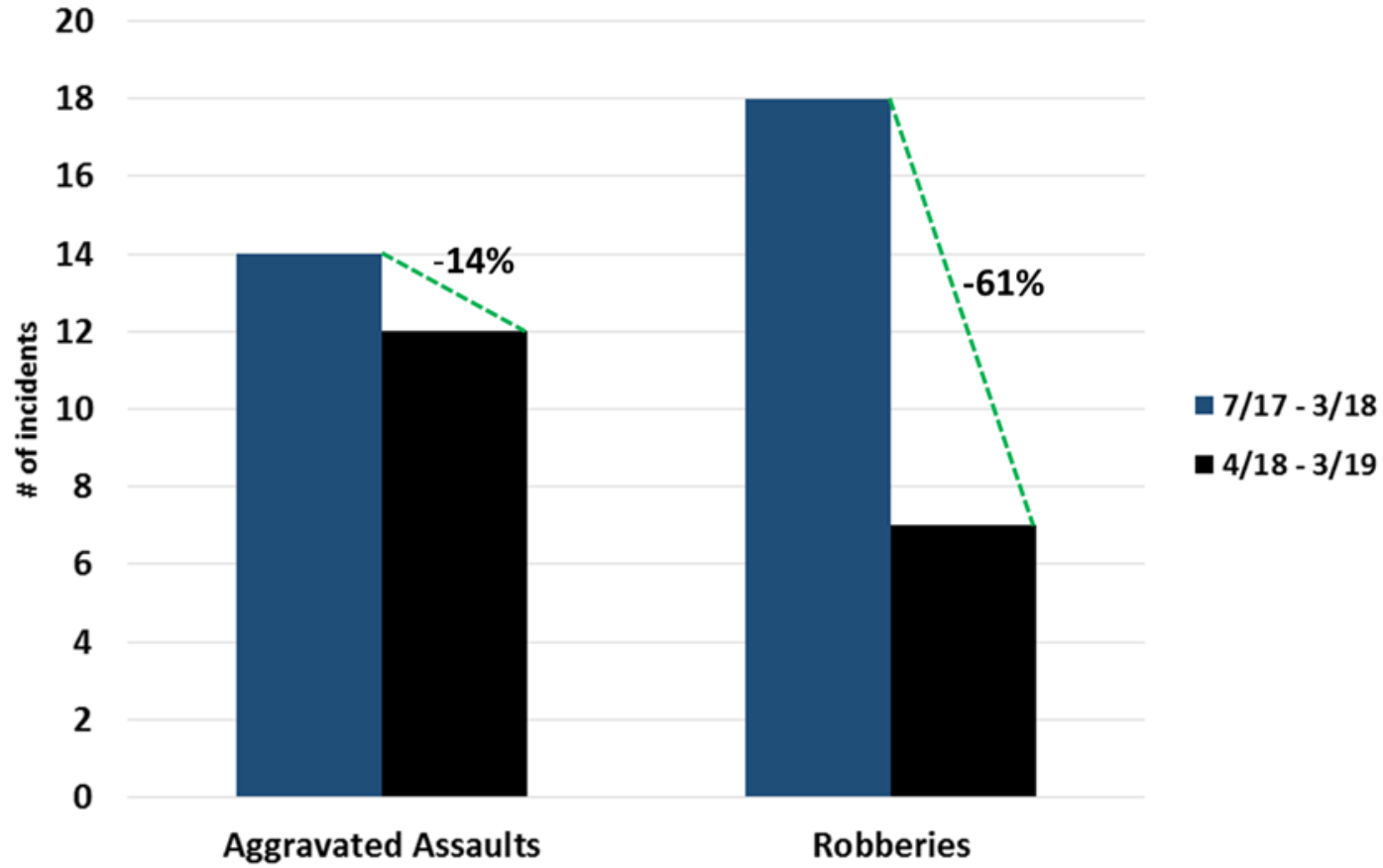
Prepared by: Jennifer E. Loew, Transit Security Special Projects Manager, System Security and Law Enforcement (213) 922-3646

Reviewed by: Alex Z. Wiggins, Chief, System Security and Law Enforcement, (213) 922-4433  
Reviewed by: Nadine Lee, Chief of Staff (Interim), Office of the Chief Executive Officer, (213) 922-7447



Phillip A. Washington  
Chief Executive Officer

### Decrease In Assaults and Robberies After Community Market Inception



The Bureau of Street Services (BSS) in support of the City of Los Angeles' (City) sidewalk vending ordinance for Council File No. 13-1493-S5, prepared the following general rules and regulations for all sidewalk vendors in the public right-of-way. All sidewalk vending from January 1, 2019 onward would be governed by these rules.

1. *Trash:* All food vending carts or kiosks shall be equipped with refuse containers large enough to contain all refuse generated by the operation of such cart or kiosk, and the operator of the food vending cart or kiosk shall pick up all refuse generated by such operation within a 50-foot radius of the cart or kiosk before such cart is moved. All recyclable materials shall be separated from other refuse and disposed of in a manner consistent with the current City of Los Angeles (City) recycling policy.
  
2. *Placement:* No person shall install, use, or maintain any vending cart or kiosk which projects onto, into, or over any sidewalk or parkway when such installation, use or maintenance endangers the safety of persons or property, or when such site or location is used for public utility purposes, public transportation purposes or other governmental use, or when such cart or kiosk unreasonably interferes with or impedes the flow of pedestrian or vehicular traffic, the ingress into or the egress from any residence or place of business, or the use of poles, posts, driveways, traffic signs or signals, hydrants, mailboxes, or other objects permitted at or near said locations. No vending cart or kiosk shall be so placed that the clear space for the passage of pedestrians upon the sidewalk is reduced to a width of less than five feet. No mobile or street vendor shall obstruct or cause to be obstructed the passage of any sidewalk, street, avenue, alley or any other public place, by causing people to congregate at or near the place where goods, wares, food, or merchandise of any kind is being sold or offered for sale.
  - a) Distances from the following above ground facilities (AGF) shall be no less than three feet:
    - (1) Street lights
    - (2) Edges of tree wells
    - (3) Parking meters
    - (4) Above ground utility structure
  - b) Distances from fire hydrants shall be no less than five feet.
  - c) Distances from any existing subsurface utility box, valve, or vault shall be no less than two feet.
  - d) Distance from face of curb and from edge of existing driveways shall be no less than 18 inches (see Diagram 1).
  - e) Distances between vendors shall be three feet clear (see Diagram 2).
  - f) No vending spaces will be permitted at bus stop locations, or at locations where there are existing above ground amenities such as street furniture (benches, bike racks), newsstands, and red curbs (see Diagram 3).
  - g) No vending spaces will be permitted in roadway, medians, pedestrian islands, and bikeways.
  - h) No stationary vending location shall be placed directly in front of any building. All stationary vending locations shall be placed 18 inches from the curb face.
  - i) Distance from permitted activities including but not limited to construction related street or lane closures, special events, swap meets, filming, and farmer's markets



General Rules and Regulations      Sidewalk Vending

shall be no less than 500 feet any boundary line of the permitted activity.

- j) Distance from an entrance way to any building, store, theatre, movie house, house of worship or place of public assembly shall be a minimum of 20ft.
- k) Distance from any restricted vending location as defined in Los Angeles Municipal Code Section 42.13(c) shall be no less than 500 feet any property line of the restricted location.

3. *Prohibited vending locations:*

- a) Vending is prohibited within 500 feet of:
  - (1) The Hollywood Walk of Fame, Universal Studios and the El Pueblo de Los Angeles Historical Monument, Staples Center/LA Live (as described in Chapter 25 of Division 22 of the Los Angeles Municipal Code);
  - (2) Dodger Stadium, the Hollywood Bowl, and the LA Coliseum/Banc of California Stadium on events days; and
  - (3) Any other venue as determined by the Board of Public Works.
- b) Vending at Venice Beach is limited to First Amendment protected expressive activities.
- c) Schools or any postsecondary educational facility attended by secondary pupils or private kindergarten, elementary, or secondary school facilities.

A map for each location will depict the boundaries. Appropriate signs with the no vending area will be posted at these locations.

4. *Vending of produce:* All produce regulated by the California Department of Food and Agriculture (CDFA) shall be handled, transported, displayed or disposed of in accordance with all CDFA regulations as they now exist or as amended from time-to-time, but not limited to, the following:

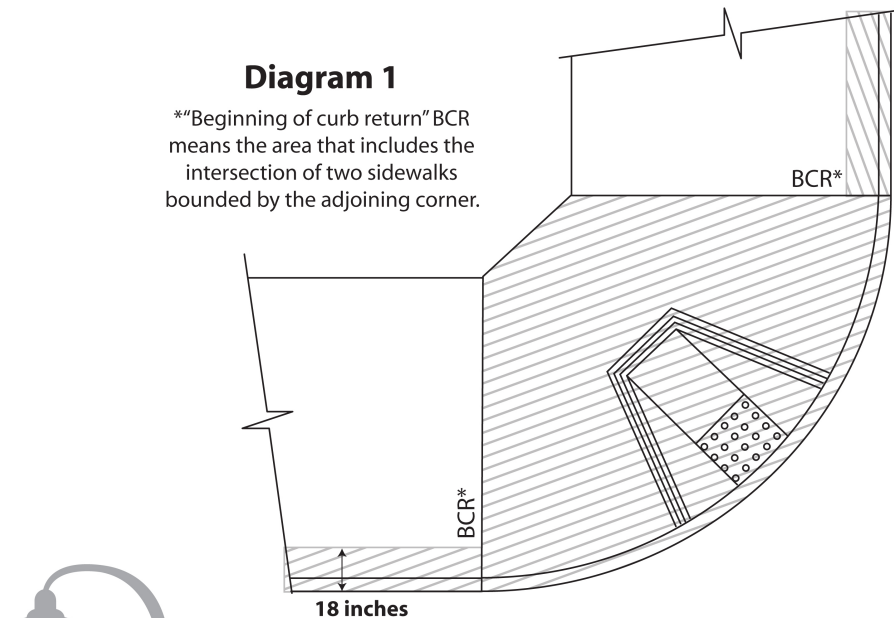
- a) All produce or commodities under quarantine by the CDFA will be protected or safeguarded in an approved manner by being bagged or screened to prevent infestation; any open display is prohibited.
- b) All produce, commodities, or their husks, cores, rinds, or pits shall be sealed in plastic bags before disposing.
- c) Every food vendor shall have a receipt, invoice, bill of lading or other acceptable proof of origin of all produce or commodities under quarantine.
- d) All produce or commodities under quarantine that are sold, offered for sale, or transported within the quarantine area, must be of commercial origin.
- e) Any violation of this section may result in the seizure of produce or commodities.

5. *Permits:* All sidewalk vendors must possess all applicable business, tax and health permits required by the State, County, and or City.

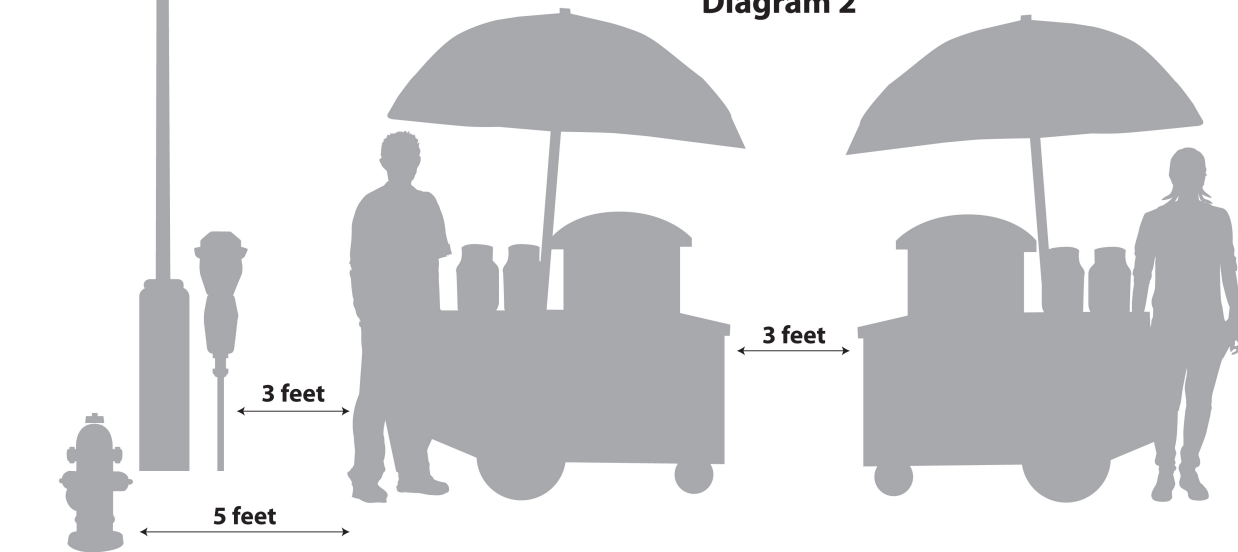


**Diagram 1**

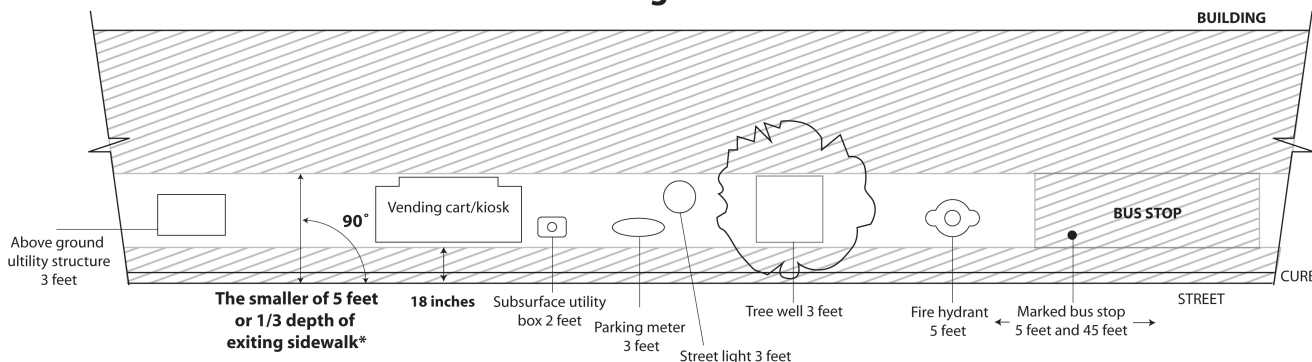
\*\*"Beginning of curb return" BCR means the area that includes the intersection of two sidewalks bounded by the adjoining corner.



**Diagram 2**



**Diagram 3**



\* Examples: 1/3 of depth of 9' wide sidewalk vendor space would be 3', 6' wide sidewalk vendor space would be 2'.

MOTION BY SUPERVISORS HILDA L. SOLIS AND  
JANICE HAHN

November 7, 2018

**Sidewalk Vending Assessment and Recommendations (SB 946)**

On September 17, 2018, Governor Jerry Brown signed the Safe Sidewalk Vending Act (SB 946) into law, which becomes effective on January 1, 2019. The bill defines a sidewalk vendor as a person who sells food or merchandise from a pushcart, stand, display, pedal driven cart, wagon, showcase, rack, or other non-motorized conveyance, or from one's person, upon a public sidewalk or other pedestrian path. Sidewalk vending is a prevalent industry and is a means of earning a living for many people in Los Angeles County, in particular women and immigrants. The recent passage of SB 946 will impact County vendors, brick-and-mortar businesses and community residents.

Key provisions of SB 946 include the prohibition of counties and cities from limiting where sidewalk vendors can operate, including public parks (unless there is an exclusive concessionaire under contract). The new law also prohibits requiring that sidewalk vendors ask permission from brick-and-mortar businesses or others to operate. SB 946 allows for regulations that are necessary to ensure health, safety and

MOTION

SOLIS \_\_\_\_\_

RIDLEY-THOMAS \_\_\_\_\_

HAHN \_\_\_\_\_

BARGER \_\_\_\_\_

KUEHL \_\_\_\_\_

welfare, including limiting hours, requiring sanitary conditions, ADA compliance, and requiring sidewalk vendors to obtain a permit and/or license. Local authorities may adopt additional requirements regulating the time, place, and manner of sidewalk vending, such as operating hours, sanitary conditions, business licenses, and seller's permit, among others as appropriate and necessary.

**WE THEREFORE MOVE** that the Board of Supervisors

- 1) Direct the Department of Consumer and Business Affairs (DCBA), in collaboration with its Office of Immigrant Affairs, County Counsel, Department of Public Health, Department of Public Works, Department of Regional Planning, Sheriff's Department, Treasurer and Tax Collector, the Women and Girls Initiative, Workforce Development, Aging and Community Services, and other County departments and agencies as necessary and authorize DCBA to engage a consultant(s) as appropriate to:
  - a. Engage community and business stakeholders to gather feedback on the sidewalk vending industry and identify the needs of sidewalk vendors, brick-and-mortar businesses, and community residents;
  - b. Engage cities, counties, and other government agencies to review and identify best practices and policies, including Los Angeles County Metropolitan Transportation Authority's pilot program for sidewalk vendors in Westlake/MacArthur Park;
  - c. Assess past County efforts, including policy and program proposals developed by departments, and use as a foundation to inform a set of comprehensive and integrated policies and programs in light of SB 946;

- d. Assess current County policies and codes that impact sidewalk vending and recommend comprehensive and integrated policies and programs under the framework of health, public safety and welfare; and
- e. Provide a written report back with findings and recommendations by May 31, 2019.

# # #

HLS:HS



# Westlake/ MacArthur Park Community Market Vendor Program

Operations, Safety and Customer Experience Committee

May 2019

# Westlake/ MacArthur Park Street Vendor Market

## Background:

- One year pilot program starting March 2017, made permanent
- Vendors in community to operate as an organized community market
- Sale of goods at Metro transportation hub
- First of its kind for Metro

## Purpose:

- Minimizing blight and disorder at the station
- Reducing unpermitted street vending
- Reducing crime
- Ensuring safe boarding for passengers on bus and rail
- Transforming station plaza into an inviting community location



## Operating Partners:

- Metro
- LA County Supervisor and Metro Board Member  
Hilda Solis
- LA City Council Member Gil Cedillo (CD 1)
  - ✓ Central City Neighborhood Partners
  - ✓ Union of Street Vendors (Union de Vendedores Ambulantes)



**Metro**

# Market Operating Structure

## Operation Hours

- 7am to 7pm (set up 6am, deconstruct by 8pm)
- 7 days a week

## Participants

- 34 Booths, 68 spaces for vendors
- Lottery system through Union of Street Vendors
- Demonstrate prior business in area
- Sale of goods only

## Fees

- Total Permit Fee- \$3,000 annual to Metro
- Vendor fee directly to Union of Street Vendors

## Security

- Two security guards on site funded.
- All hours of operation





# Lessons Learned

## Positive Outcomes

- Achieve program purpose
  - ✓ Minimizing blight and disorder at the station
  - ✓ Reducing unpermitted street vending
  - ✓ Reducing crime – 14% aggravated assaults; 61% Robberies
  - ✓ Ensuring safe boarding
  - ✓ Transforming station plaza into an inviting community environment



## Lessons Learned Integrated into Operations

- Integrated in new contract
  - ✓ Fixed Post LAPD (shared cost)
  - ✓ Payment In Advance
  - ✓ Jurisdiction Lines





**Board Report**

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**File #:** 2019-0144, **File Type:** Oral Report / Presentation

**Agenda Number:** 19.

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**OPERATIONS, SAFETY, AND CUSTOMER EXPERIENCE COMMITTEE  
MAY 16, 2019**

**SUBJECT: OPERATIONS EMPLOYEES OF THE MONTH**

**RECOMMENDATION**

Operations Employees of the Month

**DISCUSSION**

Operations Employees of the Month recognizes Transportation, Maintenance and Logistics frontline employees for their outstanding leadership contributions to the Operations Department.

# May Employees of the Month

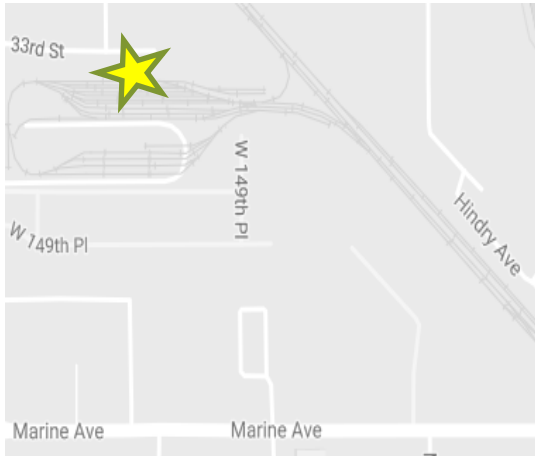


# Employees of the Month



## Transportation

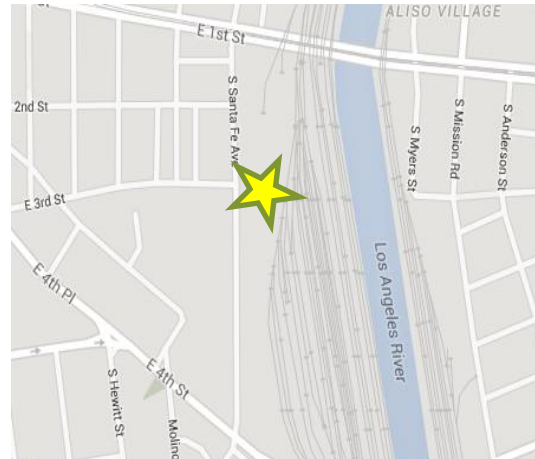
Train Operator  
**Linda Lawson**



**Division 22 – Lawndale**

## Maintenance

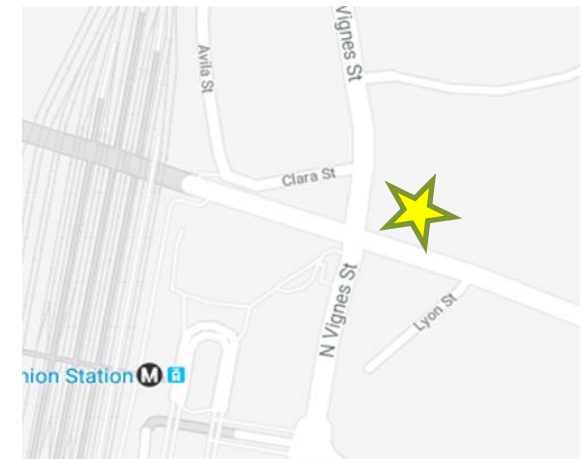
Rail Fleet Service  
Supervisor  
**Salvatore**  
**Bottancino**



**Division 20 – Los Angeles**

## Logistics

Storekeeper  
**Gustavo**  
**Diaz-Ordaz**



**Division 13 – Los Angeles**



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**File #:** 2019-0145, **File Type:** Oral Report / Presentation

**Agenda Number:** 20.

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**OPERATIONS, SAFETY, AND CUSTOMER EXPERIENCE COMMITTEE  
MAY 16, 2019**

**SUBJECT: ORAL REPORT ON NEW BLUE UPDATE**

**RECOMMENDATION**

RECEIVE oral report on New Blue Update.

**ITEM 20**

# **New Blue Update**

**May 16, 2019**

**Operations, Safety & Customer Experience Committee**



**Metro**

# New Blue Improvements Project

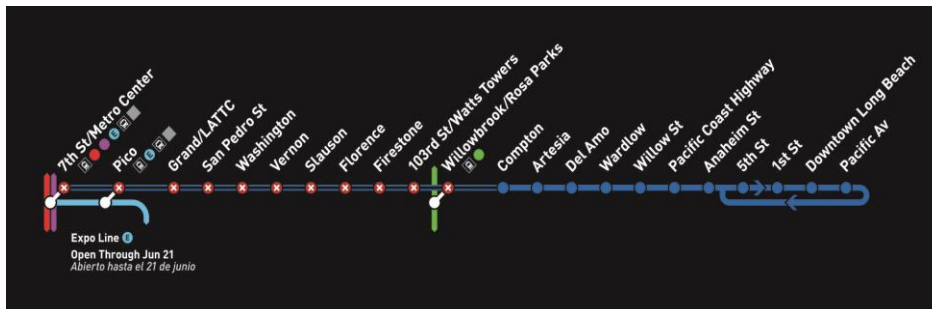
## Phase 1 and Phase 2

### South Segment (Phase 1)

- Scheduled to re-open between Downtown Long Beach and Compton Station on Saturday, June 1, 2019
- Construction and station improvements are in the final stages
- Test trains are now running between 103rd/Watts Towers and Downtown Long Beach and will continue through the end of May 2019
- Metro will continue to prioritize safety, service and reliability at all project stages, including the transition between the south and north segment closures

### North Segment (Phase 2)

- Blue Line: Out of service between Compton Station and 7th St/Metro Center starting **Saturday, June 1, 2019** through September 2019
- Expo Line: Pico and 7th St/Metro Center stations will close for 60-days starting **Saturday, June 22, 2019**
- Blue Line Willowbrook/Rosa Parks Station: Will remain out of service during the North Segment closure
- Green Line Willowbrook/Rosa Parks service will remain open



# New Blue Phase 2

## Blue Line Bus Shuttle Service Overview

### Blue Line **Local** Shuttle – 864 (Free)

- Serving all closed stations operating Blue Line hours
- Frequency: 6 -12 mins during peak, 12 mins during mid-day and weekends & 20 mins during late nights

### Blue Line **Select** Shuttle – 863 (Free transfer with TAP or \$1.75)

- Serving select closed stations, Monday through Friday, peak hours (5:30 am – 10am, 3–7:30pm)
- Frequency: 12 mins during peak

### Blue Line **Express** Shuttle – 860 (Free transfer with TAP or \$1.75)

- Express stops Monday through Friday (5am – 7:30pm); Saturday and Sunday (10am – 6pm)
- Frequency: 6 -12 mins during peak and 20 mins during mid-day and late nights

Starting Saturday, June 1, 2019 through September 2019





# New Blue Phase 2 Expo Bus Shuttle Service & Alternate Route Service

Starting Saturday, June 22, 2019 through September 2019

## Expo Line Local Shuttle – 856 (Free)

Serving LATTC/Ortho Institute, Pico, and 7th St/Metro Center stations

Red/Purple Lines will remain open

Expo Line Bus Shuttle service will be provided in addition to Blue Line shuttles

Frequency: 6 -12 mins during peak, 12 mins during mid-day and weekends & 20 mins during late nights

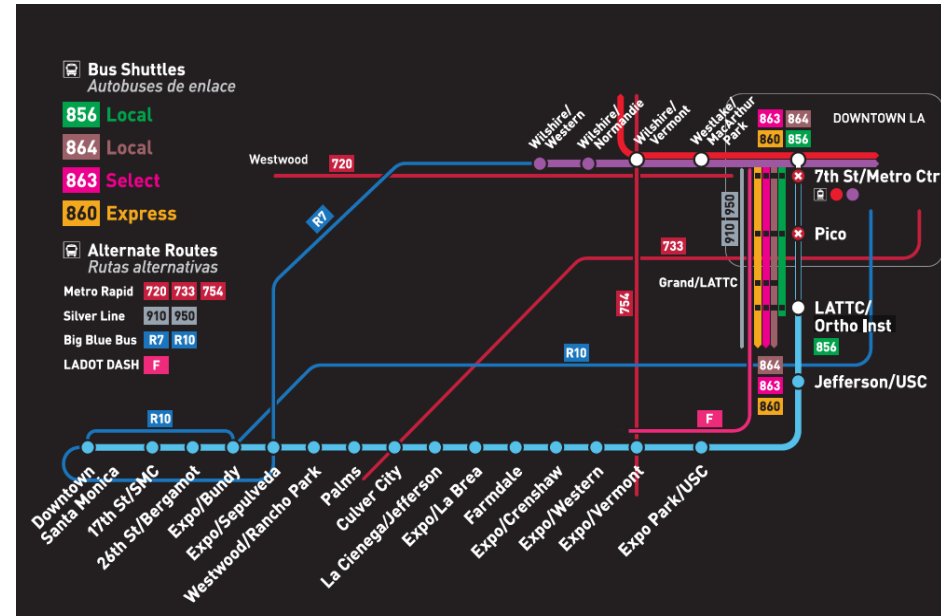
## Alternate Route Service

Metro Rapid: 720, 733 & 754

Metro Silver Line: 910 & 950

Big Blue Bus: R7 & R10

LADOT DASH: F



# New Blue Phase 2

## Flower Street Bus-only Lane

- Flower St from 7th to 28th St/I-110 ExpressLanes is utilized by multiple bus operators & thousands of riders
- New Blue North Segment closure is expected to increase the number of buses in the DTLA corridor (about 60 buses per hour travel the area during evening peak periods)
- Metro and LADOT will implement a temporary bus-only lane to reduce transit congestion and improve mobility during the New Blue Improvements Project (North Segment)
- Convert the curb lane on Flower St into a bus-only lane during weekday evening peak hours from 3pm-7pm
- Revise the “No Parking/Stopping” zone from 4pm-6pm to 3pm-7pm

Starting Monday, May 20, 2019 through September 2019



# New Blue Phase 2

## Communications Plan: Pre-Closure Outreach

### Briefings and Presentations to:

- Service Councils, Elected officials, Corridor cities, and Transit Operators (March - ongoing)
- Targeted community events, Town Halls, recreational centers, and schools (March - ongoing )

### Direct Customer Communication

- Rail posters and car cards (late April - ongoing)
- Direct-mail piece to Blue Line and Expo Line corridors (within .5 mile) (May)
- Station and Operator announcements (May - ongoing)
- Pre-closure temporary signage at stations (May - ongoing)
- Dedicated hotline and email (ongoing)
- In-person station outreach (Late April - ongoing)

### Traditional and Digital Media:

- News releases and Press Conference (May 29)
- Agency blogs and social media (April - ongoing)
- Advertisements: (May - ongoing)
  - Includes ethnic media: Spanish, Khmer, Korean, Filipino, Chinese, Japanese
  - Third party application coordination (May - ongoing)

# New Blue Phase 2

## Temporary Signage and Wayfinding Highlights

### Pre-closure:

- Station specific signs with: bus shuttle stop location map and directions, bus shuttle diagram, and closure information.
- General signage to notify customers about the closure.

### During the Closure:

- Station specific banners with bus shuttle location map and directions, bus shuttle diagram, closure information, TAP access information, and location of nearest vendor.
- Wayfinding signs from each station to the corresponding bus shuttle stop.
- Bus shuttle blades with bus shuttle information.
- Eye level signs accompanying the bus shuttle blades with bus shuttle diagram information.

# New Blue Phase 2 Temporary Signage and Wayfinding

## Pre-Closure Station Signage

**Blue Line**

**Station Closures**  
*Cierres de estacion*

**7th St/Metro Center to Compton**  
Autobuses de enlace y rutas alternativas

**Sat Jun 1 – Early Oct**  
Sábado 1 de junio hasta los últimos de septiembre

**Bus Shuttles & Alternate Routes**  
Autobuses de enlace y rutas alternativas

**Bus Shuttle Location**  
Sitio de autobuses de enlace

*This station will be closed due to the New Blue Improvements Project. Please use bus shuttles and alternate routes. Esta estación estará cerrada debido al nuevo proyecto de mejoras de Metro Blue Line. Por favor, utilice los autobuses de enlace y las rutas alternativas.*

metro.net/newblue

## Closed Station Banners

**Blue Line**

**Station Closed**  
*Estación cerrada*

**Bus Shuttle Location**  
Sitio de autobuses de enlace

**Sat Jun 1 – Early Oct**  
Sábado 1 de junio hasta los últimos de septiembre

**This station is closed due to the New Blue Improvements Project. Please use bus shuttles and alternate routes. Esta estación está cerrada debido al nuevo proyecto de mejoras de Metro Blue Line. Por favor, utilice los autobuses de enlace y las rutas alternativas.**

metro.net/newblue

## Wayfinding & Bus Shuttle Blades

**Shuttle Bus**

**Northbound**

**Southbound**

**Shuttle Bus**

**Northbound**

**Southbound**

Metro

**Metro**

**Shuttle Bus Northbound**

**860 Express Downtown Long Beach**

**861 Select Downtown Long Beach**

**862 Local Downtown Long Beach**



**No Trains**

**Shuttle Bus**

**Go to Long Beach Av/ Vernon Av**

**TAP vendor available at**  
Mundo Check Cashing  
1713 E. Vernon Av #113  
Gumbo Market  
1610 E. Vernon Av

Metro



## Board Report

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**File #:** 2019-0229, **File Type:** Informational Report

**Agenda Number:** 23.

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### OPERATIONS, SAFETY AND CUSTOMER EXPERIENCE COMMITTEE MAY 16, 2019

**SUBJECT: MONTHLY UPDATE ON TRANSIT SAFETY AND SECURITY PERFORMANCE**

**ACTION: RECEIVE AND FILE**

#### **RECOMMENDATION**

RECEIVE AND FILE Transit Safety and Security Report.

#### **ISSUE**

This report reflects March 2019 performance data as reported under the transit policing deployment strategy which is a combination of in-house fare compliance officers, private security for fixed assets and a multi-agency law enforcement deployment strategy by the Los Angeles Police Department (LAPD), Los Angeles County Sheriff's Department (LASD), and Long Beach Police Department (LBPD). The information in this report summarizes Crimes Against Persons, Crimes Against Property, and Crimes Against Society data under Uniform Crime Reporting (UCR) Program, average emergency response times, assaults on bus operators, and Metro's fare compliance and homeless outreach efforts. The Six Key Performance Indicators (KPI) are Uniform Crime Reporting guidelines, Average Emergency Response Times, Percentage of Time Spent on the System, Ratio of Staffing Levels vs Vacant Assignments, Ratio of Proactive vs Dispatched Activity, and Number of Grade Crossing Operations.

#### **BACKGROUND**

UCR is a National Incident-Based Reporting System from the US Department of Justice. It captures crime offenses in one of three categories: Crimes Against Persons, Crimes Against Property, and Crimes Against Society.

#### **DISCUSSION**

**Crime stats are as follows:**

##### **Crimes Against Persons**

For the month of March 2019, crimes against persons increased by 30 crimes system-wide compared to the same period last year.

##### **Crimes Against Property**

For the month of March 2019, crimes against property increased by 1 crime system-wide compared to the same period last year.

### **Crimes Against Society**

For the month of March 2019, crimes against society decreased by 8 crimes system-wide compared to the same period last year.

According to our data, there was an increase in transient related crimes: 59 suspects in 2019 vs. 25 in 2018, an increase of 136%. The number of transient related victims was 18 in 2019 vs 20 in 2018. We believe the weather played a major factor in the increase. Checking the weather data for March: daytime temperature was in the mid to upper 60's (with a few exceptions) and night time was in the low 50's. The cold weather would have increased the traffic of transients on the trains, platforms, and buses. Transients tend to commit crimes against persons such as assault with a deadly weapon (knives, bottles), battery (hitting, spitting, resisting arrest), and property crimes (theft), as well as entering (trespassing) and refusing to leave areas that only authorized personnel are permitted to enter to stay out of the cold.

### **Bus Operator Assaults**

There were 9 bus operator assaults reported in March, which is the same number compared to the same period last year.

### **Average Emergency Response Times:**

Emergency response times averaged 5.50 minutes for the month of March.

### **Physical Security Improvements:**

The Systems Security and Law Enforcement division continues to provide a secure and safe environment for our patrons and employees. Our Metro Facility physical security assessment was completed, and the report was presented to key Metro leaders in Bus and Rail Operations, Information Technology and Facilities. The physical security assessment of Union Station started in August and concluded in February 2019.

We are working closely with the Los Angeles Police Department to develop a concept of the operations for the deployment of the Thruvision detection at range technology. We have had several meetings with the LAPD, and we continue to develop the procedures that will protect the public and Metro.

The System Security Plan was updated for 2018 and submitted to the California Public Utilities Commission representatives, and declared in accordance with the law by the CPUC

We continue to improve our new Transit Watch application, and we hope to have the prototype ready this summer.

The Red Line ancillary area surge continues, and we are making progress with securing our underground rail stations. We are assisting the New Blue Line construction (Phase 1) and the upcoming Phase 2 later in the year.

**Metro’s Homeless Efforts:**

In spring 2016, Metro created the Metro Homeless Task Force to address the displaced persons that have turned to Metro system and property for alternative shelter. Out of the Task Force, Metro created the Metro Transit Homeless Action Plan which was presented to the Metro Board of Directors in February 2017. The Action Plan’s goals are to enhance the customer experience, maintain a safe and secure system, and provide coordinated outreach. Components of the plan include Metro’s coordination with County and City Measure H and Measure HHH. The plan also called for the hiring of two C3 teams (County, City, Community) through the County Department of Health Services as indicated by Metro’s Board of Directors. The C3 teams are to provide coordinated and responsive outreach to the homeless and to ultimately get them in housing resources.

**Metro’s C3 Homeless Outreach Teams:**

Metro’s C3 Homeless Outreach teams’ twelve-month pilot program began on May 22, 2017 with initial homeless outreach on the Red Line. Since the launch of Metro’s C3 Homeless Outreach teams they have provided substantial homeless outreach-with 4,798 total unduplicated homeless contacts,1,137 of whom have been linked to permanent housing solutions with a total of 88 homeless persons permanently housed. In FY19 Metro expanded the C3 teams from two to eight teams to cover rail, bus and Union Station. The original time for bus owl deployment was 11:30 p.m. - 8:30 a.m. The bus owl deployment was changed last month to 4:00 a.m. - 12:30 p.m. to enable more homeless persons to receive social services.

**C3 Homeless Outreach March 1, 2019 through March 31, 2019:**

Performance Measure	March Number Served	Project Year to date Number Served
Contacts with unduplicated individuals	220	4,798
Unduplicated individuals engaged	57	2,658
Unduplicated individuals provided services (obtaining vital documents, follow-up activities, transportation, CES packet, clinical assessment, etc.) or successful referral (supportive services, benefits linkage etc.)	111	1,942
Unduplicated individuals engaged who are successfully linked to an interim housing resource	47	742
Unduplicated individuals engaged who are linked to a permanent housing resource	4	307
Unduplicated individuals engaged who are permanently housed	5	88

Staff received two LAPD referrals this month. One person completed a CES packet, was given an ID voucher, and was referred to winter shelter. One person could not be located.

**Impact Story resulting in Stable Housing**

Since August 1, 2017, Metro outreach C3 team members had been working to engage a 23 year old African American male from Texas who was on probation for various non-violent crimes. The client has a history of 5150 and been homeless since the age of 19. Initially, the client denied any



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behavioral health or the need for any assistance. However, the C3 Outreach Team continued to follow-up to show support. After ongoing attempts to engage and build rapport, the client agreed to seriously discuss interim housing placement and was transferred to an interim housing facility in early November 2018. The client recently had a change of heart through a friend who is currently receiving assistance through PATH. As a consequence of this relationship, PATH Outreach Team workers have successfully waitlisted the client for specific placement at the Weingart or SRO Russ Center. PATH Outreach Team workers continue to work with the client.

### ***C3 Coordination with Law Enforcement***

With Metro System Security and Law Enforcement personnel as the lead, Metro's C3 teams coordinate with LAPD's Homeless Outreach and Protective Engagement (HOPE) Teams, LASD's Mental Evaluation Teams (MET), Long Beach PD, and Metro's Transit Security Officers, in an effort to engage the homeless and provide placement into services. These law enforcement entities provide gap service on the lines for homeless outreach when the C3 Teams are off duty or working another portion of the system.

### ***Sheriff Mental Evaluation Team (MET) Contacts March 3, 2019 through April 6, 2019***

These monthly statistics only include contacts of the Transit MET Units. They do not include contacts made by other Transit Services Bureau personnel. In addition to the below data:

- Transported 24 clients to other homeless outreach connection services.
- 4 LASD County MET ride-a-long Deputies worked at TSB with 2 TMET teams on 03/10/19.
- 2 teams assessed a homeless encampment on a non-revenue line at 2750 Artesia Blvd., Redondo Beach, CA 90278 on 01/15/19.
- 3 teams conducted a homeless encampment assessment at Breakwater Village on 03/18/19.
- 1 team conducted a homeless encampment cleanup at Breakwater Village on 03/18/19.
- 1 team attended Human Trafficking Training, 03/24/19 - 03/30/19.
- 2 teams assessed a homeless encampment on non-revenue line at 19136 Jacob Avenue, Cerritos, CA on 04/04/19.
- 7 teams attended MTA's Bus Familiarization Training at Division 8, 4500 West Griffith St., Carson, CA on 04/03/19.

### ***Long Beach Quality of Life Officers Update March 2019***

The Quality of Life officers began working with LBPD at the beginning of February 2019. The first three weeks training was with our Patrol Mental Evaluation Teams and Patrol Quality of Life Officers. Additionally, the Blue Line Closure was in effect for the entire month of March. The number of contacts should increase once the "New Blue" is opened.

Quality of Life Officers are currently working with Metro on the following homeless encampment

locations:

- East side border of Division 11
- Blue Line right of Way border north of the Wardlow Station
- Working with department’s West Division Patrol Quality of Life Officers on a location at Long Beach Boulevard and 20<sup>th</sup> Street.

**March 2019 Law Enforcement Homeless Outreach**

ACTION	LAPD HOPE	LASD MET	LBPD
Contacts	356	651	249
Referrals	352	394	237
5150 Holds	17	14	1
Mental Illness	27	200	85
Substance Abuse	59	146	44
Veterans	9	8	6
Shelter	6	15	10
Motel Housing Plan	0	0	2
VA Housing	1	0	1
Return to Family	2	3	0
Transitional Long Term Housing	4	0	0
Detox	1	0	0
Rehab	5	0	0

**Metro’s Encampment Protocol:**

Metro has developed an encampment protocol to be applied to all of Metro properties. Metro has cleared LA City and Long Beach City localities to address Divisions 1, 2 and 11. Orange Line clean-ups have occurred at Hazeltine, Coldwater and Louise. Metrolink is submitting encampment locations for clearing.

**Measure H Generalist:**

Metro’s Homeless Action Plan integrates itself into the work provided under Measures H and HHH. Part of the E6 Strategies of Measure H includes 40 additional outreach workers otherwise known as “generalists” to conduct outreach on government properties including Metro, and countywide parks, libraries, beaches and harbors. These generalists do not go past the fare gates and their data, per the county will not be extrapolated for Metro. However, these generalists currently work with the C3 teams to provide outreach services.

**Mental Health Outreach Workers:**

Metro pilot program with the LA County Department of Mental Health has been reinstated as County mental health outreach workers have become available.

### **Faith Based Partnership**

Since January, Metro has hosted three regional faith leader roundtable discussions to identify ways that Metro and the Faith based community in LA County may partner to serve the homeless. There is a major opportunity for faith based groups to provide additional housing to homeless contacts on Metro by increasing shelter space and/or engaging in collections that may entice homeless persons to agree to receiving services. Metro invites faith based groups and local nonprofits interested in providing resources to transit located homeless to contact Metro's System Security and Law Enforcement Department.

#### **..Attachments**

#### **ATTACHMENTS**

Attachment A - System-Wide Law Enforcement Overview March 2019

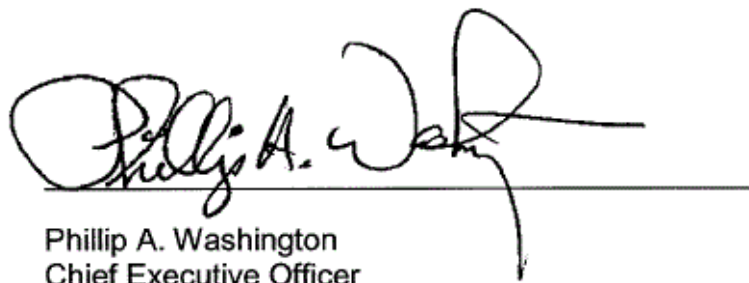
Attachment B - MTA Supporting Data March 2019

Attachment C - Key Performance Indicators March 2019

Attachment D - Transit Police Summary March 2019

Prepared by: Alex Z. Wiggins, Chief, System Security and Law Enforcement,  
(213) 922-4433

Reviewed by: Phillip A. Washington, Chief Executive Officer, (213) 922-7555



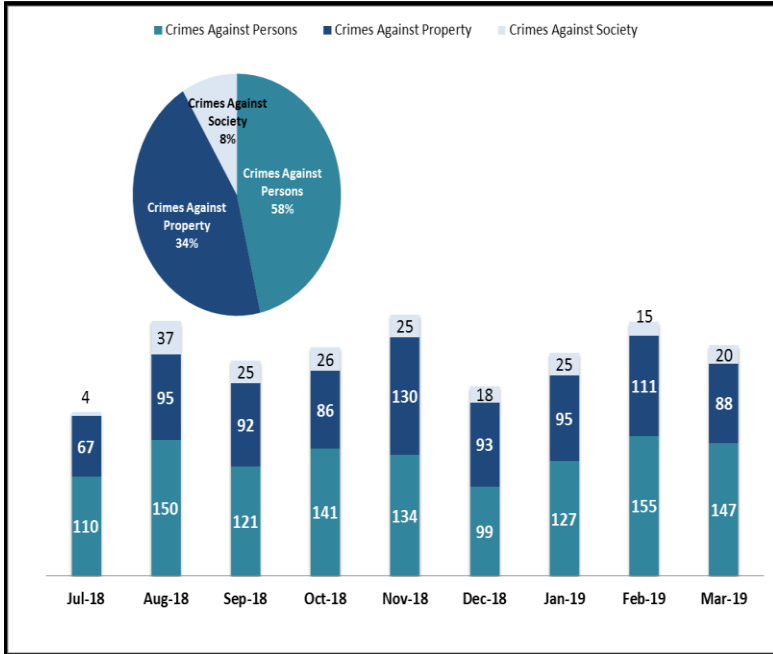
Phillip A. Washington  
Chief Executive Officer

# SYSTEM-WIDE LAW ENFORCEMENT OVERVIEW

MARCH 2019

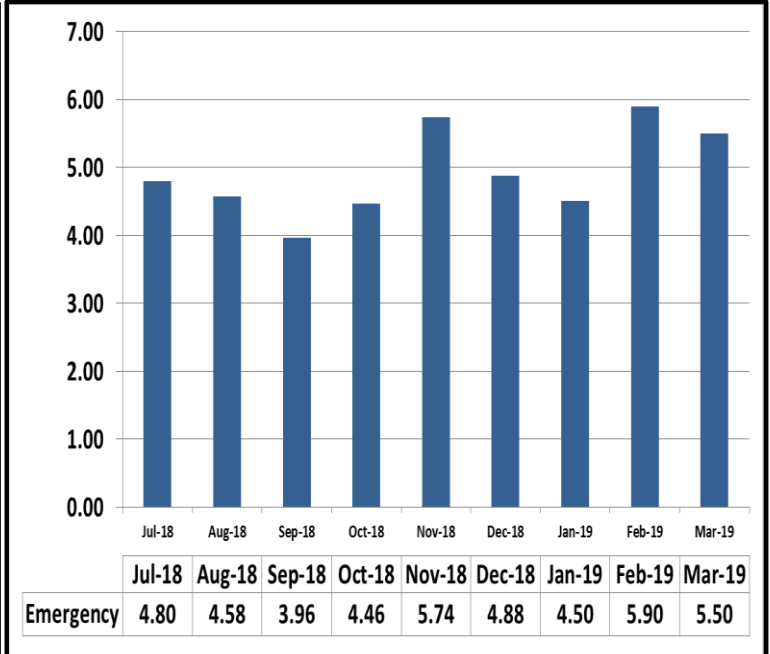
Attachment A

## Crimes Against Persons, Property, and Society



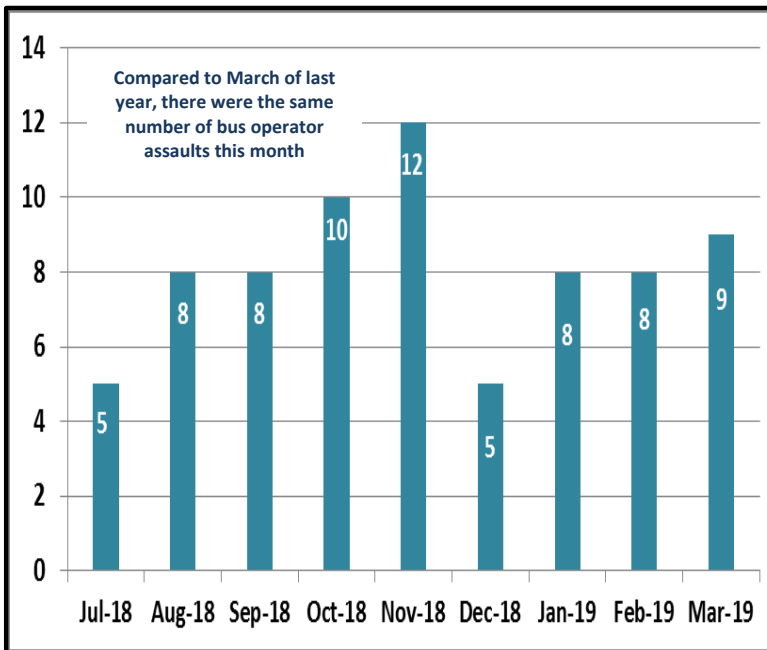
When compared to the same period last year, Crimes Against Persons increased by 30 crimes, Crimes Against Property increased by 1 crime, and Crimes Against Society decreased by 8 crimes.

## Average Emergency Response Times

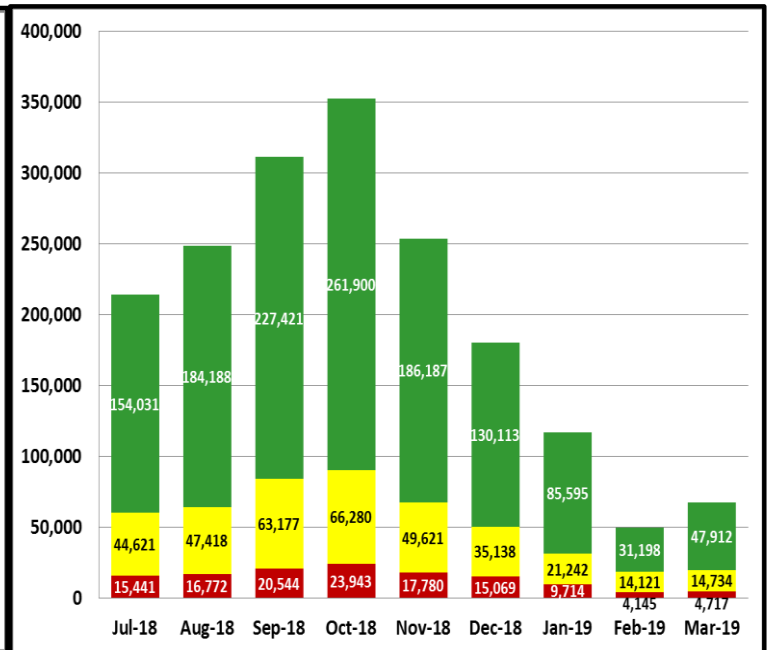


Average emergency response time was 5.50 mins.

## Bus Operator Assaults



## Fare Compliance



**Green Checks**- Occurs when a patron has valid fare

**Yellow Checks**- Occurs when a patron has valid fare, but did not tap at transfer station

**Red Checks**- Occurs when a patron has invalid fare

### MONTHLY UPDATE ON TRANSIT POLICING PERFORMANCE - MARCH 2019

REPORTED CRIME				
CRIMES AGAINST PERSONS	LAPD	LASD	LBPD	FYTD
Homicide	0	0	0	0
Rape	0	0	0	0
Robbery	1	0	0	42
Aggravated Assault	0	0	0	34
Aggravated Assault on Operator	0	0	0	0
Battery	4	0	0	54
Battery Rail Operator	0	0	0	3
Sex Offenses	0	0	0	4
<b>SUB-TOTAL</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>137</b>
CRIMES AGAINST PROPERTY	LAPD	LASD	LBPD	FYTD
Burglary	0	0	0	3
Larceny	2	2	0	72
Bike Theft	0	0	0	4
Motor Vehicle Theft	0	0	1	9
Arson	0	0	0	0
Vandalism	0	0	1	16
Other	0	0	0	7
<b>SUB-TOTAL</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>111</b>
CRIMES AGAINST SOCIETY	LAPD	LASD	LBPD	FYTD
Weapons	0	0	0	15
Narcotics	0	2	0	67
Trespassing	0	1	0	10
<b>SUB-TOTAL</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>92</b>
<b>TOTAL</b>	<b>7</b>	<b>5</b>	<b>2</b>	<b>340</b>

CRIMES PER STATION				
STATION	CRIMES AGAINST PERSONS	CRIMES AGAINST PROPERTY	CRIMES AGAINST SOCIETY	FYTD
7th St/Metro Ctr	2	0	0	8
Pico	0	0	0	5
Grand/LATTC	0	1	0	4
San Pedro St	0	0	0	5
Washington	0	0	0	5
Vernon	0	0	0	4
Slauson	0	0	0	10
Florence	0	0	1	13
Firestone	0	0	0	14
103rd St/Watts Towers	3	1	0	11
Willowbrook/Rosa Parks	0	2	2	25
Compton	0	0	0	22
Artesia	0	0	0	9
Del Amo	0	0	0	8
Wardlow	0	1	0	14
Willow St	0	0	0	9
PCH	0	0	0	1
Anaheim St	0	0	0	4
5th St	0	0	0	2
1st St	0	0	0	1
Downtown Long Beach	0	0	0	3
Pacific Av	0	0	0	4
Blue Line Rail Yard	0	1	0	2
<b>Total</b>	<b>5</b>	<b>6</b>	<b>3</b>	<b>183</b>

ARRESTS				
AGENCY	LAPD	LASD	LBPD	FYTD
Felony	0	3	0	171
Misdemeanor	2	48	28	924
<b>TOTAL</b>	<b>2</b>	<b>51</b>	<b>28</b>	<b>1,095</b>

CITATIONS				
AGENCY	LAPD	LASD	LBPD	FYTD
Other Citations	24	52	9	993
Vehicle Code Citations	1	17	173	1,204
<b>TOTAL</b>	<b>25</b>	<b>69</b>	<b>182</b>	<b>2,197</b>

CALLS FOR SERVICE				
AGENCY	LAPD	LASD	LBPD	FYTD
Routine	3	29	5	504
Priority	24	41	22	1,137
Emergency	6	5	6	409
<b>TOTAL</b>	<b>33</b>	<b>75</b>	<b>33</b>	<b>2,050</b>

DISPATCHED VS. PROACTIVE			
AGENCY	LAPD	LASD	LBPD
Dispatched	19%	2%	1%
Proactive	81%	98%	99%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

PERCENTAGE OF TIME ON THE RAIL SYSTEM	
Blue Line-LAPD	90%
Blue Line-LASD	82%
Blue Line-LBPD	0%

GRADE CROSSING OPERATIONS				
LOCATION	LAPD	LASD	LBPD	FYTD
Washington St	183	0	0	616
Flower St	75	0	0	201
103rd St	4	0	0	46
Wardlow Rd	0	0	3	33
Pacific Ave.	0	0	0	1
Willowbrook	0	12	0	314
Slauson	0	3	0	29
Firestone	0	7	0	38
Florence	0	10	0	79
Compton	0	8	0	194
Artesia	0	4	0	145
Del Amo	0	6	0	117
Long Beach Blvd	0	0	0	0
<b>TOTAL</b>	<b>262</b>	<b>50</b>	<b>3</b>	<b>1,813</b>

LEGEND	
Los Angeles Police Department	
Los Angeles County Sheriff's Department	
Long Beach Police Department	

### MONTHLY UPDATE ON TRANSIT POLICING PERFORMANCE - MARCH 2019

REPORTED CRIME			
CRIMES AGAINST PERSONS	LAPD	LASD	FYTD
Homicide	0	0	0
Rape	0	0	0
Robbery	0	1	24
Aggravated Assault	0	1	8
Aggravated Assault on Operator	0	0	0
Battery	0	10	30
Battery Rail Operator	0	0	0
Sex Offenses	1	0	9
<b>SUB-TOTAL</b>	<b>1</b>	<b>12</b>	<b>71</b>
CRIMES AGAINST PROPERTY	LAPD	LASD	FYTD
Burglary	0	0	0
Larceny	2	0	36
Bike Theft	0	0	0
Motor Vehicle Theft	0	1	8
Arson	0	0	0
Vandalism	0	2	10
<b>SUB-TOTAL</b>	<b>2</b>	<b>3</b>	<b>54</b>
CRIMES AGAINST SOCIETY	LAPD	LASD	FYTD
Weapons	0	1	9
Narcotics	0	4	27
Trespassing	0	1	2
<b>SUB-TOTAL</b>	<b>0</b>	<b>6</b>	<b>38</b>
<b>TOTAL</b>	<b>3</b>	<b>21</b>	<b>163</b>

ARRESTS			
AGENCY	LAPD	LASD	FYTD
Felony	0	7	63
Misdemeanor	0	54	303
<b>TOTAL</b>	<b>0</b>	<b>61</b>	<b>366</b>

CITATIONS			
AGENCY	LAPD	LASD	FYTD
Other Citations	0	65	446
Vehicle Code Citations	0	10	109
<b>TOTAL</b>	<b>0</b>	<b>75</b>	<b>555</b>

CALLS FOR SERVICE			
AGENCY	LAPD	LASD	FYTD
Routine	0	132	1,249
Priority	14	94	638
Emergency	3	10	87
<b>TOTAL</b>	<b>17</b>	<b>236</b>	<b>1,974</b>

DISPATCHED VS. PROACTIVE		
AGENCY	LAPD	LASD
Dispatched	19%	7%
Proactive	81%	93%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>

CRIMES PER STATION				
STATION	CRIMES AGAINST PERSONS	CRIMES AGAINST PROPERTY	CRIMES AGAINST SOCIETY	FYTD
Redondo Beach	2	0	0	5
Douglas	0	0	0	1
El Segundo	0	0	0	0
Mariposa	4	0	0	5
Aviation/LAX	0	1	0	2
Hawthorne/Lennox	1	0	0	5
Crenshaw	0	0	0	8
Vermont/Athens	0	0	0	10
Harbor Fwy	1	0	0	7
Avalon	0	1	0	10
Willowbrook/Rosa Parks	2	0	6	19
Long Beach Bl	1	2	0	19
Lakewood Bl	0	0	0	7
Norwalk	2	1	0	7
<b>Total</b>	<b>13</b>	<b>5</b>	<b>6</b>	<b>105</b>

PERCENTAGE OF TIME SPENT ON THE RAIL SYSTEM	
Green Line-LAPD	91%
Green Line-LASD	79%

LEGEND	
Los Angeles Police Department	
Los Angeles County Sheriff's Department	

### MONTHLY UPDATE ON TRANSIT POLICING PERFORMANCE - MARCH 2019

REPORTED CRIME			
CRIMES AGAINST PERSONS	LAPD	LASD	FYTD
Homicide	0	0	0
Rape	0	0	5
Robbery	3	0	36
Aggravated Assault	3	0	19
Aggravated Assault on Operator	0	0	0
Battery	13	2	68
Battery Rail Operator	0	0	0
Sex Offenses	1	0	14
<b>SUB-TOTAL</b>	<b>20</b>	<b>2</b>	<b>142</b>
CRIMES AGAINST PROPERTY	LAPD	LASD	FYTD
Burglary	0	0	2
Larceny	11	1	117
Bike Theft	0	0	24
Motor Vehicle Theft	0	0	0
Arson	0	0	0
Vandalism	1	0	13
<b>SUB-TOTAL</b>	<b>12</b>	<b>1</b>	<b>156</b>
CRIMES AGAINST SOCIETY	LAPD	LASD	FYTD
Weapons	0	1	3
Narcotics	0	0	1
Trespassing	0	0	1
<b>SUB-TOTAL</b>	<b>0</b>	<b>1</b>	<b>5</b>
<b>TOTAL</b>	<b>32</b>	<b>4</b>	<b>303</b>

ARRESTS			
AGENCY	LAPD	LASD	FYTD
Felony	1	2	22
Misdemeanor	13	6	55
<b>TOTAL</b>	<b>14</b>	<b>8</b>	<b>77</b>

CITATIONS			
AGENCY	LAPD	LASD	FYTD
Other Citations	59	8	222
Vehicle Code Citations	5	0	50
<b>TOTAL</b>	<b>64</b>	<b>8</b>	<b>272</b>

CALLS FOR SERVICE			
AGENCY	LAPD	LASD	FYTD
Routine	5	48	433
Priority	56	37	309
Emergency	6	1	29
<b>TOTAL</b>	<b>67</b>	<b>86</b>	<b>771</b>

DISPATCHED VS. PROACTIVE		
AGENCY	LAPD	LASD
Dispatched	19%	11%
Proactive	81%	89%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>

CRIMES PER STATION				
STATION	CRIMES AGAINST PERSONS	CRIMES AGAINST PROPERTY	CRIMES AGAINST SOCIETY	FYTD
7th St/Metro Ctr	1	0	0	7
Pico	1	0	0	6
LATTC/Ortho Institute	0	1	0	7
Jefferson/USC	4	1	0	15
Expo Park/USC	1	4	0	18
Expo/Vermont	2	1	0	19
Expo/Western	0	0	0	29
Expo/Crenshaw	2	2	0	19
Farmdale	4	1	0	14
Expo/La Brea	2	2	0	15
La Cienega/Jefferson	0	0	0	15
Culver City	0	0	0	7
Palms	1	0	0	6
Westwood/Rancho Park	0	0	0	11
Expo/Sepulveda	2	0	0	10
Expo/Bundy	0	0	0	6
26th St/Bergamot	0	0	0	4
17th St/SMC	0	0	0	6
Downtown Santa Monica	2	1	1	14
Expo Line Rail Yard	0	0	0	0
<b>Total</b>	<b>22</b>	<b>13</b>	<b>1</b>	<b>228</b>

PERCENTAGE OF TIME SPENT ON THE RAIL SYSTEM	
Expo Line-LAPD	89%
Expo Line-LASD	70%

GRADE CROSSING OPERATIONS			
LOCATION	LAPD	LASD	FYTD
Exposition Blvd	467	0	1,958
Santa Monica	0	21	220
Culver City	0	0	32
<b>TOTAL</b>	<b>467</b>	<b>21</b>	<b>2,210</b>

LEGEND	
Los Angeles Police Department	
Los Angeles County Sheriff's Department	

### MONTHLY UPDATE ON TRANSIT POLICING PERFORMANCE - MARCH 2019

REPORTED CRIME		
CRIMES AGAINST PERSONS	LAPD	FYTD
Homicide	0	0
Rape	1	3
Robbery	4	47
Aggravated Assault	10	61
Aggravated Assault on Operator	0	1
Battery	20	150
Battery Rail Operator	1	2
Sex Offenses	4	20
<b>SUB-TOTAL</b>	<b>40</b>	<b>284</b>
CRIMES AGAINST PROPERTY	LAPD	FYTD
Burglary	0	0
Larceny	18	153
Bike Theft	1	9
Motor Vehicle Theft	0	0
Arson	0	0
Vandalism	0	9
<b>SUB-TOTAL</b>	<b>19</b>	<b>171</b>
CRIMES AGAINST SOCIETY	LAPD	FYTD
Weapons	0	0
Narcotics	0	0
Trespassing	7	17
<b>SUB-TOTAL</b>	<b>7</b>	<b>17</b>
<b>TOTAL</b>	<b>66</b>	<b>472</b>

ARRESTS		
AGENCY	LAPD	FYTD
Felony	4	7
Misdemeanor	15	28
<b>TOTAL</b>	<b>19</b>	<b>35</b>

CITATIONS		
AGENCY	LAPD	FYTD
Other Citations	47	59
Vehicle Code Citations	13	13
<b>TOTAL</b>	<b>60</b>	<b>72</b>

CALLS FOR SERVICE	
AGENCY	LAPD
Routine	7
Priority	183
Emergency	8
<b>TOTAL</b>	<b>198</b>

DISPATCHED VS. PROACTIVE	
AGENCY	LAPD
Dispatched	24%
Proactive	76%
<b>TOTAL</b>	<b>100%</b>

PERCENTAGE OF TIME SPENT ON THE RAIL SYSTEM	
Red Line- LAPD	86%

LEGEND	
Los Angeles Police Department	

CRIMES PER STATION				
STATION	CRIMES AGAINST PERSONS	CRIMES AGAINST PROPERTY	CRIMES AGAINST SOCIETY	FYTD
Union Station	5	4	1	42
Civic Center/Grand Park	1	2	1	9
Pershing Square	2	2	0	31
7th St/Metro Ctr	2	2	0	33
Westlake/MacArthur Park	3	0	0	39
Wilshire/Vermont	1	0	0	23
Wilshire/Normandie	1	0	0	3
Vermont/Beverly	1	1	0	11
Wilshire/Western	0	0	0	3
Vermont/Santa Monica	1	1	1	17
Vermont/Sunset	4	0	3	11
Hollywood/Western	3	0	0	14
Hollywood/Vine	4	3	0	41
Hollywood/Highland	5	1	1	21
Universal City/Studio City	1	0	0	7
North Hollywood	6	3	0	27
Red Line Rail Yard	0	0	0	0
<b>Total</b>	<b>40</b>	<b>19</b>	<b>7</b>	<b>332</b>



### MONTHLY UPDATE ON TRANSIT POLICING PERFORMANCE - MARCH 2019

REPORTED CRIME			
CRIMES AGAINST PERSONS	LAPD	LASD	FYTD
Homicide	0	0	1
Rape	0	0	1
Robbery	1	1	9
Aggravated Assault	1	1	15
Aggravated Assault on Operator	0	0	0
Battery	3	3	27
Battery Rail Operator	0	0	0
Sex Offenses	1	0	2
<b>SUB-TOTAL</b>	<b>6</b>	<b>5</b>	<b>55</b>
CRIMES AGAINST PROPERTY	LAPD	LASD	FYTD
Burglary	0	0	1
Larceny	1	1	33
Bike Theft	0	2	10
Motor Vehicle Theft	0	2	8
Arson	0	0	0
Vandalism	0	2	11
<b>SUB-TOTAL</b>	<b>1</b>	<b>7</b>	<b>63</b>
CRIMES AGAINST SOCIETY	LAPD	LASD	FYTD
Weapons	0	0	1
Narcotics	0	2	3
Trespassing	0	0	1
<b>SUB-TOTAL</b>	<b>0</b>	<b>2</b>	<b>5</b>
<b>TOTAL</b>	<b>7</b>	<b>14</b>	<b>123</b>

ARRESTS			
AGENCY	LAPD	LASD	FYTD
Felony	0	1	20
Misdemeanor	4	11	51
<b>TOTAL</b>	<b>4</b>	<b>12</b>	<b>71</b>

CITATIONS			
AGENCY	LAPD	LASD	FYTD
Other Citations	15	23	158
Vehicle Code Citations	0	1	97
<b>TOTAL</b>	<b>15</b>	<b>24</b>	<b>255</b>

CALLS FOR SERVICE			
AGENCY	LAPD	LASD	FYTD
Routine	0	57	584
Priority	32	106	863
Emergency	4	8	87
<b>TOTAL</b>	<b>36</b>	<b>171</b>	<b>1,534</b>

DISPATCHED VS. PROACTIVE		
AGENCY	LAPD	LASD
Dispatched	22%	2%
Proactive	78%	98%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>

CRIMES PER STATION				
STATION	CRIMES AGAINST PERSONS	CRIMES AGAINST PROPERTY	CRIMES AGAINST SOCIETY	FYTD
APU/Citrus College	1	3	0	12
Azusa Downtown	0	0	0	1
Irwindale	0	1	0	2
Duarte/City of Hope	0	0	0	5
Monrovia	0	0	0	5
Arcadia	1	1	0	4
Sierra Madre Villa	0	1	0	6
Allen	0	0	0	0
Lake	0	0	0	3
Memorial Park	1	0	1	3
Del Mar	1	0	0	1
Fillmore	0	0	0	3
South Pasadena	0	0	0	0
Highland Park	1	0	0	3
Southwest Museum	0	0	0	5
Heritage Square	0	0	0	1
Lincoln/Cypress	0	0	0	5
Chinatown	0	0	0	1
Union Station	0	0	0	6
Little Tokyo/Arts Dist	0	0	0	2
Pico/Aliso	1	0	0	2
Mariachi Plaza	2	1	0	8
Soto	1	0	0	3
Indiana (both LAPD & LASD)	1	0	0	6
Maravilla	0	0	0	0
East LA Civic Ctr	1	0	0	1
Atlantic	0	1	1	9
<b>Total</b>	<b>11</b>	<b>8</b>	<b>2</b>	<b>97</b>

PERCENTAGE OF TIME SPENT ON THE RAIL SYSTEM	
Gold Line-LAPD	88%
Gold Line-LASD	71%

GRADE CROSSING OPERATIONS			
LOCATION	LAPD	LASD	FYTD
Marmion Way	375	0	1,425
Arcadia Station	0	2	43
Irwindale	0	2	22
Monrovia	0	5	54
City of Pasadena	0	17	257
Magnolia Ave	0	0	0
Duarte Station	0	1	17
City Of Azusa	0	11	62
South Pasadena	0	6	91
City Of East LA	0	0	124
Figueroa St	126	0	373
<b>TOTAL GOAL= 10</b>	<b>501</b>	<b>44</b>	<b>2,468</b>

LEGEND
Los Angeles Police Department
Los Angeles County Sheriff's Department

### MONTHLY UPDATE ON TRANSIT POLICING PERFORMANCE - MARCH 2019

REPORTED CRIME		
CRIMES AGAINST PERSONS	LAPD	FYTD
Homicide	0	0
Rape	0	0
Robbery	1	8
Aggravated Assault	0	11
Aggravated Assault on Operator	0	1
Battery	0	9
Battery Bus Operator	1	2
Sex Offenses	0	0
<b>SUB-TOTAL</b>	<b>2</b>	<b>31</b>
CRIMES AGAINST PROPERTY	LAPD	FYTD
Burglary	0	0
Larceny	4	15
Bike Theft	0	3
Motor Vehicle Theft	0	0
Arson	0	0
Vandalism	1	11
<b>SUB-TOTAL</b>	<b>5</b>	<b>29</b>
CRIMES AGAINST SOCIETY	LAPD	FYTD
Weapons	0	0
Narcotics	0	0
Trespassing	0	0
<b>SUB-TOTAL</b>	<b>0</b>	<b>0</b>
<b>TOTAL</b>	<b>7</b>	<b>60</b>

ARRESTS		
AGENCY	LAPD	FYTD
Felony	0	2
Misdemeanor	3	16
<b>TOTAL</b>	<b>3</b>	<b>18</b>

CITATIONS		
AGENCY	LAPD	FYTD
Other Citations	547	3,064
Vehicle Code Citations	319	2,513
<b>TOTAL</b>	<b>866</b>	<b>5,577</b>

CALLS FOR SERVICE		
AGENCY	LAPD	FYTD
Routine	0	0
Priority	9	9
Emergency	3	3
<b>TOTAL</b>	<b>12</b>	<b>12</b>

DISPATCHED VS. PROACTIVE	
AGENCY	LAPD
Dispatched	14%
Proactive	86%
<b>TOTAL</b>	<b>100%</b>

PERCENTAGE OF TIME SPENT ON THE BUS SYSTEM	
Orange Line- LAPD	90%

LEGEND	
Los Angeles Police Department	

CRIMES PER STATION				
STATION	CRIMES AGAINST PERSONS	CRIMES AGAINST PROPERTY	CRIMES AGAINST SOCIETY	FYTD
North Hollywood	0	0	0	5
Laurel Canyon	0	0	0	0
Valley College	0	0	0	0
Woodman	0	1	0	2
Van Nuys	1	0	0	9
Sepulveda	0	0	0	2
Woodley	0	0	0	1
Balboa	1	2	0	9
Reseda	0	1	0	5
Tampa	0	0	0	0
Pierce College	0	0	0	0
De Soto	0	0	0	1
Canoga	0	1	0	7
Warner Center	0	0	0	0
Sherman Way	0	0	0	1
Roscoe	0	0	0	0
Nordhoff	0	0	0	1
Chatsworth	0	0	0	1
<b>Total</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>44</b>

### MONTHLY UPDATE ON TRANSIT POLICING PERFORMANCE - MARCH 2019

REPORTED CRIME			
CRIMES AGAINST PERSONS	LAPD	LASD	FYTD
Homicide	0	0	0
Rape	0	0	0
Robbery	0	0	3
Aggravated Assault	0	0	1
Aggravated Assault on Operator	0	0	0
Battery	0	0	6
Battery Bus Operator	0	0	0
Sex Offenses	0	0	0
<b>SUB-TOTAL</b>	<b>0</b>	<b>0</b>	<b>10</b>
CRIMES AGAINST PROPERTY	LAPD	LASD	FYTD
Burglary	0	0	0
Larceny	0	0	3
Bike Theft	0	0	2
Motor Vehicle Theft	0	0	0
Arson	0	0	0
Vandalism	0	0	2
<b>SUB-TOTAL</b>	<b>0</b>	<b>0</b>	<b>7</b>
CRIMES AGAINST SOCIETY	LAPD	LASD	FYTD
Weapons	0	0	0
Narcotics	0	0	0
Trespassing	0	0	0
<b>SUB-TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>17</b>

ARRESTS			
AGENCY	LAPD	LASD	FYTD
Felony	0	0	6
Misdemeanor	3	0	27
<b>TOTAL</b>	<b>3</b>	<b>0</b>	<b>33</b>

CITATIONS			
AGENCY	LAPD	LASD	FYTD
Other Citations	523	0	3,113
Vehicle Code Citations	405	1	2,997
<b>TOTAL</b>	<b>928</b>	<b>1</b>	<b>6,110</b>

CALLS FOR SERVICE			
AGENCY	LAPD	LASD	FYTD
Routine	0	1	1
Priority	5	2	18
Emergency	2	0	5
<b>TOTAL</b>	<b>7</b>	<b>3</b>	<b>24</b>

DISPATCHED VS. PROACTIVE		
AGENCY	LAPD	LASD
Dispatched	15%	1%
Proactive	85%	99%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>

CRIMES PER STATION				
STATION	CRIMES AGAINST PERSONS	CRIMES AGAINST PROPERTY	CRIMES AGAINST SOCIETY	FYTD
El Monte	0	0	0	0
Cal State LA	0	0	0	0
LAC/USC Medical Ctr	0	0	0	0
Alameda	0	0	0	0
Downtown	0	0	0	1
37th St/USC	0	0	0	1
Slauson	0	0	0	1
Manchester	0	0	0	1
Harbor Fwy	0	0	0	3
Rosecrans	0	0	0	1
Harbor Gateway Transit Ctr	0	0	0	0
Carson	0	0	0	0
PCH	0	0	0	1
San Pedro/Beacon	0	0	0	1
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>

PERCENTAGE OF TIME SPENT ON THE BUS SYSTEM	
Silver Line- LAPD	92%
Silver Line- LASD	69%

LEGEND	
Los Angeles Police Department	
Los Angeles County Sheriff's Department	

## MONTHLY UPDATE ON TRANSIT POLICING PERFORMANCE - MARCH 2019

REPORTED CRIME			
CRIMES AGAINST PERSONS	LAPD	LASD	FYTD
Homicide	0	0	0
Rape	0	0	0
Robbery	5	2	77
Aggravated Assault	1	2	68
Aggravated Assault on Operator	0	0	10
Battery	23	2	181
Battery Bus Operator	3	4	56
Sex Offenses	0	0	27
<b>SUB-TOTAL</b>	<b>32</b>	<b>10</b>	<b>419</b>
CRIMES AGAINST PROPERTY	LAPD	LASD	FYTD
Burglary	0	0	2
Larceny	21	0	168
Bike Theft	1	0	22
Motor Vehicle Theft	0	1	2
Arson	0	0	0
Vandalism	1	1	30
<b>SUB-TOTAL</b>	<b>23</b>	<b>2</b>	<b>224</b>
CRIMES AGAINST SOCIETY	LAPD	LASD	FYTD
Weapons	0	0	9
Narcotics	0	1	38
Trespassing	0	0	6
<b>SUB-TOTAL</b>	<b>0</b>	<b>1</b>	<b>53</b>
<b>TOTAL</b>	<b>55</b>	<b>13</b>	<b>696</b>

LASD's Crimes per Sector		
Sector		FYTD
Westside	3	15
San Fernando	2	2
San Gabriel Valley	2	11
Gateway Cities	2	18
South Bay	4	23
<b>Total</b>	<b>13</b>	<b>69</b>

LAPD's Crimes per Sector		
Sector		FYTD
<b>Valley Bureau</b>		
Van Nuys	2	7
West Valley	0	1
North Hollywood	1	6
Foothill	2	4
Devonshire	0	1
Mission	1	3
Topanga	0	8
<b>Central Bureau</b>		
Central	7	36
Rampart	6	22
Hollenbeck	1	2
Northeast	1	6
Newton	5	20
<b>West Bureau</b>		
Hollywood	1	6
Wilshire	5	27
West LA	3	15
Pacific	3	N/A
Olympic	7	33
<b>Southwest Bureau</b>		
Southwest	4	81
Harbor	0	3
77th Street	6	70
Southeast	0	11
<b>Total</b>	<b>55</b>	<b>362</b>

ARRESTS			
AGENCY	LAPD	LASD	FYTD
Felony	7	5	64
Misdemeanor	3	46	305
<b>TOTAL</b>	<b>10</b>	<b>51</b>	<b>369</b>

CITATIONS			
AGENCY	LAPD	LASD	FYTD
Other Citations	23	50	351
Vehicle Code Citations	0	34	218
<b>TOTAL</b>	<b>23</b>	<b>84</b>	<b>569</b>

CALLS FOR SERVICE			
AGENCY	LAPD	LASD	FYTD
Routine	2	86	999
Priority	30	150	1,815
Emergency	3	13	201
<b>TOTAL</b>	<b>35</b>	<b>249</b>	<b>3,015</b>

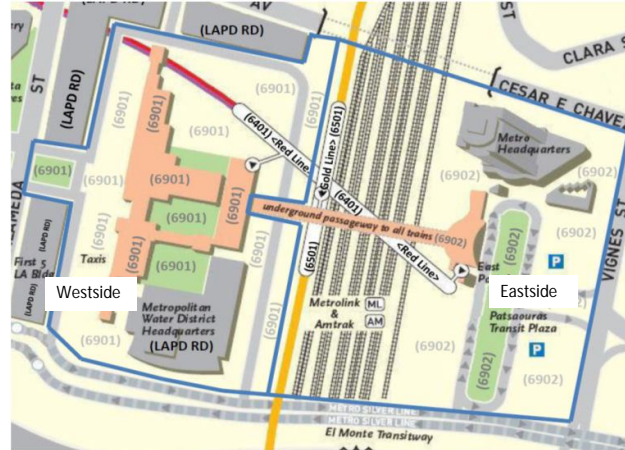
DISPATCHED VS. PROACTIVE		
AGENCY	LAPD	LASD
Dispatched	21%	1%
Proactive	79%	99%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>

PERCENTAGE OF TIME SPENT ON THE BUS SYSTEM	
LAPD BUS	88%
LASD BUS	77%

LEGEND	
Los Angeles Police Department	
Los Angeles County Sheriff's Department	

## MONTHLY UPDATE ON TRANSIT POLICING PERFORMANCE - MARCH 2019

REPORTED CRIME		
CRIMES AGAINST PERSONS	LAPD	FYTD
Homicide	0	0
Rape	0	0
Robbery	0	6
Aggravated Assault	4	17
Aggravated Assault on Operator	0	0
Battery	6	35
Battery Rail Operator	0	0
Sex Offenses	2	8
<b>SUB-TOTAL</b>	<b>12</b>	<b>66</b>
CRIMES AGAINST PROPERTY	LAPD	FYTD
Burglary	1	2
Larceny	4	56
Bike Theft	0	5
Motor Vehicle Theft	0	0
Arson	0	0
Vandalism	2	9
<b>SUB-TOTAL</b>	<b>7</b>	<b>72</b>
CRIMES AGAINST SOCIETY	LAPD	FYTD
Weapons	0	0
Narcotics	0	0
Trespassing	0	9
<b>SUB-TOTAL</b>	<b>0</b>	<b>9</b>
<b>TOTAL</b>	<b>19</b>	<b>147</b>



ARRESTS		
AGENCY	LAPD	FYTD
Felony	8	26
Misdemeanor	16	80
<b>TOTAL</b>	<b>24</b>	<b>106</b>

CITATIONS		
AGENCY	LAPD	FYTD
Other Citations	6	73
Vehicle Code Citations	3	23
<b>TOTAL</b>	<b>9</b>	<b>96</b>

CALLS FOR SERVICE		
AGENCY	LAPD	FYTD
Routine	3	3
Priority	73	73
Emergency	6	6
<b>TOTAL</b>	<b>82</b>	<b>82</b>

DISPATCHED VS. PROACTIVE	
AGENCY	LAPD
Dispatched	26%
Proactive	74%
<b>TOTAL</b>	<b>100%</b>

PERCENTAGE OF TIME SPENT AT UNION STATION	
LOCATION	LAPD
Union Station	85%

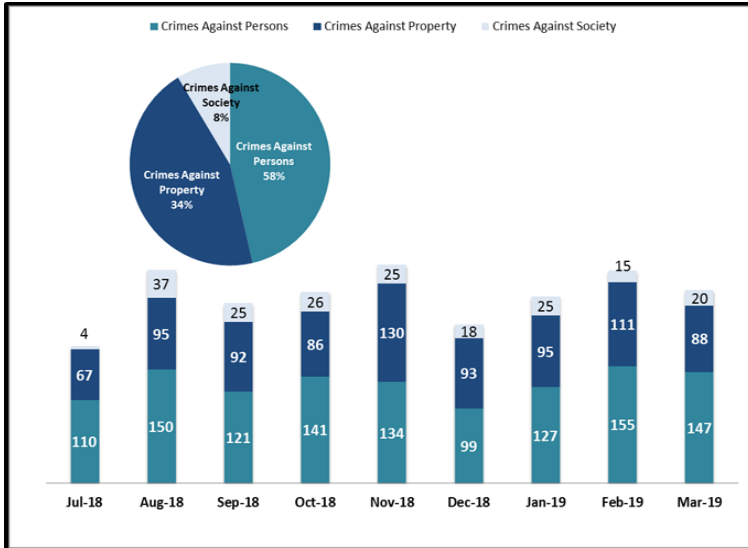
LEGEND	
Los Angeles Police Department	

# KEY PERFORMANCE INDICATORS

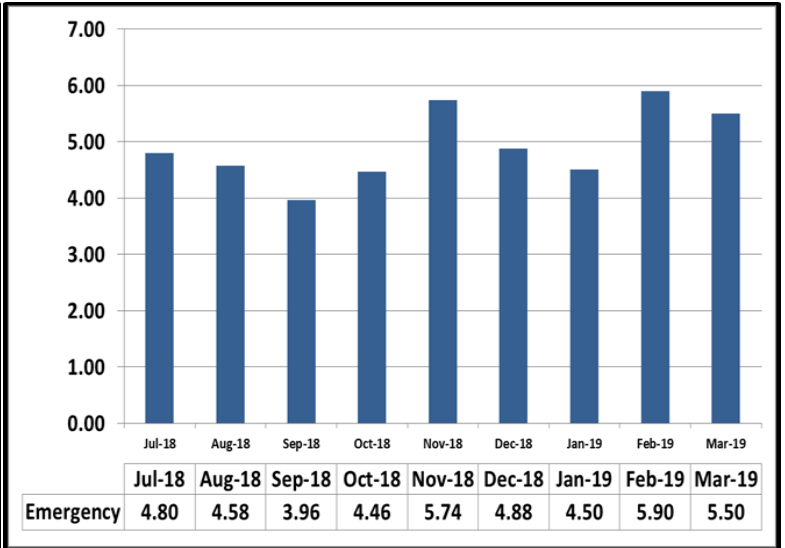
MARCH 2019

Attachment C

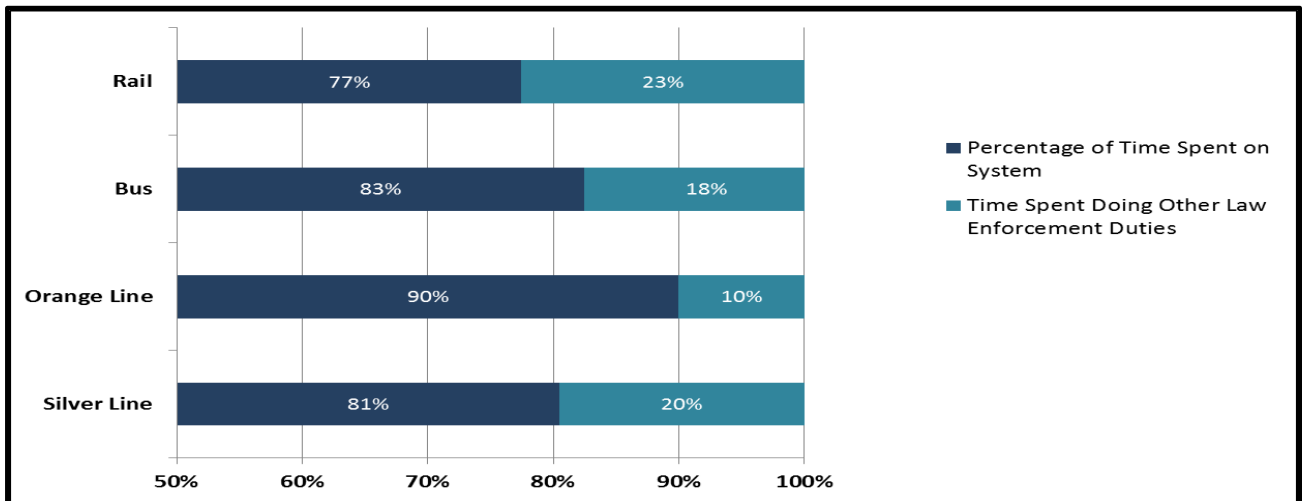
## Crimes Against Persons, Property, and Society



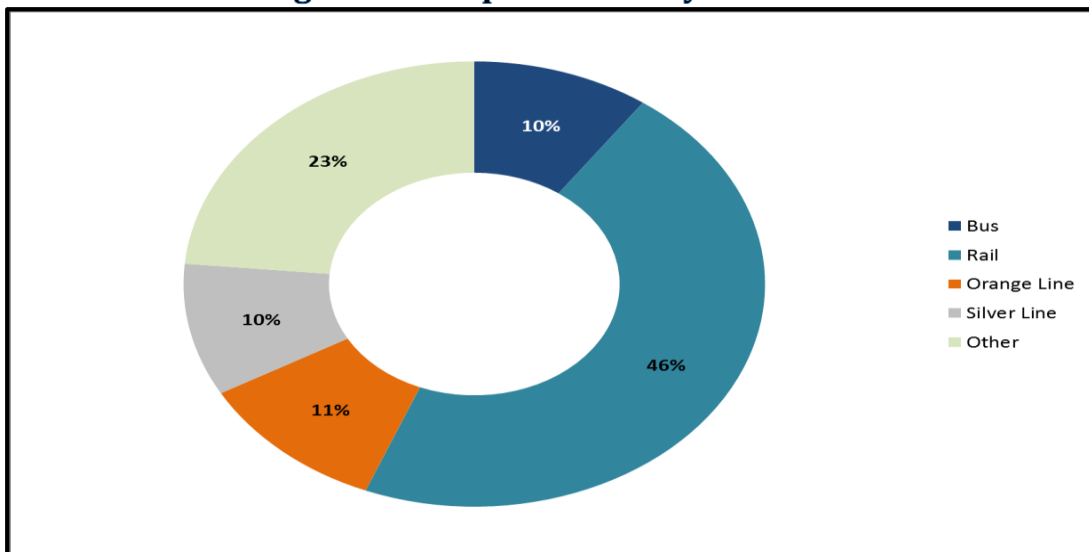
## Average Emergency Response Times



## Percentage of Time Spent on the System



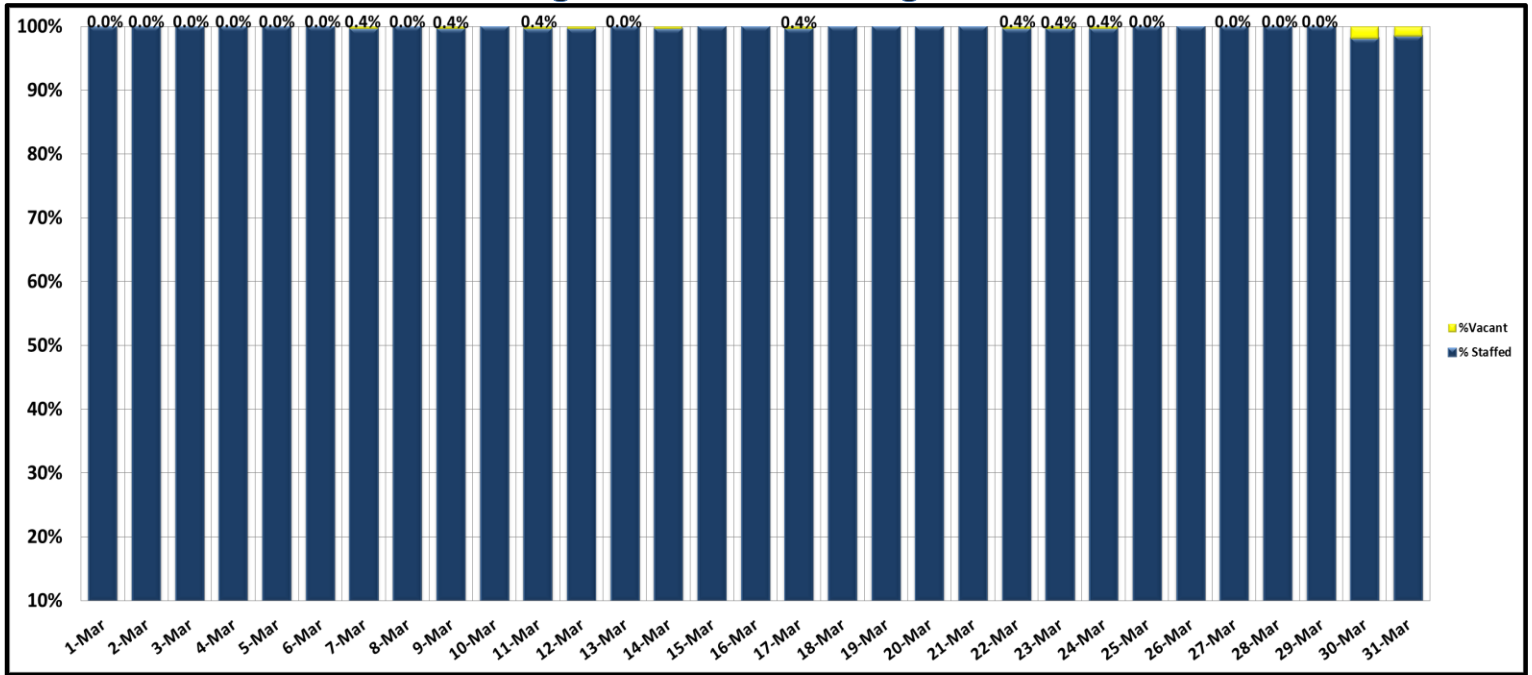
## Percentage of Time Spent on the System as a Whole



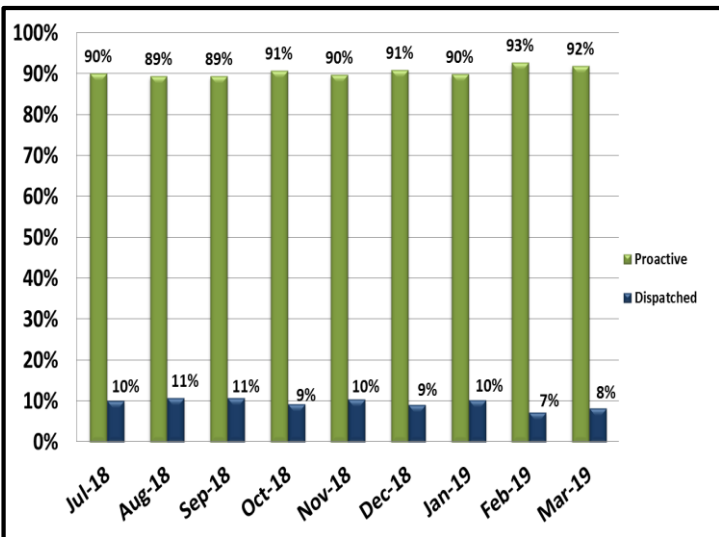
# KEY PERFORMANCE INDICATORS

MARCH 2019

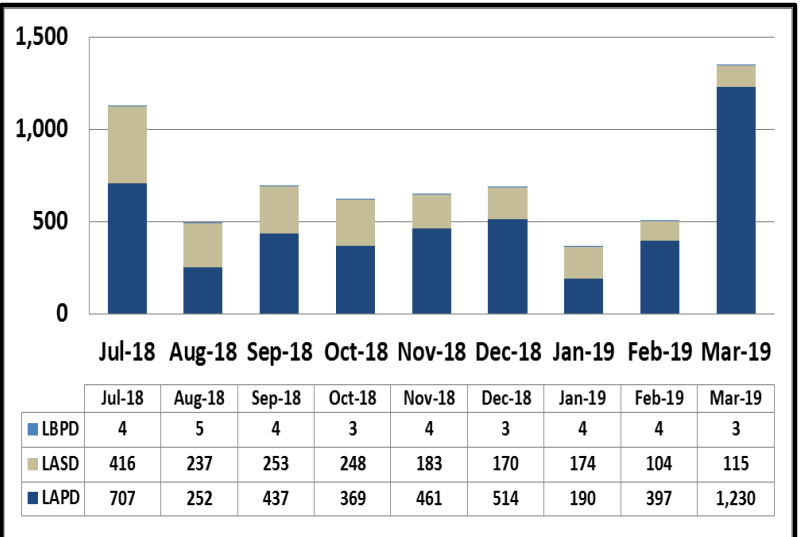
### Ratio of Staffing Levels vs Vacant Assignments



### Ratio of Proactive vs Dispatched Activity



### Grade Crossing Operations



Grade Crossing Operation Locations March:

1. Blue Line Stations (315)
2. Expo Line Stations (488)
3. Gold Line Stations (545)

# Transit Police

## Monthly Crime Report



Attachment D

	2018	2019
	March	March
<b>CRIMES AGAINST PERSONS</b>		
Homicide	0	0
Rape	2	1
Robbery	25	19
Aggravated Assault	17	23
Aggravated Assault on Operator	2	0
Battery	48	86
Battery Rail Operator	7	9
Sex Offenses	16	9
<b>SUB-TOTAL</b>	<b>117</b>	<b>147</b>
<b>CRIMES AGAINST PROPERTY</b>		
Burglary	1	1
Larceny	59	67
Bike Theft	11	4
Motor Vehicle Theft	1	5
Arson	0	0
Other	0	0
Vandalism	15	11
<b>SUB-TOTAL</b>	<b>87</b>	<b>88</b>
<b>CRIMES AGAINST SOCIETY</b>		
Weapons	5	2
Narcotics	19	9
Trespassing	4	9
<b>SUB-TOTAL</b>	<b>28</b>	<b>20</b>
<b>TOTAL</b>	<b>232</b>	<b>255</b>
<b>ENFORCEMENT EFFORTS</b>		
Arrests	350	290
Citations	1,856	2,433
Fare Checks	347,481	67,363
Calls for Service	1,382	1,340



**March 2019  
Transit Policing  
Performance Summary  
2019-0229**



**May 16, 2019  
Operations, Safety and Customer Experience Committee**

# March 2019

## Systemwide Activity

	2018	2019
	March	March
<b>CRIMES AGAINST PERSONS</b>		
Homicide	0	0
Rape	2	1
Robbery	25	19
Aggravated Assault	17	23
Aggravated Assault on Operator	2	0
Battery	48	86
Battery Rail Operator	7	9
Sex Offenses	16	9
<b>SUB-TOTAL</b>	<b>117</b>	<b>147</b>
<b>CRIMES AGAINST PROPERTY</b>		
Burglary	1	1
Larceny	59	67
Bike Theft	11	4
Motor Vehicle Theft	1	5
Arson	0	0
Other	0	0
Vandalism	15	11
<b>SUB-TOTAL</b>	<b>87</b>	<b>88</b>
<b>CRIMES AGAINST SOCIETY</b>		
Weapons	5	2
Narcotics	19	9
Trespassing	4	9
<b>SUB-TOTAL</b>	<b>28</b>	<b>20</b>
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<b>ENFORCEMENT EFFORTS</b>		
Arrests	350	290
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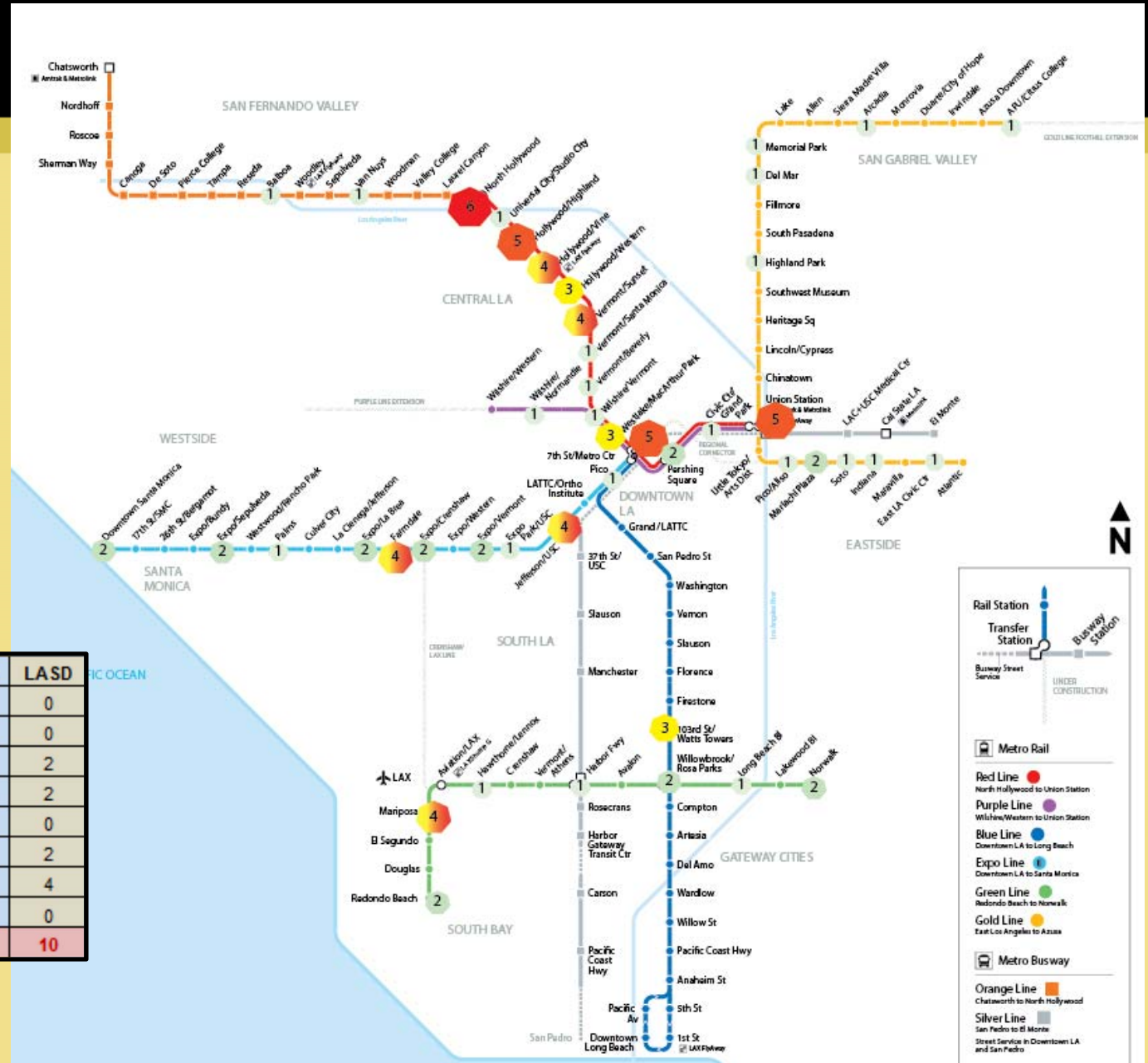
**Metro**

# March 2019

## Crimes Against Persons-Rail

### Bus Incidents

CRIMES AGAINST PERSONS	LAPD	LASD
Homicide	0	0
Rape	0	0
Robbery	5	2
Aggravated Assault	1	2
Aggravated Assault on Operator	0	0
Battery	23	2
Battery Bus Operator	3	4
Sex Offenses	0	0
<b>SUB-TOTAL</b>	<b>32</b>	<b>10</b>

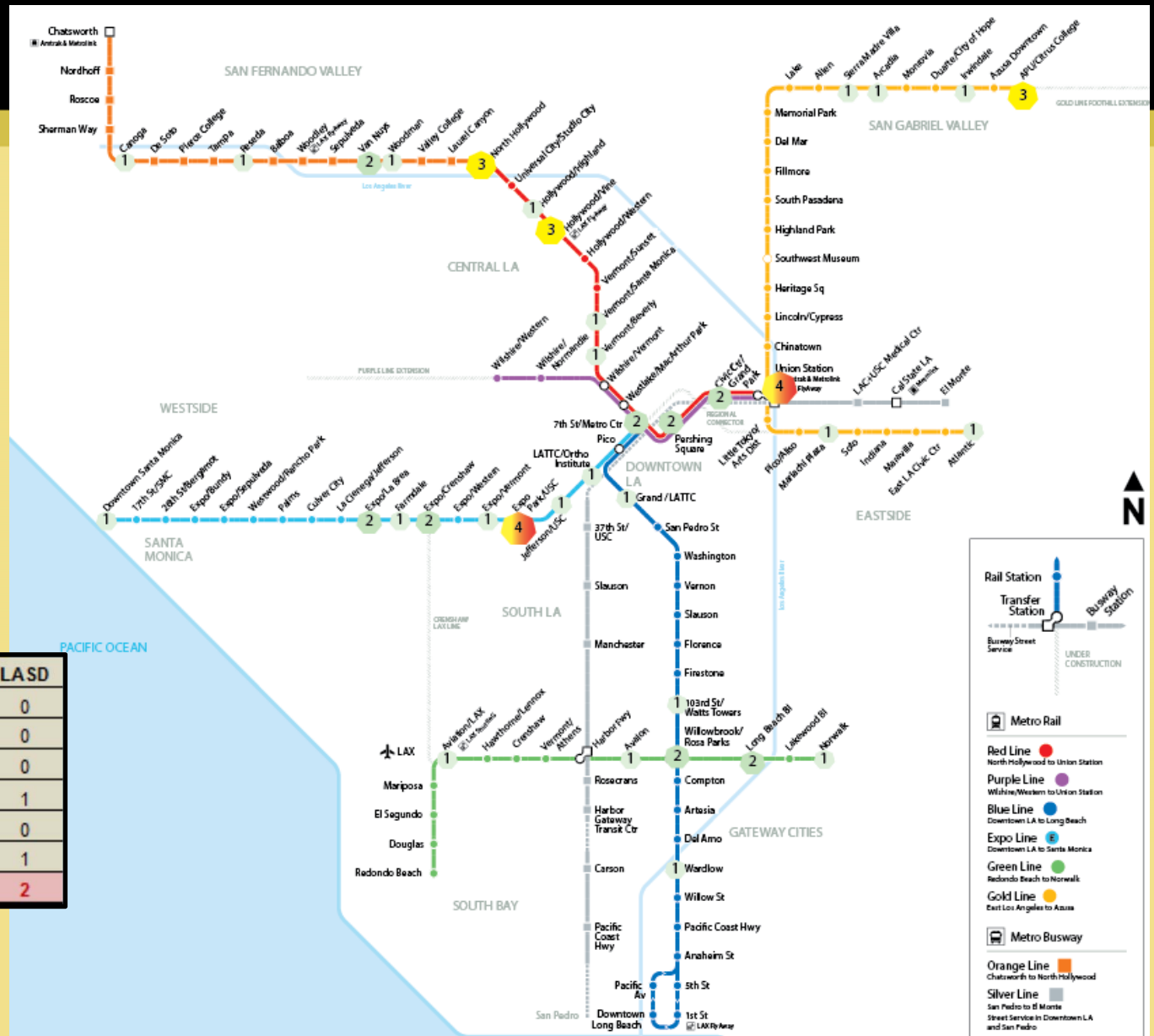


# March 2019

## Crimes Against Property-Rail

### Bus Incidents

CRIMES AGAINST PROPERTY	LAPD	LASD
Burglary	0	0
Larceny	21	0
Bike Theft	1	0
Motor Vehicle Theft	0	1
Arson	0	0
Vandalism	1	1
<b>SUB-TOTAL</b>	<b>23</b>	<b>2</b>



# March 2019

## Crimes Against Society-Rail

### Bus Incidents

CRIMES AGAINST SOCIETY	LAPD	LA SD
Weapons	0	0
Narcotics	0	1
Trespassing	0	0
<b>SUB-TOTAL</b>	<b>0</b>	<b>1</b>



# Current Challenges

There was an increase in transient related crimes: 59 suspects in 2019 vs. 25 in 2018, an increase of 136%. The number of transient related victims was 18 in 2019 vs 20 in 2018.

# Response

- Focused homeless outreach
- Increased police staffing on trains
- Remove non-paying riders from the transit system



## Board Report

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**File #:** 2019-0232, **File Type:** Informational Report

**Agenda Number:** 24.

---

### OPERATIONS, SAFETY, AND CUSTOMER EXPERIENCE COMMITTEE MAY 16, 2019

**SUBJECT: OFFICE OF THE INSPECTOR GENERAL REPORT ON BUS OPERATOR SAFETY  
BARRIER USE AND EFFECTIVENESS STUDY**

**ACTION: RECEIVE AND FILE**

#### **RECOMMENDATION**

RECEIVE AND FILE Report on Bus Operator Safety Barrier Use and Effectiveness Study.

#### **ISSUE**

To improve safety, the Office of the Inspector General (OIG) conducted a study to evaluate the use and effectiveness of barriers to prevent assaults on operators.

#### **BACKGROUND**

Assaults on bus operators is an ongoing problem throughout the public transportation industry. Many agencies have implemented programs that include the use of bus operator safety barriers to reduce and/or prevent such assaults. Metro began installing barriers in 2015.

The OIG understands that an important goal for Metro is to protect the bus operators from assault. We partnered with an expert on transit safety to perform a study of bus operator safety barrier use and effectiveness. The purpose of this study was to:

- Evaluate the effectiveness of safety barriers in reducing assaults on bus operators.
- Determine the use of barriers by operators, and reasons why barriers are not used by some operators.
- Determine industry best practices.
- Determine operator experience and perception of enhanced security.
- Survey operators, supervisors and managers on the effectiveness of barriers.



## **DISCUSSION**

Overall, the report found that the bus operator safety barrier systems were generally effective in reducing the assault rate, but further actions are needed.

### **Key Findings and Recommendations**

- **Finding:** Safety barriers and onboard camera systems appear to be effective deterrents to assaults on bus operators.  
**Recommendation:** Metro should continue to install bus operator safety barriers and camera monitor systems throughout its fleet, and monitor the effectiveness of both systems in preventing assaults on bus operators.
- **Finding:** Data pertaining to the bus operator use of safety barriers during assaults is inconsistently collected by stakeholders.  
**Recommendation:** Metro should standardize the collection of data to identify the types of assaults and whether the bus was equipped with a safety barrier and if so, whether the barrier was in use.
- **Finding:** Assaults occur more frequently on certain lines and at certain times.  
**Recommendation:** Metro should use assault trend analysis results to review current policing and fare enforcement strategies and determine whether security personnel are being appropriately deployed toward routes and times of day when most assaults occur.
- **Finding:** Metro's bus operators do not consistently use the safety barriers. OIG field observations showed that only 18 percent of the operators used both the top and bottom portions of the barriers. A survey of bus operators showed that 59 percent stated that mandatory use of the barriers would not reduce assaults, but 72 percent felt that the barriers were very effective or somewhat effective in reducing assaults. Approximately 50 percent of the bus Supervisors and Managers surveyed believed mandatory use of the barriers would be beneficial in preventing assaults on operators. In addition, five of six transit agencies surveyed require mandatory use of safety barriers, while only one agency allowed optional use.  
**Recommendation:** Metro should make use of the barriers mandatory until Metro can determine if barrier usage contributes to or causes accidents or increases accident frequency. Metro should also collect data to substantiate and study the issues identified as to why operators do not use barriers.
- **Finding:** Although most of Metro's bus operators, supervisors, and managers believe the safety barriers are effective in preventing assaults, nearly half believe other additional protective measures are needed.  
**Recommendation:** Metro should further study why bus operators feel safety barriers do not make them feel more secure, evaluate the current design of safety barriers to determine if operators' concerns, such as glare and right site visibility, can be addressed, and establish a committee to investigate these issues and determine appropriate mitigations.

- **Finding:** Metro's training programs pertaining to the use of safety barriers and de-escalation training could be improved.  
**Recommendation:** Metro should review safety barrier and de-escalation training to evaluate scope, frequency, content, method of delivery, consistency of delivery, and employee engagement and understanding.
- **Finding:** Metro's experiences with assaults on its bus operators and the actions it is taking to prevent these types of incidents is consistent with other transit properties.  
**Recommendation:** Metro should continue to follow its current strategies and implement current programs to prevent assaults on bus operators, and consider using best practices to identify in more detail where the greatest risks reside and employ tactics such as targeted fare enforcement and policing patrols to address problem areas.

### **FINANCIAL IMPACT**

Adoption of the recommendations in this report does not increase the financial impact on the agency since the barriers have been installed or are in the process of being installed. Reducing assaults on operators could decrease any medical costs, workers' compensation, and employee time off due to injury.

### **IMPLEMENTATION OF STRATEGIC PLAN GOALS**

The recommendations in this report support Strategic Plan Goal 2.1 (improving security), Goal 5.6 (fostering and maintaining a strong safety culture), and Goal 2 (delivering outstanding trip experiences). The bus operator safety barriers are an essential tool to protect bus operators from assaults, which is a crime. Preventing assaults would protect our employees, allow the buses to operate without hindrance, and prevent customer delay.

### **NEXT STEPS**

Metro management should:


- Continue to implement the recommendations in the report to improve operator safety.
- Report the results periodically to the Board on the effectiveness of operator safety matters.

### **ATTACHMENTS**

Attachment A - OIG Report on Bus Operator Safety Barrier Use and Effectiveness Study  
Attachment B - Management Response to Study

Prepared by: John Metcalf, Senior Auditor, (213) 244-7321  
Yvonne Zheng, Senior Manager, Audit (213) 244-7301

Reviewed by: Karen Gorman, Inspector General, (213) 922-2975



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Karen Gorman  
Inspector General

**Los Angeles County  
Metropolitan Transportation Authority  
Office of the Inspector General**

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**Bus Operator Safety Barrier  
Use and Effectiveness Study**

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Report No. 19-AUD-08

April 22, 2019





**Metro**

Los Angeles County  
Metropolitan Transportation Authority

Office of the Inspector General  
818 West 7<sup>th</sup> Street, Suite 500  
Los Angeles, CA 90017

213.244.7300 Tel  
213.244.7318 Fax

April 22, 2019

Board of Directors

RE: Bus Operator Safety Barrier Use and Effectiveness Study (Report No. 19-AUD-08)

Dear Metro Board Members:

The Office of the Inspector General conducted a study on the use and effectiveness of bus operator safety barriers in partnership with ADS System Safety Consulting, LLC, an expert on transit safety.

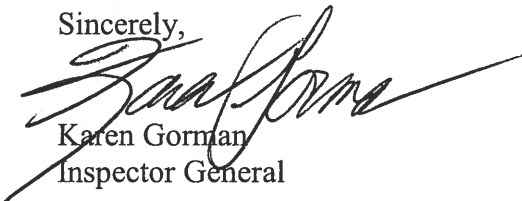
Assaults on bus operators is an ongoing problem throughout the public transportation industry. Many agencies have implemented programs that include the use of bus operator safety barriers to reduce and/or prevent such assaults. Metro began installing barriers in 2015.

The purpose of this study was to evaluate the use and effectiveness of safety barriers, determine industry best practices, evaluate how employees and managers perceive the barriers, determine whether barriers have reduced assaults on bus operators, and obtain the opinions of bus operators, supervisors, and managers regarding the safety barriers. The study found that the bus operator safety barrier systems were generally effective in reducing the assault rate, but further actions are needed such as.

- Continue to install barriers and onboard camera systems.
- Standardize assault reporting to include whether the barriers was in use.
- Use assault trend analysis to review policing and security strategies and deployment.
- Study issues identified by operators as to why they do not use bus barriers, and consider options to address concerns.
- Make use of barriers mandatory.
- Review safety barrier and de-escalation training for any improvement.
- Continue strengthening preventive measures to combat operator assaults, including industry best practices.

We appreciate the assistance provided by Metro Operations staff during this study. I am available to answer any questions concerning this report.

Sincerely,



Karen Gorman  
Inspector General

cc: Phillip Washington  
James Gallagher  
Vijay Khawani  
Board Deputies



**Metro<sup>®</sup>**

**Los Angeles County Metropolitan Transportation Authority  
(LA Metro)**

**Office of the Inspector General**

**BUS OPERATOR SAFETY  
BARRIER USE AND  
EFFECTIVENESS STUDY**

**Submitted by  
ADS System Safety Consulting, LLC**

**April 5, 2019**

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## Executive Summary

Assaults on bus operators is an ongoing problem throughout the public transportation industry. In response, many agencies throughout the United States, Canada, and Europe have implemented programs that include the use of bus operator safety barriers to reduce and/or prevent such assaults.

In 2015, the Los Angeles County Metropolitan Transportation Authority (Metro) began installing bus operator safety barriers throughout its bus fleet. This study, undertaken by LA Metro's Office of the Inspector General (OIG), has been conducted to evaluate the effectiveness of these barrier systems in preventing assaults on Metro's bus operators, evaluate how employees perceive the safety barriers and their effectiveness, and identify industry best practices. The study included:

1. Collecting and analyzing historical data provided to identify trends.
2. Conducting Metro Bus Operator surveys created specifically for this study.
3. Conducting Metro Supervisor and Manager surveys created specifically for this study.
4. Conducting industry surveys of other public transportation agencies that use safety barriers on their buses.
5. Reviewing industry specific documents developed by the Transportation Cooperative Research Program (TCRP) relevant to the study.
6. OIG field observations of operator use of safety barriers.

The data collected from each of these activities was analyzed to identify trends within Metro and similar agencies. This included evaluating the effectiveness of the bus operator safety barrier systems in reducing assaults on Metro's bus operators; identifying industry best practices; identifying bus operator concerns and issues regarding the barriers; gathering feedback from bus Supervisors and Managers; and evaluating training programs associated with the safety barriers and the prevention of assaults on Metro's bus operators. Findings include:

1. Safety barriers and onboard camera systems appear to be effective deterrents to assaults on bus operators.
2. Data pertaining to the bus operator safety barriers is inconsistently collected by stakeholders.
3. Assaults occur more frequently on bus routes 4, 204, 720, 207, and 40 than others, during the afternoon hours of 1:00 pm to 5:00 pm, and most predominantly as a result of fare disputes.
4. Metro's bus operators do not consistently use the safety barriers.



5. Although most of Metro's bus operators, Supervisors and Managers believe the safety barriers are effective in preventing assaults, nearly half believe other additional protective measures are needed.
6. Metro's training programs pertaining to the use of the safety barriers and de-escalation of disputes training could be improved or increased.
7. Metro's experiences with assaults on its bus operators and the actions it is taking to prevent these types of incidents is consistent with other transit properties.

Seven recommendations have been made in response to these findings and are contained in the body of the report and summarized in Appendix H.

## 1.0 Introduction

Assaults on bus operators is a continuing issue for public transit providers throughout the United States, Canada and abroad. The underlying causes of these assaults are complex with no “silver bullet” available to completely prevent their occurrence. Factors such as socioeconomic status, mental health, service demands, and other environmental conditions can all contribute to their occurrence. Alone, these incidents undermine the ability of transit agencies to ensure safe and reliable transportation service. Collectively, however, they set the stage for what may be considered at times a volatile operating environment. As such, many of the nation’s transportation officials are perplexed as to what can be done to better protect their employees and passengers from incidents.

The seriousness of this issue has been recognized by the nation’s lawmakers, Congressman Ro Khanna of California’s 17<sup>th</sup> district, Congresswoman Grace Napolitano of California’s 32<sup>nd</sup> district, and Congressman John Katko of New York’s 24<sup>th</sup> district, who in 2018 co-sponsored the *Bus Operator and Pedestrian Protection Act*. This proposed Act required the installation of protective shields (i.e., bus operator safety barriers), training to de-escalate violent situations, and would require transit agencies to track and report the number of assaults and violent acts against their bus operators to the U.S. Department of Transportation.

The U.S. Department of Transportation has also recognized the severity of this issue, tasking the Transportation Research Board (TRB), which is sponsored by the Federal Transit Administration (FTA), to complete two Transit Cooperative Research Program (TCRP) studies of the issue. These are *TCRP Research Report 193: Tools and Strategies for Eliminating Assaults Against Transit Operators*; and *TCRP Synthesis 93: Practices to Protect Bus Operators from Passenger Assault*.

In response to this issue, in 2015 the Los Angeles County Metropolitan Transportation Authority (LA Metro) began a pilot program to evaluate and test the use of bus operator safety barriers on its bus fleet. The pilot program also included a survey, completed between April 2015 and August 2015, to examine how Metro’s bus operators felt about the use of the safety barriers. The initial surveys completed during this pilot program indicated that just over half of the bus operators surveyed felt that they would use the barriers; the barriers made their jobs easier; they felt somewhat safe with the barriers in place; and they felt somewhat safe with the new onboard video monitoring system that was being tested at the same time as the barriers. Metro began fleet-wide installation of the bus operator safety barriers in 2015 following the completion of the pilot program. LA Metro operates about 2,300 buses and employs about 3,800 bus operators who are assigned to 11 divisions located throughout the County of Los Angeles.

After three years of implementation and use, the LA Metro Office of the Inspector General (OIG) began a *Bus Operator Safety Barrier Use and Effectiveness Study* to determine whether the use of the safety barriers is effective in enhancing safety and providing operators with an enhanced perception of security. The study began in December 2018, at which time safety barriers had been installed in approximately half of Metro’s bus fleet. In addition, all new bus procurements are required to be equipped with the bus operator safety barrier systems.

This report presents the methodology used to complete the study, data analysis results, and key findings and recommendations. Because of the large amount of data collected and analyzed for the study, Appendices A through D provide additional analysis results, including charts and graphs. These appendices include:

- **Appendix A:** Historical Data Analysis Charts and Graphs
- **Appendix B:** Bus Operator Survey Analysis Charts and Graphs
- **Appendix C:** Bus Supervisor / Manager Survey Analysis Charts and Graphs
- **Appendix D:** Industry Survey Analysis Charts and Graphs

## 1.1 Purpose and Objectives

The purpose of the *Bus Operator Safety Barrier Use and Effectiveness Study* was to determine whether the use of the safety barriers is effective in enhancing safety and providing bus operators with an enhanced perception of security. Objectives of the study included:

1. Evaluating the effectiveness of the bus operator safety barrier systems in reducing assaults on operators;
2. Determining industry best practices concerning the implementation and use of bus operator safety barriers;
3. Determining bus operator experiences and perceptions of enhanced security and the effectiveness of the Bus Operator safety barriers, including reasons operators were not using the barriers; and
4. Surveying Supervisors and Managers to obtain their views on the implementation and effectiveness of the Bus Operator safety barriers.

## 1.2 Description of Bus Operator Safety Barrier System

Metro's current bus operator safety barriers consist of two parts. An upper barrier, shown in **Figure 1.2.1**, designed to protect the bus operator's upper body, and a lower barrier, shown in **Figure 1.2.2**, designed to protect the bus operator's lower body. Each portion of the barrier can be used independently or together, as shown in **Figure 1.2.3**, at the discretion of the bus operator. The safety barriers are intended to protect the bus operators while still allowing access to the fare box and communication with passengers. **At this time, use of the safety barriers is voluntary as Metro does not currently have a policy regarding their use.**

**Figure 1.2.1: Top Barrier Engaged**



**Figure 1.2.2: Bottom Barrier Engaged**



**Figure 1.2.3: Driver View Through Barrier**



**Figure 1.2.4: Both Barriers Engaged**



**Note:** For the barrier systems installed by Metro, the lower portion of the barrier must be closed in the “used position” because it only opens 90 degrees, and thus would block the aisle for passengers.

## 2.0 Study Methodology

The *Bus Operator Safety Barrier Use and Effectiveness Study* was completed using a comprehensive methodology that included:

1. Collecting and analyzing historical data provided to identify trends. Data analyzed included:
  - Assault data recorded by both the Los Angeles County Sheriff's Department and Los Angeles Police Department;
  - Metro assault data;
  - Metro data on the installation of the safety barriers;
  - All 11 Metro Bus Divisions and bus route data;
  - OIG field observation data regarding safety barrier use; and
  - Metro and Los Angeles Sheriff and Police Department assault investigations data.
2. Conducting Metro Bus Operator surveys created specifically for the study.
3. Conducting Metro Supervisor and Manager surveys created specifically for the study.
4. Conducting industry surveys of other public transportation agencies that use safety barriers on their buses.
5. Reviewing industry specific documents developed by the Transportation Cooperative Research Program (TCRP) relevant to the study, including:
  - Report 193: Tools and Strategies for Eliminating Assaults Against Transit Operators.
  - Synthesis 93: Practices to Protect Bus Operators from Passenger Assault.
6. Analyzing the results of the OIG's field observations of bus operator use of safety barriers.

Each of these data sources provided both data to interpret, as well as personal perspectives on the effectiveness of the safety barriers from different points of view within the transit industry. The data collected from each of these sources, excluding the TCRP documents, was analyzed to determine if there were specific correlations between the use of the barriers, various assault characteristics, and personal characteristics of the bus operators.

Trend analyses were also performed to identify trends across various quantitative and qualitative categories and measures such as age, gender, bus route, bus division, years of experience, and usage of the safety barriers. Other factors analyzed included bus operator perceptions of safety and the effectiveness of the safety barriers, effectiveness of training programs, and issues involving the use of the barriers. The analysis of these quantitative and qualitative factors provided results that have been used to identify findings and recommendations, and to draw conclusions about the use and effectiveness of the bus operator safety barriers.



### 3.0 Analysis of Historical Incident Data

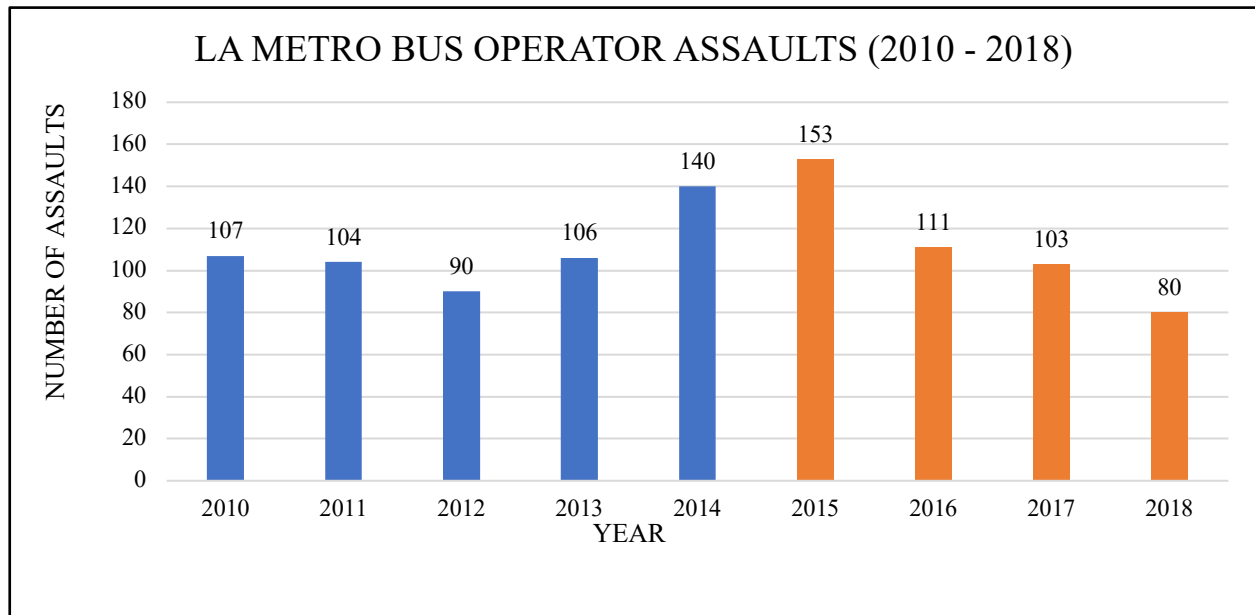
Historical data involving assaults on Metro bus operators between the years 2010 and 2018 was collected and analyzed to identify past incident trends. The analysis of assault data during this time period was completed to evaluate the frequency of assaults before (i.e., between 2010 and 2015) and after (i.e., 2015 to 2018) bus operator safety barriers systems began to be installed on Metro's bus fleet. The graphs below illustrate some of the more significant trends identified during the analysis.

**Figure 3.0.1** illustrates the trend of assaults spanning the last nine years (2010 to 2018). There was an increase in assault frequency from 107 to 153 beginning in 2010 through 2015. When the safety barriers began to be implemented, assault frequency then decreased between 2016 through 2018 from 111 to 80. Because the safety barriers began to be installed in 2015, it may be surmised that the safety barriers have been effective in reducing passenger assaults on bus operators. However, this conclusion is *not* entirely clear, as on-board camera systems (which also serve as a deterrent to passenger assaults on operators) to monitor and record passenger behavior on Metro's bus fleet also began to be installed at this time. In addition, in 2015-2016, the Metro OIG issued a report recommending law enforcement deployment modifications. Changes in the law enforcement and security department also occurred. These factors may have also contributed to reducing the frequency of assaults on Metro's bus operators.

In addition, policing and incident investigation of Metro's bus operations was partially transitioned from the Los Angeles County Sheriff's Department to the Los Angeles Police Department during this period of time. As a result, the data collected from each Department was inconsistent with regard to barrier use and assault type. Inherent differences also exist between the policing methods used by each Department, including where and how resources are deployed to police Metro's bus operations.

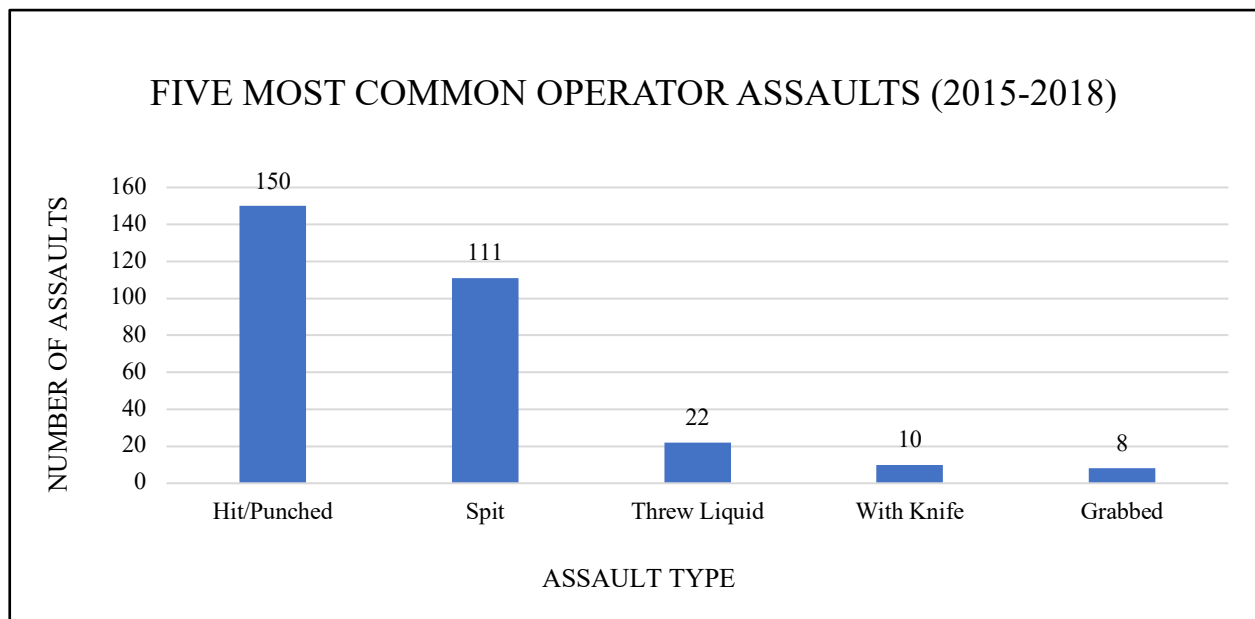
Therefore, the decrease from 153 to 80 operator assaults between 2015 and 2018 cannot be directly attributed solely to the installation of the bus operator safety barrier systems and cannot be accurately determined. Rather, the decrease in assaults between 2015 and 2018 may be the result of barrier installation and use, the presence of onboard camera systems, increased police presence, training, or a combination thereof. Whatever the contribution of operator safety barriers may be, the combination of factors is working well.

**Figure 3.0.1**



**Figure 3.0.2** depicts the number and top five types of assaults that took place from 2015-2018. Two types of assaults, (1) Bus Operators Being Hit or Punched and (2) Bus Operators Being Spat On make up the majority of the assaults. This trend is consistent with what other transit properties experience.

**Figure 3.0.2**



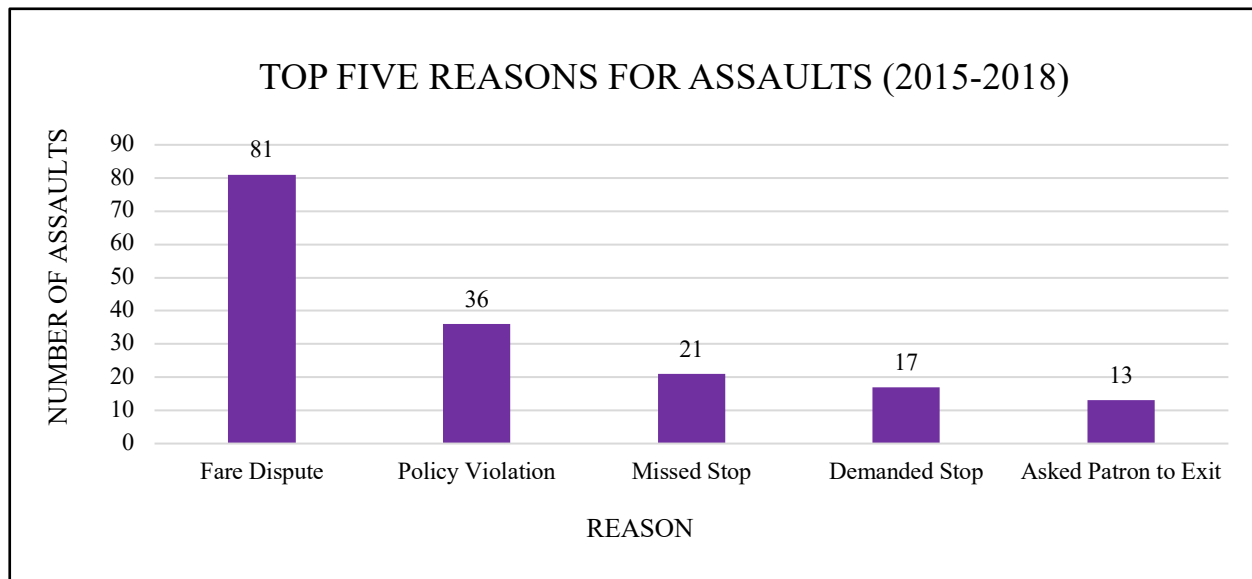


**Figure 3.0.3** depicts the top five reasons cited as topics related to assaults, with fare disputes being most prevalent. Typically fare disputes are exchanges between the bus operator and customer regarding non-payment of fare, not having the correct fare, issues about transfers, and/or communication techniques used during these exchanges (i.e., hostile or confrontational communication).

Contributing factors to fare disputes must be investigated thoroughly to fully understand the dynamics of the situation that took place, and how it escalated to the point where an assault occurred. How customers present themselves to the bus operator and how the bus operator participates in the interaction needs to be examined to determine how the actions of both parties escalated the situation. Both factors determine how the situation plays out, and whether the result is positive or negative. De-escalation training is a common mitigation used across the transit industry to combat these types of assaults.

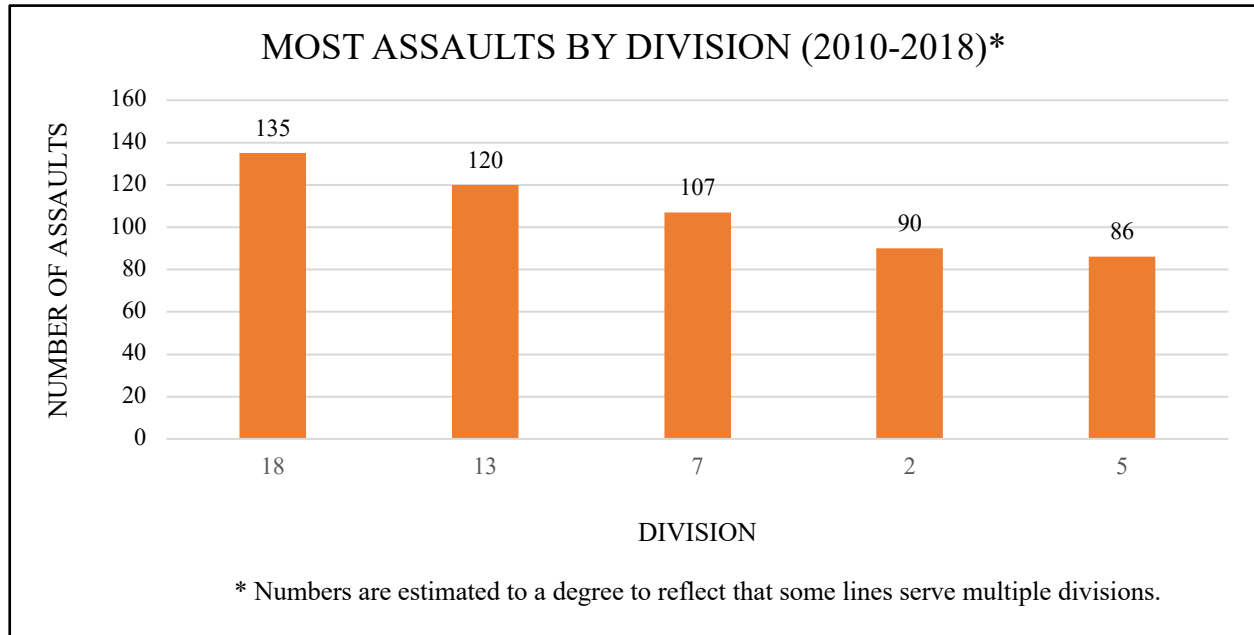
The analysis determined “Policy Violations” as being the second most frequent reason for assaults. Issues that were categorized as policy violations, or violations of the “Customer Code of Conduct,” include bus operators addressing a customer for playing music too loudly on the bus, bus operators addressing passengers for disrupting other passengers or inhibiting the safe operation of the bus, or passengers refusing to comply with requests from the bus operator to behave according to the Customer Code of Conduct.

**Figure 3.0.3**



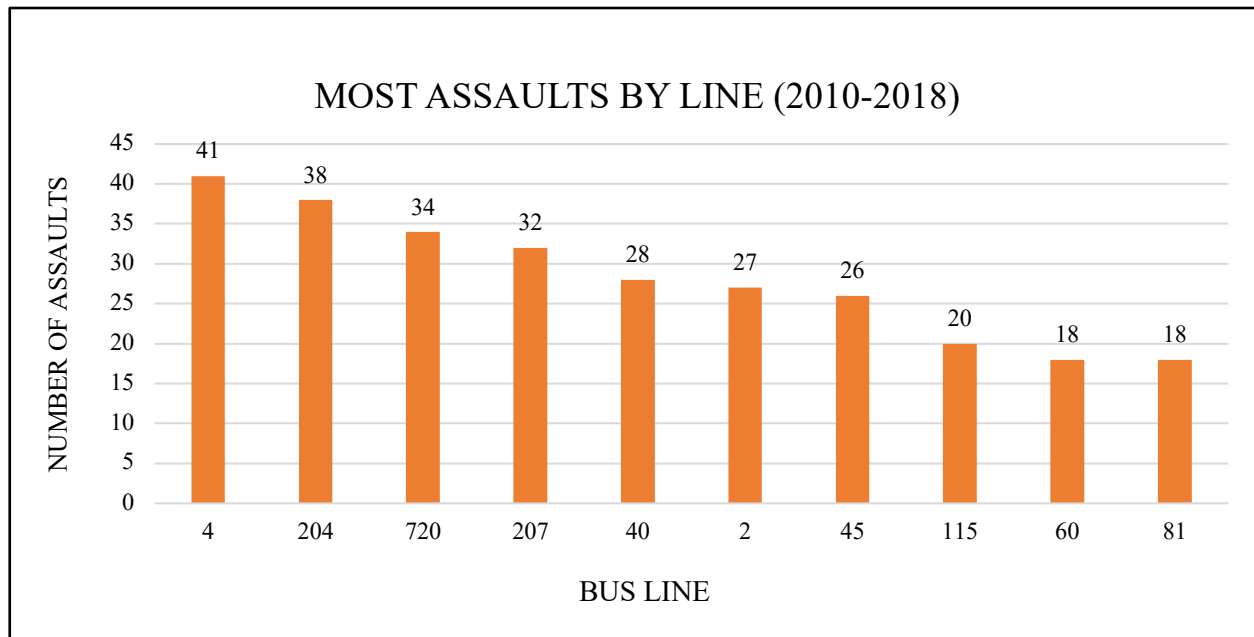
For all 11 divisions, there were 994 operator assaults between 2010 and 2018 (see Figure 3.0.1). **Figure 3.0.4** provides a breakdown of the divisions that had the highest number of assaults. The top five divisions (Divisions 18, 13, 7, 2 and 5) had a total of 538 from 2010 through 2018. Identification of the divisions that experience the highest number of assaults is important in order to develop policing strategies such as targeted policing and fare enforcement missions.

**Figure 3.0.4**



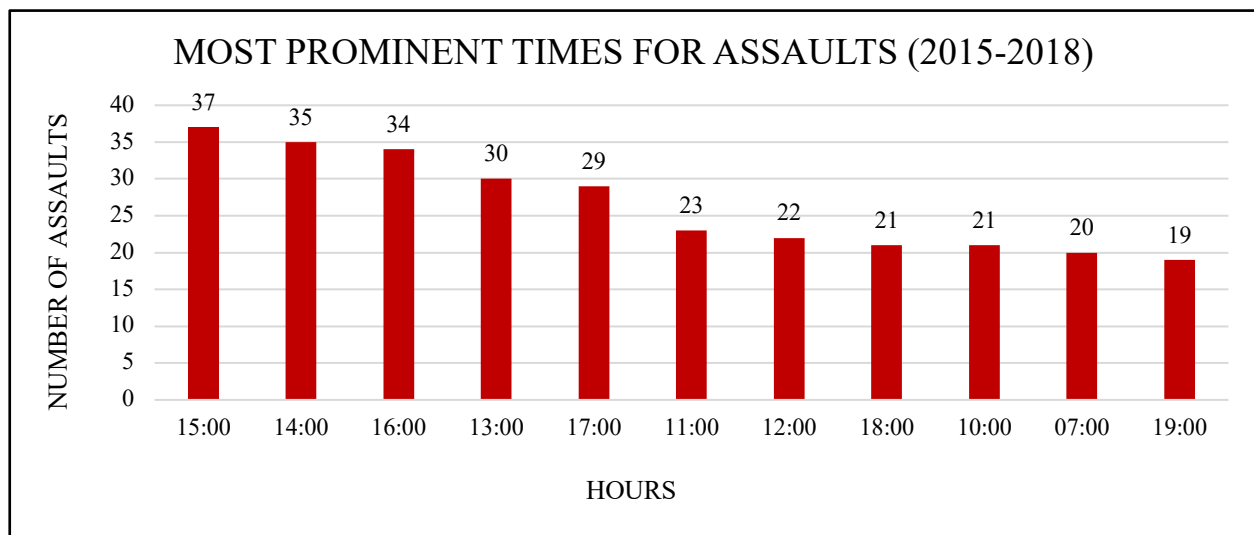
A further breakdown of assaults by bus line is illustrated in **Figure 3.0.5**. From 2010-2018, the top five lines with the most assaults were lines 4, 204, 720, 207, and 40. The graph shows the top ten lines with the most assaults to provide a more detailed analysis across multiple lines.

**Figure 3.0.5**



**Figure 3.0.6** shows that most of the assaults that took place between 2015 and 2018, took place in the afternoon between the hours of 13:00 and 17:00 (i.e., 1:00 pm and 5:00 pm). This is an important statistic to consider for the deployment of police, Supervisors, and conducting fare enforcement missions in an effort to quell assaults. Using this information, mitigation efforts can be directed to specific lines at certain times of the day for scheduling missions or showing police and supervisor presence on the buses. Understanding that resources are always a concern, targeted policing and enforcement tactics should be performed under a joint effort by both Metro and local law enforcement.

**Figure 3.0.6**



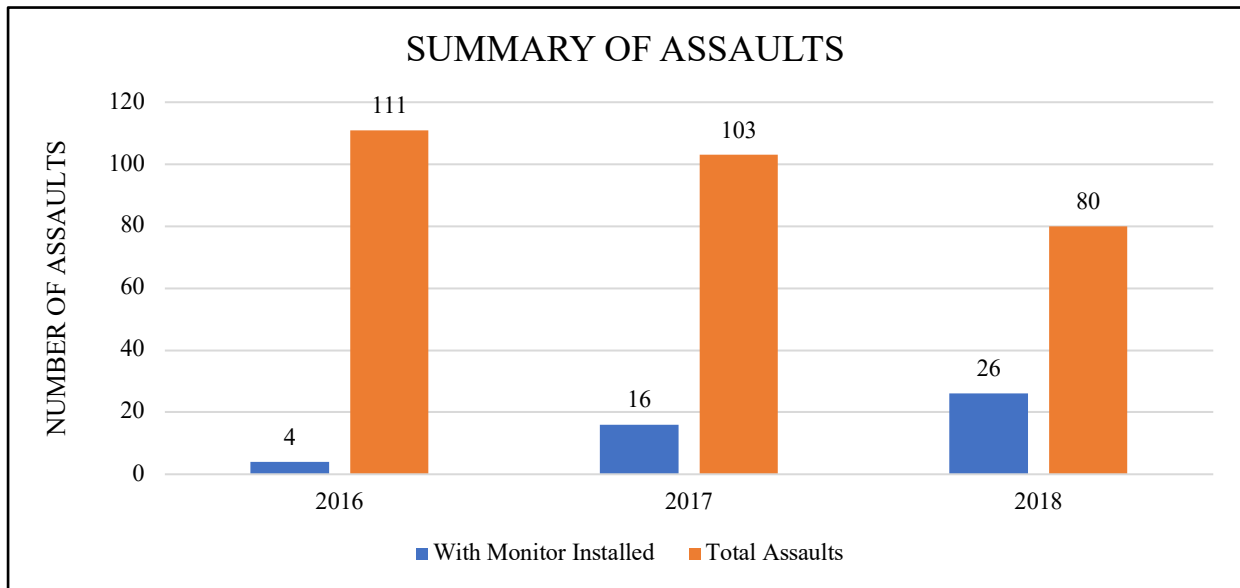
In addition to the installation of safety barriers, cameras with monitors are in the process of being installed on Metro’s bus fleet. The use of cameras and monitors on board buses has been identified as an effective industry practice for preventing passenger assaults on bus operators. **Figure 3.0.7** illustrates the number of assaults on buses that occurred with and without monitors being installed since the monitors began being installed in 2016. As of March 29, 2019, nearly 1,000 buses in the Metro fleet had been outfitted with cameras and monitors.

As shown in **Figure 3.0.7**, while the overall number of assaults has decreased between 2016 and 2018, the number of assaults that have occurred on buses with cameras and monitors installed has increased. This finding can be interpreted as follows:

- The cameras and monitors are effectively contributing to the reduction in bus operator assaults (i.e., as more cameras and monitors have been installed, the overall number of assaults has decreased);
- Although the overall frequency of assaults has decreased between 2016 and 2018, the frequency of assaults occurring on board buses with cameras and monitors has increased. This is likely because in 2018 more buses were equipped with the cameras and monitors than in 2016 when only a few buses were equipped with cameras.

It is likely that this trend will plateau as installation of the cameras and monitors is completed throughout Metro’s fleet, as there will always be a segment of the population that carries out assaults regardless of the presence of cameras and monitors. The decrease in assaults between 2016 and 2018 cannot be entirely attributed to the installation of the cameras and monitors. Rather, the decrease in assaults also may be the result of more barrier installation and use, increased police presence, training, or a combination thereof with cameras. All of these factors are important because transit riders may not notice the cameras or forget about their presence after they become angry about a matter or incident.

**Figure 3.0.7**



## 4.0 Analysis of Metro Bus Operator Survey Data

A survey of Metro bus operators was developed and conducted to gather operator feedback regarding the bus barrier safety systems. The survey, which is provided in **Appendix E**, was used to collect general demographic data with regard to age, gender and years of experience, as well as specific data with regard to use of the barriers, operator perceptions regarding the effectiveness of the barriers, challenges and issues inhibiting use of the barriers, and information about training on the use of the safety barrier and how to deal with volatile situations. The surveys were distributed to bus operators at all 11 Metro bus divisions. The bus operators were paid for ten minutes of their time to complete the surveys and the surveys were then collected and analyzed. In total, 333 surveys were collected.

As is experienced with most large-scale surveys, the following issues were identified with the bus operator survey responses:

- Not all surveys were completed in their entirety.
- Many bus operators chose not to answer certain questions. This could result in inaccurate trend analysis results.
- Some of the written responses contained suggestions that were not appropriate for the question being asked.

**Table 4.0.1** identifies the survey question numbers and the number of responses to each that were missing or did not have complete responses.

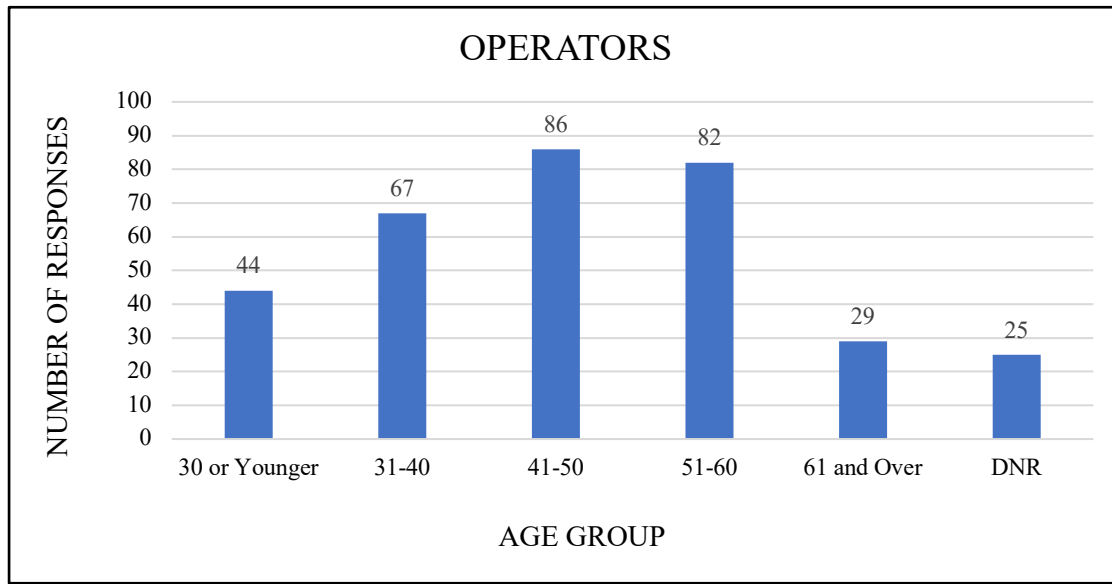
**Table 4.0.1**

Bus Operator Surveys	
Question Number	Number Missing Additional Information
7. Barrier ease of use	6
8. Effectiveness of barriers	21
10. Would Correcting issues increase use of barriers	51
12. Selective use of barriers by line	17
15. Effectiveness of training regarding barriers	18
18. Effectiveness of de-escalation training	14
20. Mandatory vs. optional use of barriers	59
24. Other protective measures	29

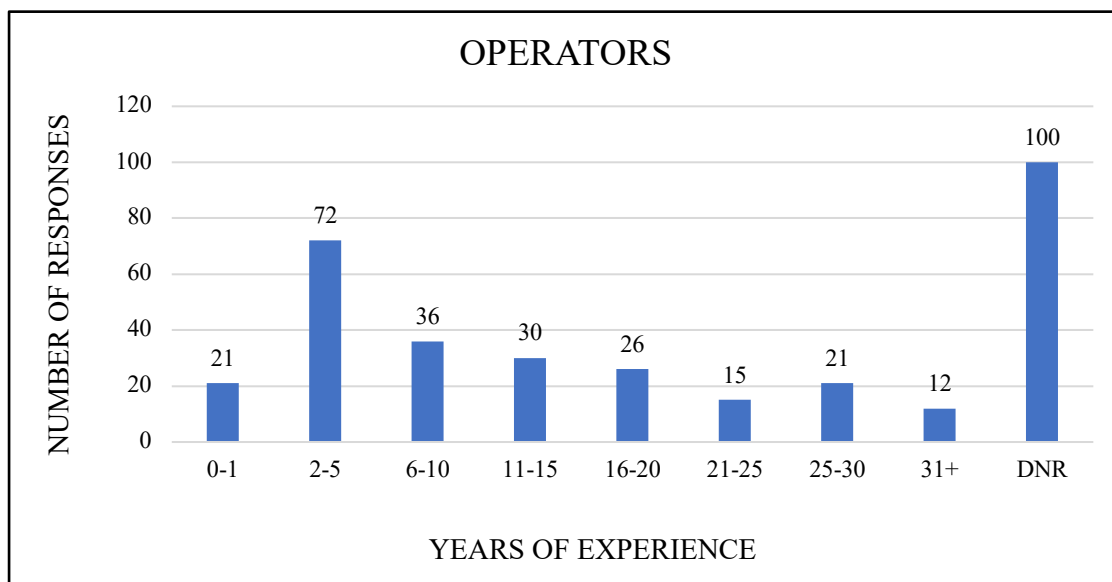
Of the 333 total surveys collected, 8% were determined to be missing requested information. Despite these issues, sufficient surveys were collected to complete an analysis of bus operator responses. **Appendix B** provides additional graphs and charts produced as a result of the analysis. Based on the large non-response rate to the question of whether or not barrier use should be “mandatory vs. optional” it may be inferred that operators are reluctant or ambivalent about this issue.

Bus operator demographic data was first analyzed. Of the total number of respondents, 172 were male, 55 were female, and 106 bus operators did not respond (DNR) to the demographic data questions. Of all respondents, 305 were full-time bus operators, 21 were part-time bus operators, and 7 operators did not answer the question. **Figures 4.0.1** and **4.0.2** summarize the bus operator demographic results.

**Figure 4.0.1**



**Figure 4.0.2**



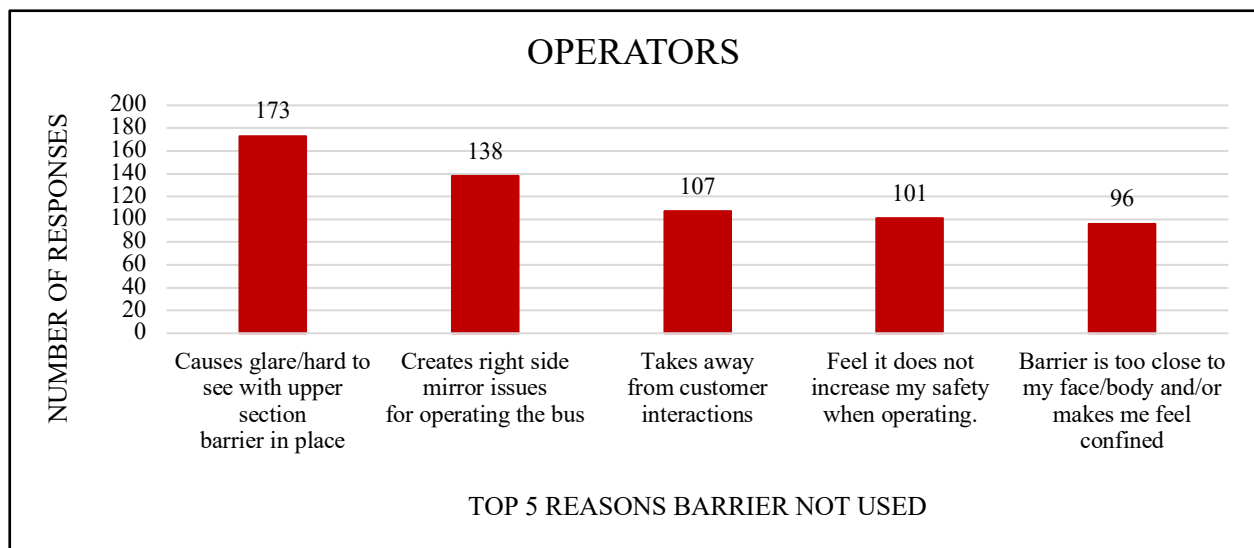
Bus operator use and operation of the safety barrier systems was next analyzed. Of the total 333 operators surveyed, 320 stated they had operated a bus with a safety barrier, 8 responded they had not, and 5 did not answer the question. Of those that responded, 307 bus operators stated they have used the barrier systems, while 21 operators stated they did not, and 5 operators did not answer the question. The survey showed that less than half (43%) of the operators responded that they used both portions of the safety barrier, 54% used only the bottom portion of the barrier, and 3% used only the top portion. However, OIG field observations of 229 operators found that only 18% of the operators used both portions of the barriers, 81% used only the bottom portion, and 1% used only the top portion.

There is a significant difference between 43% of operators responding on the survey that they used both portions of the barriers versus only 18% of operators being observed using both portions during field observations. This difference might be attributed to operators responding to the survey with what they perceived they were expected to do versus how they were actually observed using the barriers. It may also be that the survey results reflect that operators initially used the barriers, but over time discontinued their use as a result of operational and other issues. This is supported by the data presented in **Figure 4.0.3**, which presents the top five reasons why bus operators stated they do not use the barrier systems.

While other agencies were surveyed regarding the mandatory use of the barriers, only one of the agencies surveyed conducts audits of bus operator barrier use and this agency did not share the data from these audits. As a result, it is not possible to compare LA Metro to the other agencies surveyed to determine if the other agencies are achieving better or worse results, because there is no data from the other agencies to be used for comparison.

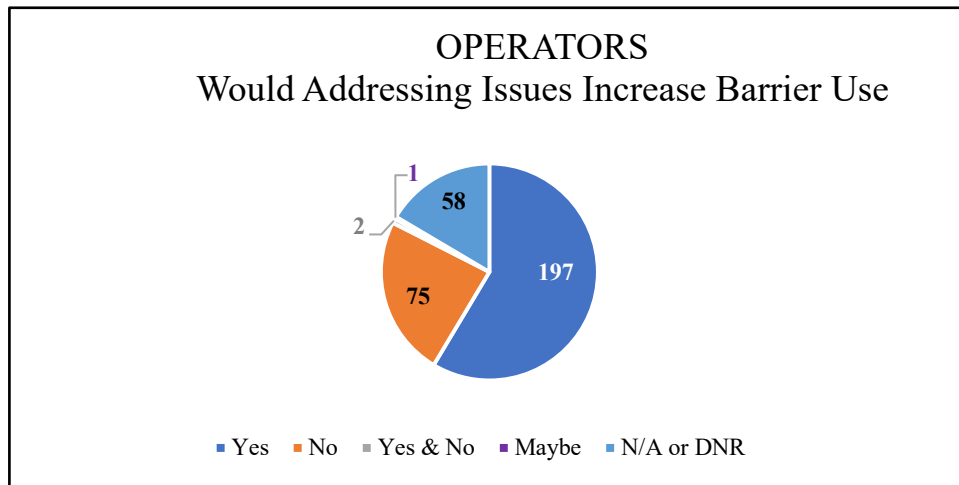
In addition, although the survey responses indicate a high number of operators are using the safety barriers, a significant number (251 or 75%) of responses received stated reasons why the barriers were **not** used. This indicates that while many bus operators have used the barrier systems, they are not used consistently.

**Figure 4.0.3**



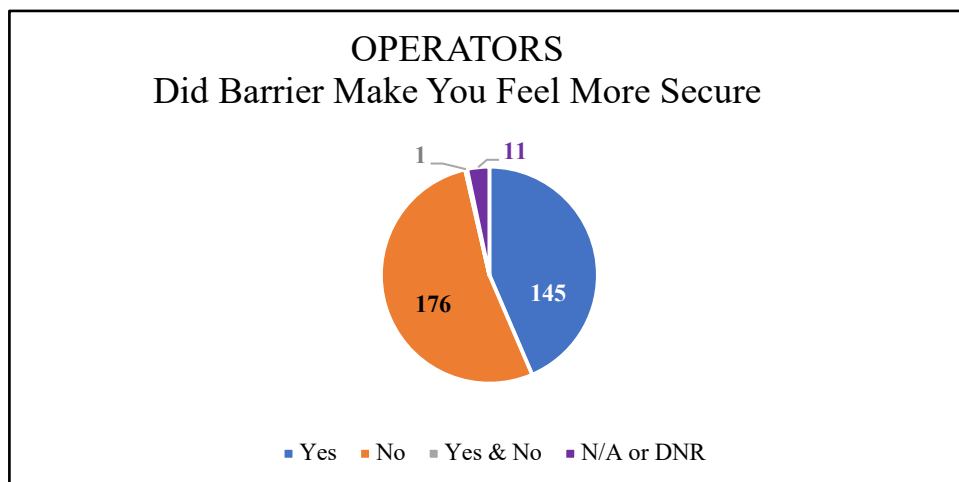
To investigate further as to why bus operators are not using the barriers, the survey asked if addressing the issues identified in **Figure 4.0.3** would increase the use of the barriers. As shown in **Figure 4.0.4**, the majority (59%) of respondents answered yes, agreeing that addressing these issues would increase their likelihood of using the barriers. However, a significantly large portion (i.e., 75 operators or 22.5%) said fixing the issues would not increase their use of the safety barriers.

**Figure 4.0.4**



The bus operator surveys also examined if the bus operators felt more secure using the safety barriers. As shown in **Figure 4.0.5**, 145 (43.5%) bus operators replied that they did feel more secure, while 176 (52.8%) replied that they *did not* feel more secure. One operator responded both yes and no (possibly an error in completing the survey), and 11 did not answer the question.

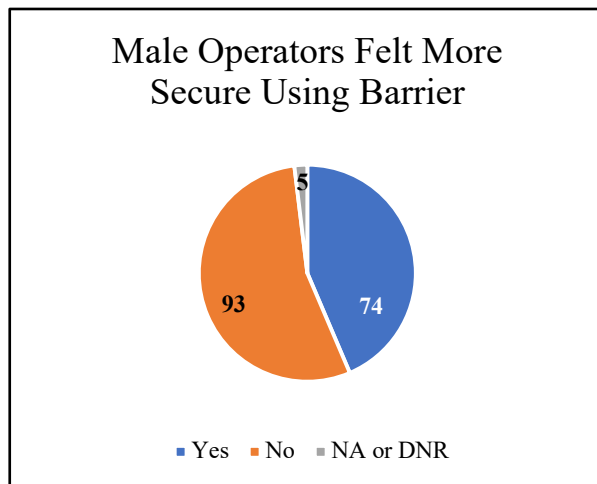
**Figure 4.0.5**



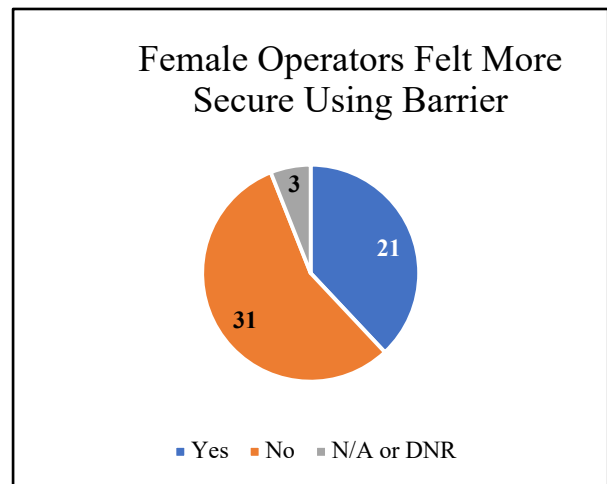


Bus operator survey data was also analyzed by age, gender and years of experience of the bus operators to determine if there were differences among males and females, among age groups, or among experience levels. The trend for both gender responses were similar. As shown in **Figures 4.0.6** and **4.0.7**, both male (54%) and female (56%) bus operators responded that they *do not* feel more secure with the barriers in place. Note that while a total of 322 operators provided a response to whether or not the barriers made them feel more secure, only 219 operators identified their gender in their survey responses. **Figure 4.0.8** compares the sense of security felt by differing age groups in using the safety barriers. Younger operators (i.e., 30 and under) were the only group that felt more secure using the barriers.

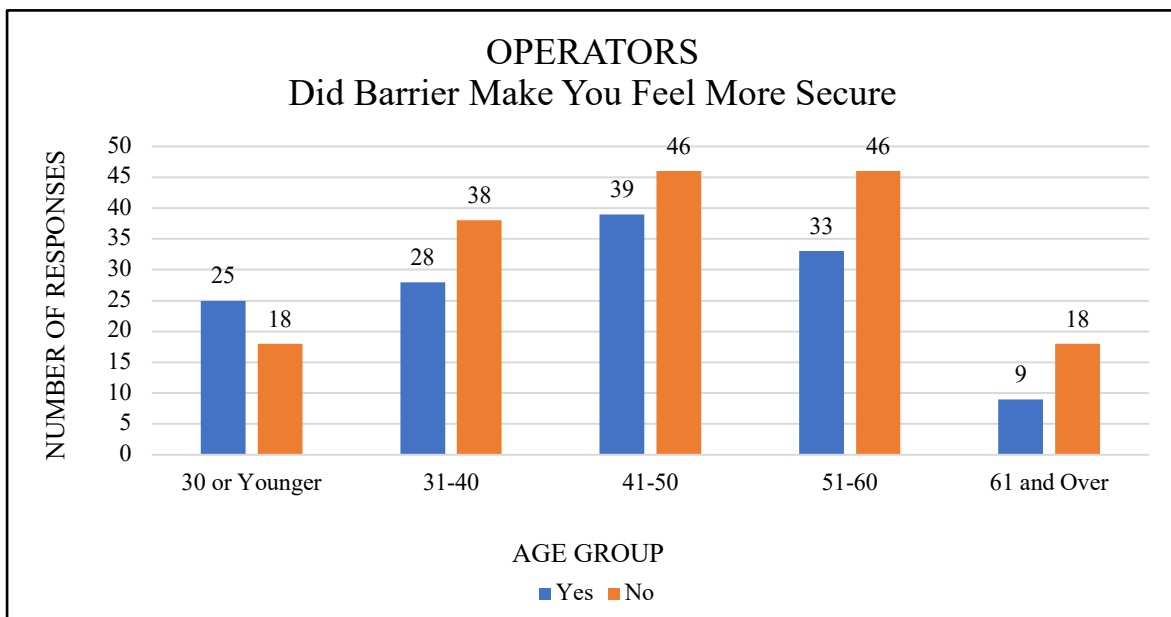
**Figure 4.0.6**



**Figure 4.0.7**



**Figure 4.0.8**



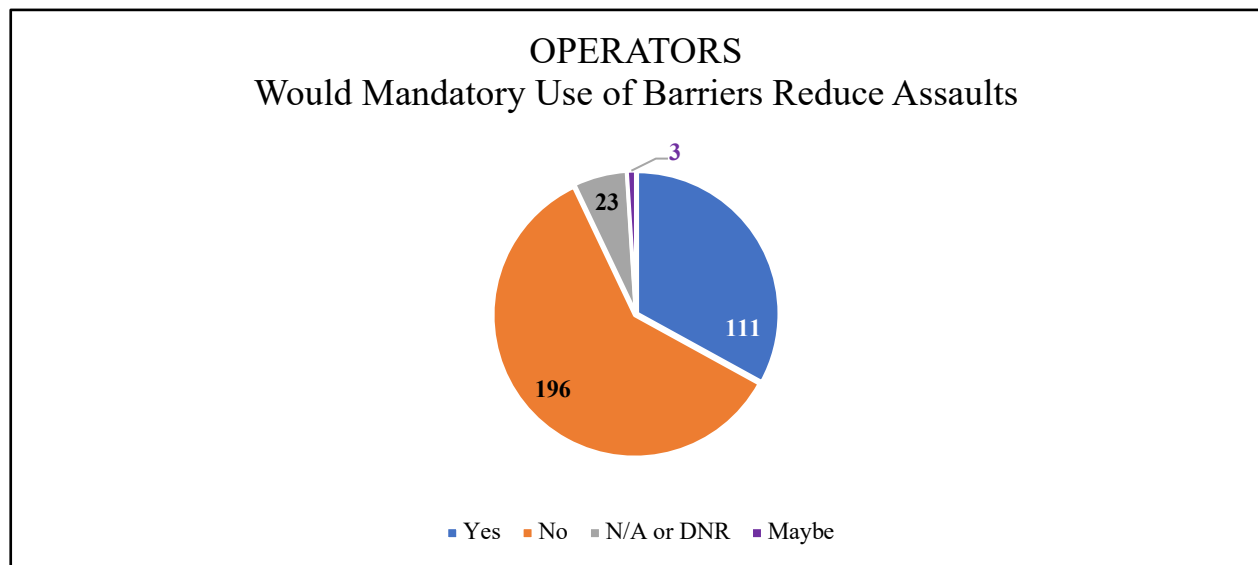
The bus operator survey also examined how effective bus operators thought the safety barriers are in preventing assaults. As shown in **Table 4.0.2**, approximately 72% of the respondents indicated that they felt the barriers were somewhat or very effective in preventing assaults. This is somewhat contradictory to previous results that indicated that the majority of bus operators do not feel more secure with the barriers in place.

**Table 4.0.2**

Response	Total Number Per Each Category
Did Not Respond	13
Very Ineffective	17
Ineffective	64
Somewhat Effective	168
Very Effective	71

Of the 333 bus operators surveyed, 13 did not to respond to the question of barrier effectiveness. This may be as a result of the bus operators fearing that responding to this question could lead to mandatory use of the barriers. Anticipating this concern, the survey asked whether the bus operators thought that mandatory use of the barriers would reduce assaults. As shown in **Figure 4.0.9**, 196 (59%) of the respondents felt that mandatory use of the barriers would not reduce the occurrence of assaults.

**Figure 4.0.9**



Again, the results of the analysis are somewhat contradictory in that the majority of bus operators answered that mandatory use of the barriers would not reduce assaults; however, as was shown in **Table 4.0.2**, the majority (72%) of bus operators also felt the barriers are somewhat or very effective in reducing assaults. This could be an indication that Metro’s bus operators want the use of the barrier to remain optional.

This may also account for the large portion of bus operators that did not respond to the survey question of whether or not they felt the barriers were effective in preventing assaults. Also, the majority of the operators are not using both portions of the safety barriers.

Bus operator training with regard to the use of the barriers as well as de-escalation training for dealing the volatile situations was also examined as part of the bus operator survey. **Table 4.0.3** summarizes the results of this portion of the analysis. Of particular interest is the number of respondents who indicated they had not received either type of training. This may be because training is not mandatory for all staff, training is ongoing, or some bus operators had not yet received the training prior to completing this survey. Adding both training classes as part of the new hire training package, along with any other ongoing training requirements may help to fill this gap.

**Table 4.0.3**

<b>Training Provided</b>	<b>Number that Received Barrier Use Training</b>	<b>Number that Received De-Escalation Training</b>
Yes	101	170
No	213	118
Unknown or Did Not Respond	19	45

The survey also sought feedback as to the effectiveness of the training to determine if the training currently being provided to Metro’s bus operators provides the necessary instruction needed to properly use the barriers and to safely address potentially volatile issues on the bus. As shown in **Table 4.0.4**, responses were inconclusive regarding the effectiveness of the training. The majority of the “Very Ineffective” responses for both training categories appear to be from operators who did not receive the training.

**Table 4.0.4**

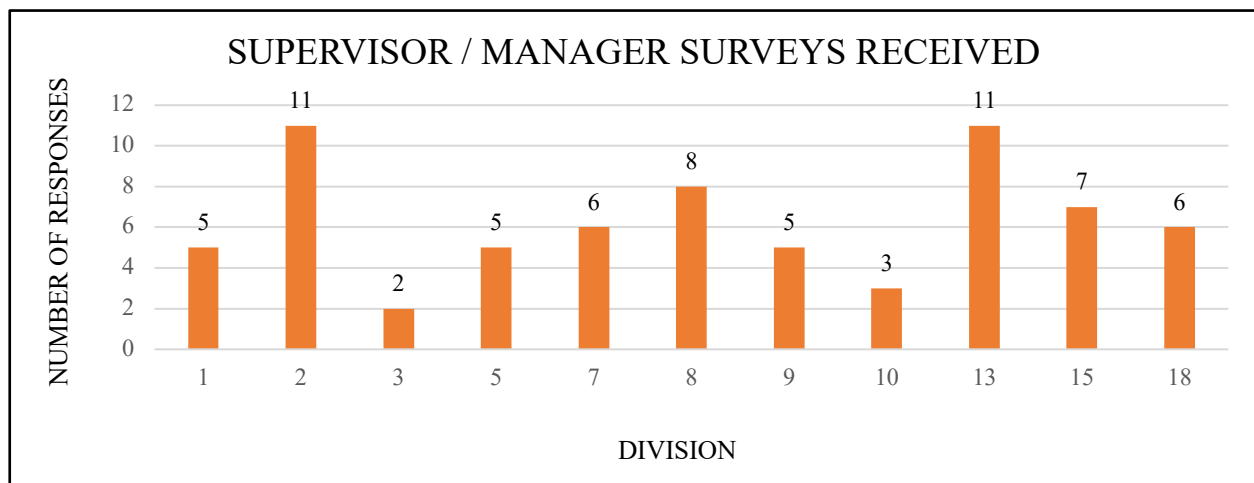
<b>Bus Operator Response</b>	<b>Barrier Training Effectiveness</b>	<b>De-Escalation Training Effectiveness</b>
Very Effective	69	78
Somewhat Effective	67	95
Ineffective	38	31
Very Ineffective	32	27
N/A or Did Not Respond	127	102

## 5.0 Analysis of Metro Bus Supervisor/Bus Manager Survey Data

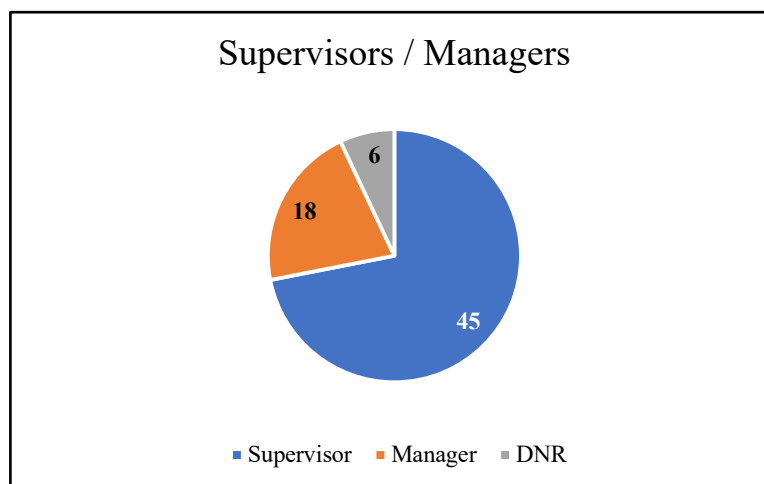
A survey of Metro Bus Supervisors and Bus Managers was developed and distributed to all 11 bus divisions to collect data concerning their usage and perceptions of the effectiveness of the safety barriers, as well as their overall assessment of the safety barriers and the associated training provided to bus operators. A total of 69 surveys were collected for analysis. **Appendix F** provides a copy of the Bus Supervisor / Manager Survey.

Again, not all of the surveys were completed in their entirety. However, sufficient responses were received to complete the analysis and identify potential trends. **Figure 5.0.1** shows the number of responses received from all 11 divisions while **Figure 5.0.2** illustrates the responses received by position title (DNR stands for “did not respond” to the question). A total of 69 surveys were collected - 45 Supervisors and 18 Managers responded, but 6 did not respond to this survey question.

**Figure 5.0.1**

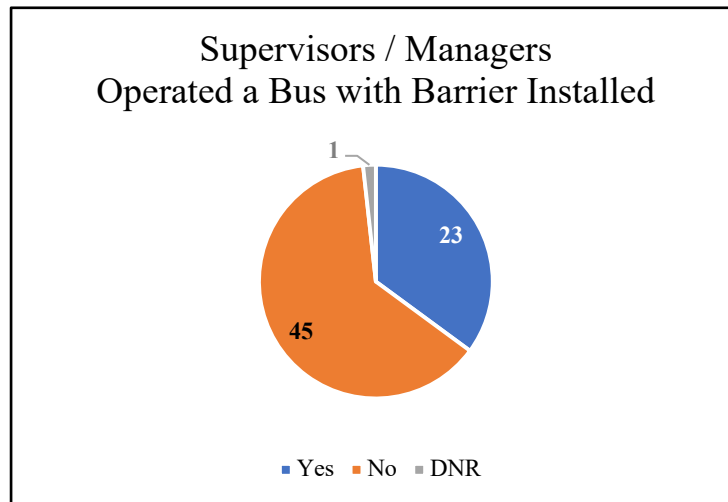


**Figure 5.0.2**



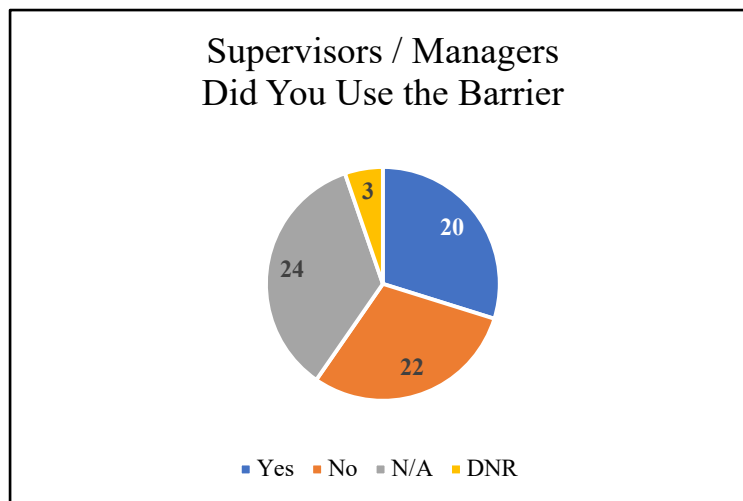
Understanding that not all Supervisors and Managers had driven a bus with the barriers in place, the survey focused on capturing Supervisor and Manager perceptions of the effectiveness of the barriers. **Figure 5.0.3** provides a breakdown of Supervisors and Managers who had (33%) or had not (65%) operated a bus with a safety barrier at the time of the survey.

**Figure 5.0.3**

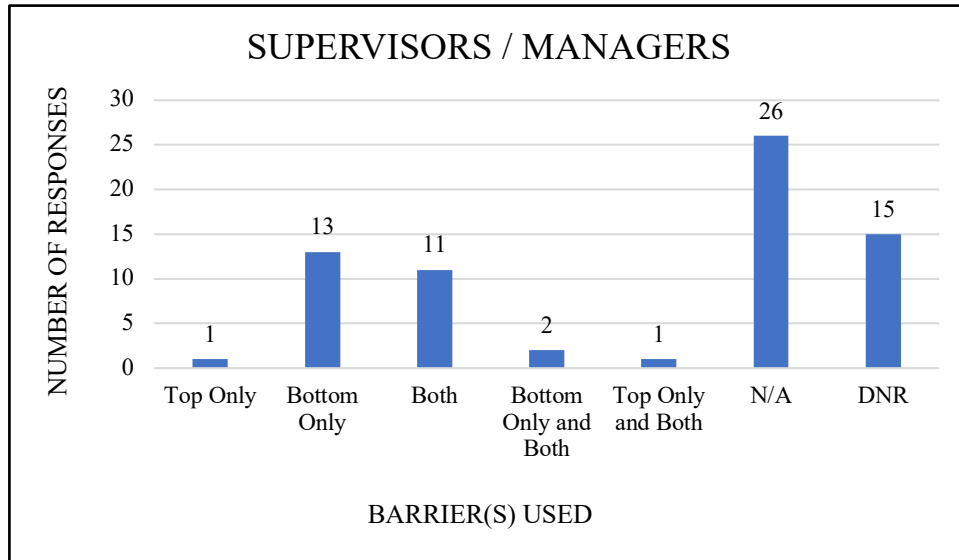


**Figure 5.0.4** illustrates the number of Supervisors and Managers that have operated a bus equipped with a safety barrier system. Of the Supervisors and Managers that had driven a bus with a safety barrier, the number that had used (20) or not used (22) the barrier was approximately equal. The 24 Not Applicable (N/A) responses were attributed to respondents that had not operated a bus with a barrier, and 3 individuals did not respond (DNR) to the question.

**Figure 5.0.4**

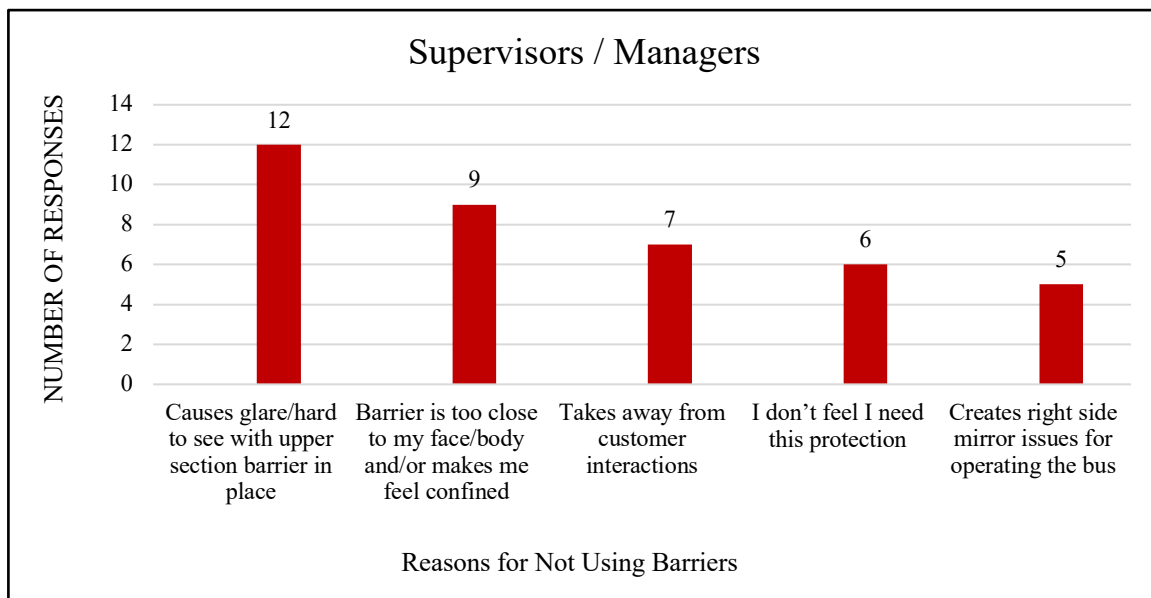


**Figure 5.0.5**



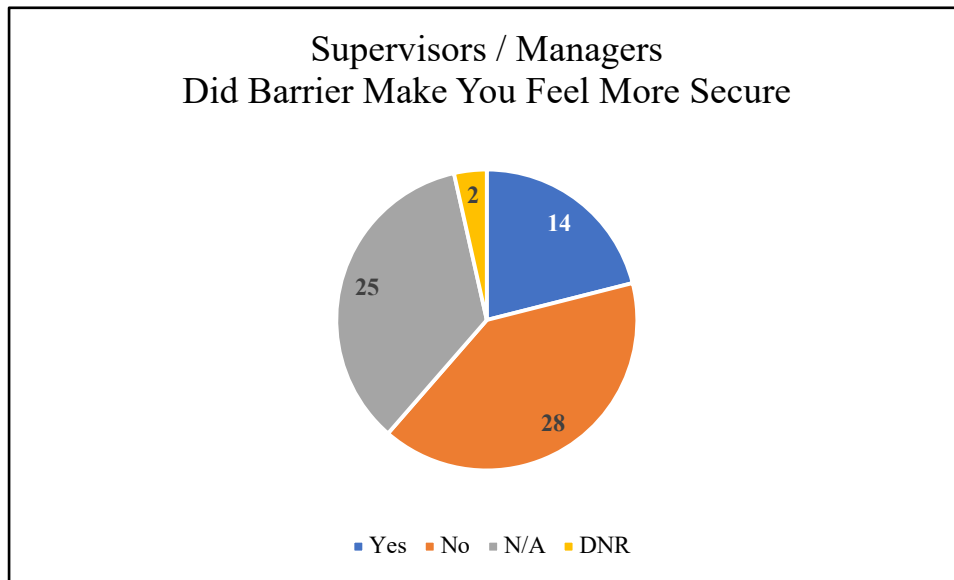
**Figure 5.0.5** shows the number of Supervisors and Managers who have used the barriers in differing and/or multiple configurations (i.e., top only, bottom only, both bottom and top). **Figure 5.0.6** identifies the reasons Supervisors and Managers did not use the barriers, which were mostly similar to those cited by operators (**Figure 4.0.3**).

**Figure 5.0.6**



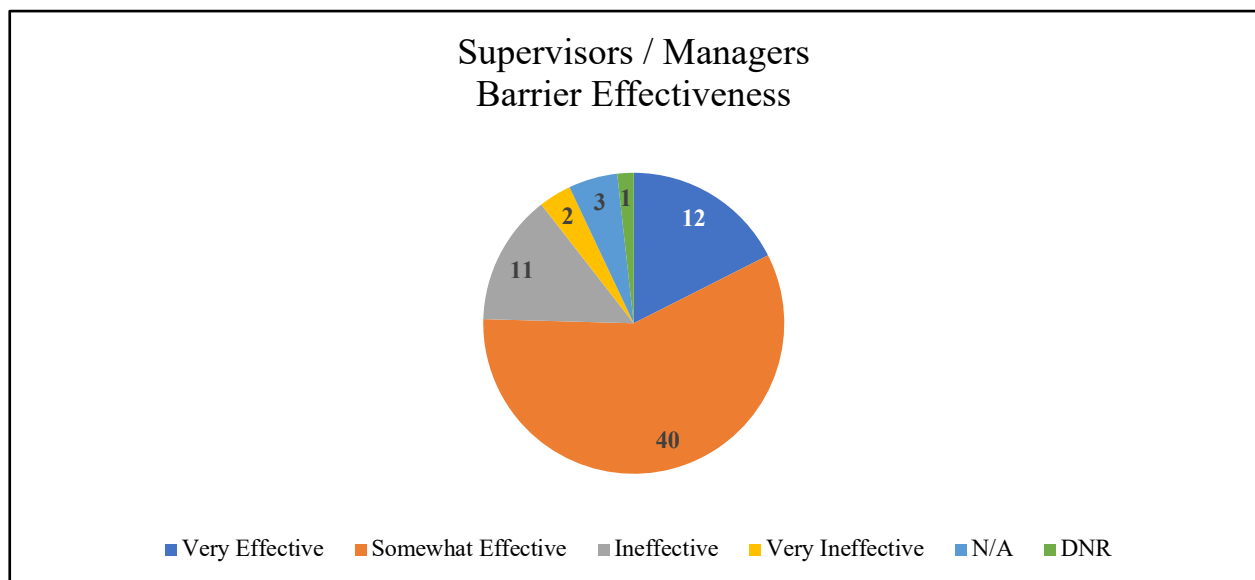
Bus Supervisor and Manager perceptions with regard to whether the barriers provided an increased sense of security was also studied. Responses, summarized in **Figure 5.0.7**, were consistent with those of Bus Operators in that 41% responded that the barriers did not make the Supervisor or Manager feel any more secure.

**Figure 5.0.7**



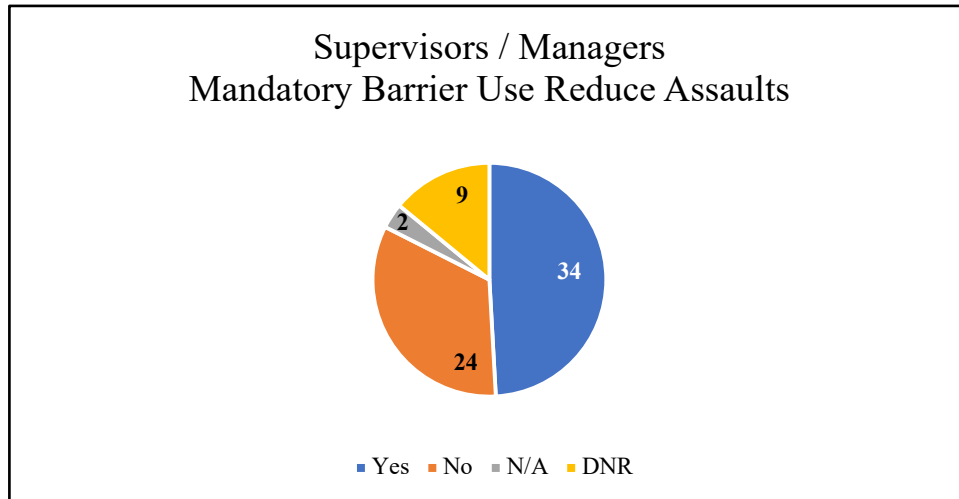
As shown in **Figure 5.0.8**, 52 (75%) of the Supervisor and Manager respondents felt that the barriers were very effective or somewhat effective in providing protection to bus operators.

**Figure 5.0.8**



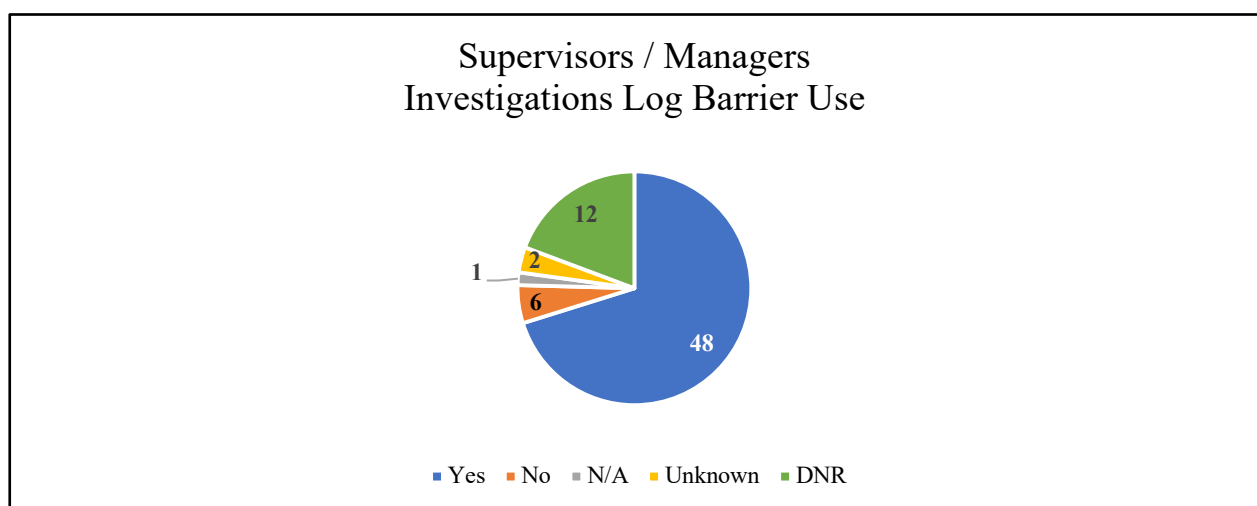
In addition, as shown in **Figure 5.0.9**, approximately 50% of Supervisors and Managers believed mandatory use of the barriers would be beneficial.

**Figure 5.0.9**



Finally, Supervisors and Managers were asked a series of questions regarding the types of data collected during operator assault investigations. In analyzing this data, it was noted that not all investigation reports identify whether or not a barrier was installed on the bus and/or what section of the barrier, if any, was being used at the time of the assault. However, 48 (70%) of the Supervisors and Manager responses indicate this data is collected. This may be the result of increased efforts in the recent years, with the installation of barriers, to collect this data as part of the investigation process. **Figure 5.0.10** illustrates the Supervisor and Manager responses regarding documentation of barrier use during an investigation.

**Figure 5.0.10**





## 6.0 Analysis of Industry Survey Data

As part of the study objectives, an industry survey was completed to compare transit agencies similar to Metro in regard to their use of and experience with bus operator safety barriers. The survey, included in **Appendix G**, was sent to 13 transit agencies within the United States, England, and France. Six agencies responded with usable data. Respondents to the survey included:

- Miami-Dade Transit (MDT)
- Washington Metropolitan Area Transit Authority (WMATA)
- Maryland Transit Administration (MD MTA)
- New York City Transit Authority (NYCTA)
- Massachusetts Bay Transportation Authority (MBTA)
- Tri-County Metropolitan Transit District of Oregon (TriMet)

Properties that were contacted but did not respond, or that responded with data that was not useable included:

- Dallas Area Rapid Transit (DART)
- Chicago Transit Authority (CTA)
- San Francisco Municipal Transit Authority (SFMTA)
- Keolis Transit America Las Vegas
- Transportation for London (TFL)
- RATP, Paris
- Regional Transportation District (RTD) of Denver, CO responded; however, RTD does not have safety barriers on their buses.

**Table 6.0.1** provides a comparison between Metro and each of the six transit properties that responded with usable data. The responding agencies were of similar size and ridership as Metro, which allowed for a complementary level of data comparison.

**Table 6.0.1**

Agency	Number of Buses	Number of Operators	Annual Ridership	Type(s) of Barrier(s)	Percent of Buses With Barriers Installed
LA Metro	2,357	3,800	275,777,661	Arow Global	≈ 50%
WMATA	1,507	2,500	123,000,000	Arow Global	76%
NYCTA	5,778	12,300	720,000,000	Bentech TCB/NF Arow Global Nova Bus	82%
MDT	800	1,764	51,759,916	Integrated into bus specifications and installed by manufacturer for all new buses delivered since 2003	100%
TriMet	670	1,397	56,737,466	ArowGuard Fixed System with extended glass	6%
MBTA	1,023	1,650	116,038,720	Arow Global	39%
MD MTA	760	1,345	63,746,000	New Flyer (OEM)	100%

The industry survey focused on the same areas studied through the Bus Operator and Bus Supervisor and Manager Surveys. In this manner, a comparison could be made between Metro and the responding transit properties with regard to the use of the bus operator safety barriers, the types of assaults typically experienced, barrier effectiveness, tracking the usage of barriers, and recording barrier usage during assault investigations. The industry survey also asked if the transit property was willing to share detailed statistical data with Metro in the future in the event further analysis and benchmarking was pursued. In addition, the survey collected data regarding the training provided to employees regarding the use of the safety barriers, as well as de-escalation training for volatile situations.

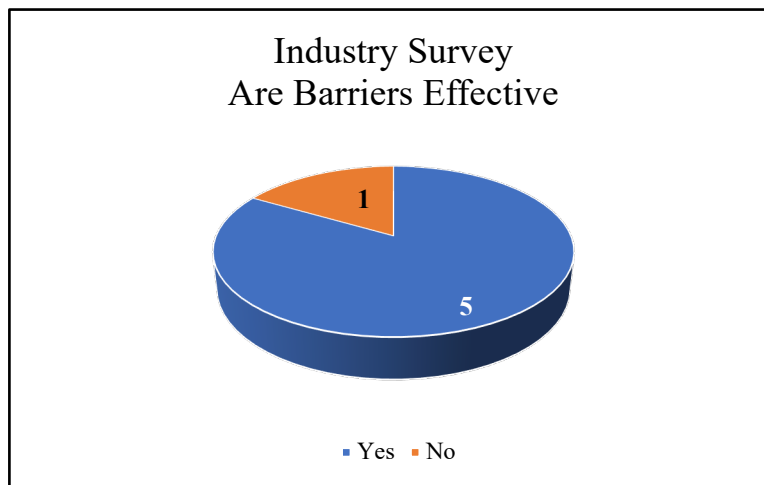
**Table 6.0.2** summarized the industry survey results. An individual breakdown for all the questions asked on the survey is contained in **Appendix D**.

**Table 6.0.2**

Category	Yes	No	N/A
Buses equipped with other security measures	5	1	0
Barriers difficult to install/maintain	1	5	0
Gathered feedback from Bus Operators on barriers	4	2	0
Barrier training provided to Bus Operators	3	3	0
Barrier training deemed effective	3	0	3
De-escalation training provided to Bus Operators	6	0	0
De-escalation training deemed effective	6	0	0
Investigation of barrier use after an assault	5	1	0
Training provided to prevent future assault to Bus Operators	5	1	0
Willing to share data	5	1	0

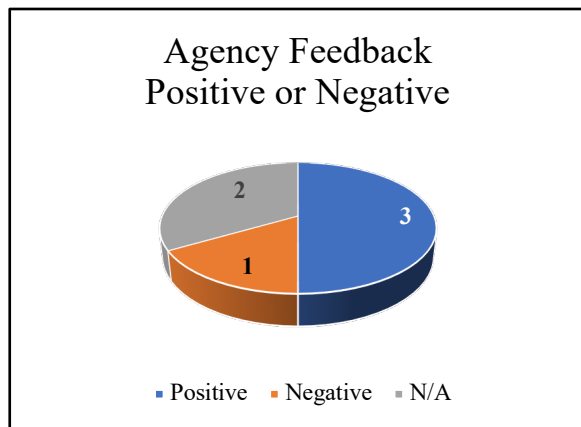
Since three of the six agencies surveyed did not provide safety barrier training for their operators, their response to the effectiveness of the training was “N/A”, not applicable. **Figure 6.0.1** shows that five of the six agencies surveyed are using the same or similar safety barriers (Table 6.0.1, column 5) and believe these systems to be effective in preventing or deterring operator assaults.

**Figure 6.0.1**

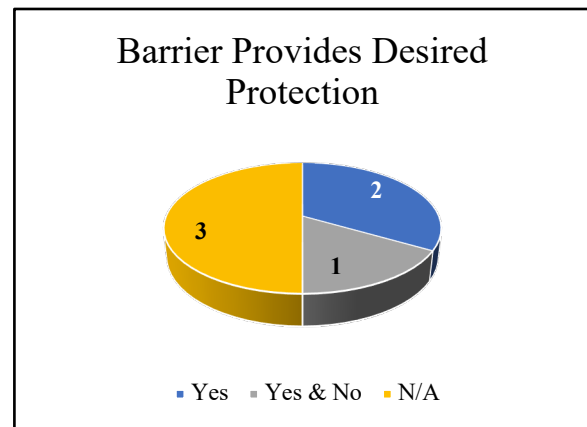


As depicted in **Figures 6.0.2**, of the six agencies that responded to the industry survey, three believed the barriers had been positively received by their bus operators, two had not gathered feedback (N/A), and one had received negative feedback. **Figure 6.0.3** depicts that two agencies also believed that the barriers provided the level of protection desired, and one agency’s answer of “Yes and No” would indicate they potentially would like to see additional improvements in the barrier. In addition, five of the six responding transit properties require the use of the barriers, which may have led to three agencies answering “N/A”, while only one allowed for optional use at the discretion of the bus operators. No agency believed the barriers did not provide desired protection.

**Figure 6.0.2**

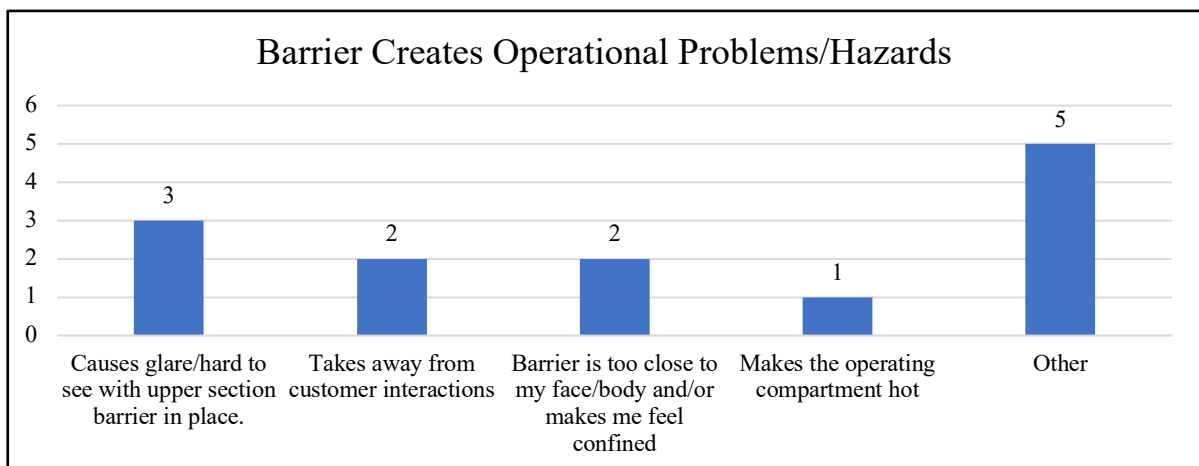


**Figure 6.0.3**



The survey sought to identify issues that bus operators encounter while using the barriers. **Figure 6.0.4** identifies the top issues cited by the bus operators of other transit properties. The “Other” category included responses such as “I don’t feel I need the protection,” “Feel it does not increase safety,” and “Barrier creaks or makes noise when used.” As with the Metro bus operator surveys, glare was one of the top issues identified.

**Figure 6.0.4**



## 7.0 Findings and Recommendations

The following findings and recommendations have been developed based on the results of the data analysis, survey results, and industry research.

### **Finding 1: Safety barriers and onboard camera systems appear to be effective deterrents to assaults on bus operators.**

The frequency of assaults on bus operators increased from 107 to 153 between 2010 and 2015. The bus operator safety barriers began to be installed in 2015, and onboard cameras and monitors began to be installed on buses beginning in 2016. Assault frequency began to decrease between 2016 through 2018 to 80 assaults in 2018. Based on these results, the presence of the safety barriers, on board camera and monitor systems, and possibly improved deployments of security personnel appear to be effective in reducing the frequency of assaults occurring against Metro's bus operators.

### **Recommendation 1 – Continue Installation Program**

- a. Metro should continue to install the bus operator safety barriers and onboard camera and monitor systems throughout its bus fleet and continue to monitor incident data to further verify the effectiveness of both systems in preventing assaults on bus operators.

### **Finding 2: Data pertaining to the bus operator use of safety barriers during assaults is inconsistently collected by stakeholders.**

Data regarding bus operator assaults has not been consistently collected and recorded by Metro, the Los Angeles County Sheriff's Department, and the Los Angeles Police Department. This includes bus operator assault investigation reports which do not always note whether the bus was equipped with a safety barrier or what, if any portion (e.g., the top portion, bottom portion, or both) of the barrier was in use at the time of the assault.

### **Recommendation 2 – Standardize and Enhance Data Collection**

- a. Metro should ensure data collection is standardized by Metro and all transit security providers and investigators to consistently identify the types of assaults that have occurred, if the bus was equipped with a safety barrier, if the barrier was in use at the time of the assault, and if in use, how it was being used (i.e., top portion only, bottom portion only, or both portions). Standardizing the data in this manner will result in more accurate and consistent data that can be more easily analyzed to identify trends and to measure performance.
- b. Metro should ensure data is collected on the type and extent of injuries incurred by bus operators when the safety barriers are in use. This will further aid in determining the effectiveness of the safety barriers (i.e., if bus operator injuries are lessened as a result of the barriers being used) and if design changes or modifications are necessary.

**Finding 3: Assaults occur more frequently on bus routes 4, 204, 720, 207, and 40 than others, during the afternoon hours of 1:00 pm to 5:00 pm, and most predominantly as a result of fare disputes.**

Bus routes 4, 204, 720, 207, and 40 were identified as the top five routes having the most frequent occurrences of assaults on bus operators. Assaults on bus operators occur most frequently between 13:00 and 17:00 hours (i.e., 1:00 pm to 5:00 pm). Fare disputes are the most frequent cause of assaults on bus operators.

**Recommendation 3 – Utilize Data Analysis to Set Policing Strategy**

- a. Metro should ensure that assault trend analysis results are used to review current policing and fare enforcement strategies to determine if law enforcement, Supervisors, and fare enforcement personnel and strategies are being appropriately deployed toward the routes and times of day in most need of Police, Supervisory, or fare enforcement presence.

**Finding 4: Metro’s bus operators do not consistently use the safety barriers.**

A total of 48 assaults against bus operators occurred between 2015 (when the barriers began to be installed) and 2018. Of these incidents, only 12 occurred while both the top and the bottom sections of the safety barriers were in place; 7 occurred while only the bottom portion of the barrier was in place; and 29 occurred while no part of the barrier was in use during the assault.

Of the 333 bus operators surveyed, 320 stated they had operated a bus equipped with a safety barrier; 8 responded they had not; and 5 did not answer the question. Also, 307 bus operators stated they had used the barrier systems, while 21 operators stated they have not.

OIG field observations revealed low usage of the barriers by Metro’s bus operators. In addition, 54% of the bus operators surveyed indicated they only use the bottom portion of the safety barrier if they decide to use it at all.

Nearly all bus operators surveyed provided reasons why they do not use the barriers. These reasons, listed in order of precedence, included the barriers causing glare, the barriers causing right-side mirror issues, the barriers taking away from customer interactions, operators believing that the barriers do not increase their safety, and the barriers being confining.

The majority of bus operators surveyed (59%) stated that mandatory use of the barriers would not reduce assaults; however, the majority (72%) also felt the barriers are at least somewhat or very effective in reducing assaults. This could be an indication that Metro’s bus operators want the use of the barriers to remain optional.

Approximately 50% of all bus Supervisors and Managers surveyed believed mandatory use of the barriers would be beneficial in preventing assaults on bus operators. In addition, five of six transit agencies surveyed require the mandatory use of safety barriers, while only one agency allowed for optional use.

#### Recommendation 4 – Issue Mandatory Usage Policy

- a. Metro should make the use of the barriers mandatory until Metro can determine if their use contributes to or causes accidents or increases accident frequency. Mandatory use of the barriers is the best way to evaluate their true effectiveness in reducing assaults on bus operators.
- b. If the use of the barriers is made mandatory, Metro should collect data to substantiate and study the issues identified by operators as to why they do not use the barriers. Metro can then take corrective action, such as design changes and modifications to the barriers, if accident/incident data substantiate operator concerns.

**Finding 5: Although most of Metro’s bus Operators and bus Supervisors and Managers believe the safety barriers are effective in preventing assaults, nearly half believe other additional protective measures are needed.**

Approximately 72% of the bus operators and 75% of bus Supervisors and Managers surveyed felt the barriers were somewhat to very effective in preventing assaults. However, 53% of all bus operators surveyed and 62% of all bus Supervisors and Managers surveyed stated that additional protective measures were needed in addition to the safety barriers. A number of bus operators noted that the current safety barriers have gaps that they felt left them vulnerable to assaults. These gaps can be seen in **Figures 7.0.1 and 7.0.2**.

**Figure 7.0.1**



**Figure 7.0.2**



Similarly, 56% of male bus operators and 60% of female bus operators stated that they *did not* feel more secure as a result of the safety barriers. Likewise, 41% of bus Supervisors and Managers surveyed responded that the barriers did not make them feel any more secure. These responses might indicate that the transparency of the barriers actually detracts from the feeling of safety or some other aspect of the barrier is undermining the feeling of safety.

Of all the bus operator age groups studied, only those bus operators 30 years of age or younger responded that they felt more secure using the barriers.

**Recommendation 5 – Establish Communication Channels for Follow-Up and Discussion of Bus Barrier Issues**

- a. Metro should further study why bus operators feel the bus safety barriers do not provide the protection needed to make them feel more secure and the other measures bus operators would like to see implemented.
- b. Evaluate the current design of the safety barriers to determine if bus operators' concerns can be addressed through design changes and modifications made to the safety barriers.
- c. Create a committee comprised of bus operators, Supervisors and Managers, Safety Department, and Bus Operations and Bus Maintenance personnel to investigate these issues and to determine appropriate mitigations. The focus of the committee should include an effort to increase barrier use, identify ways to make the barriers more effective, and evaluate training, and improve data collection and accuracy. Metro could also consider utilizing an existing committee to take on this action, if one has already been established for investigating possible safety issues with systems and equipment.

**Finding 6: Metro's training programs pertaining to the use of safety barriers and de-escalation training could be improved.**

Only 41% of bus operators surveyed felt Metro's training program for use of the safety barriers was somewhat to very effective, while 52% of bus operators surveyed felt that Metro's de-escalation training was somewhat to very ineffective.

**Recommendation 6 – Expand Scope of Training**

- a. Metro should review safety barrier and de-escalation training to evaluate scope of attendees, frequency, content, method of delivery, consistency of delivery, and employee engagement and understanding. Results from these evaluations should be used to modify training programs as necessary.
- b. Consider adding both training classes as part of the new hire training course and periodic refresher training for current operators along with any other ongoing training requirements.



**Finding 7: Metro’s experiences with assaults on its bus operators and the actions it is taking to prevent these types of incidents is consistent with other transit properties.**

The issue of Transit Operator assaults continues to be a leading concern for the transit industry. In response, the Transportation Research Board (TRB), through the Transit Cooperative Research Program (TCRP), has conducted two projects to provide the transit industry with guidance on how to combat the problem of operator assaults. These included:

- TCRP Research Report 193: Tools and Strategies for Eliminating Assaults Against Transit Operators; and
- TCRP Synthesis 93: Practices to Protect Bus Operators from Passenger Assault.

These reports examine the use of safety barriers to prevent bus operator assaults and present other strategies for preventing such assaults. The reports also explore the contributing factors of assaults and how they can be mitigated and provide an in-depth risk-based calculator that can be used to predict where future assaults may occur, so proactive steps can be taken to prevent their occurrence.

TCRP Research Report 193 determined fare disputes accounted for 44% of all assault causes. In comparison, of the total assaults reported by Metro between 2015 and 2018, 48% were attributed to fare related disputes. Other causes of assaults identified by TCRP Report 193 were again similar to those identified by Metro and included rule/policy violations, and service issues (i.e., missed stop or demanded stop).

In addition, analysis of industry survey results indicates that Metro is taking many of the same steps as other transit properties to prevent bus operator assaults. The installation of barriers, use of closed-circuit television, training on de-escalation techniques, and targeted policing missions are all industry best practices; many of which Metro is performing.

Of the transit properties that responded to LA Metro’s survey, six have undertaken programs to install bus operator safety barriers. However, unlike Metro, five of the six responding transit properties require mandatory use of the barriers, while only 1 allows for optional use at the bus operators’ discretion.

The issues identified by Metro’s bus operators regarding the safety barriers are also similar to those experienced by other transit properties. Each of the transit properties that responded to LA Metro’s survey identified issues of glare, confinement, and taking away from customer interactions as being leading operator complaints regarding the barriers.

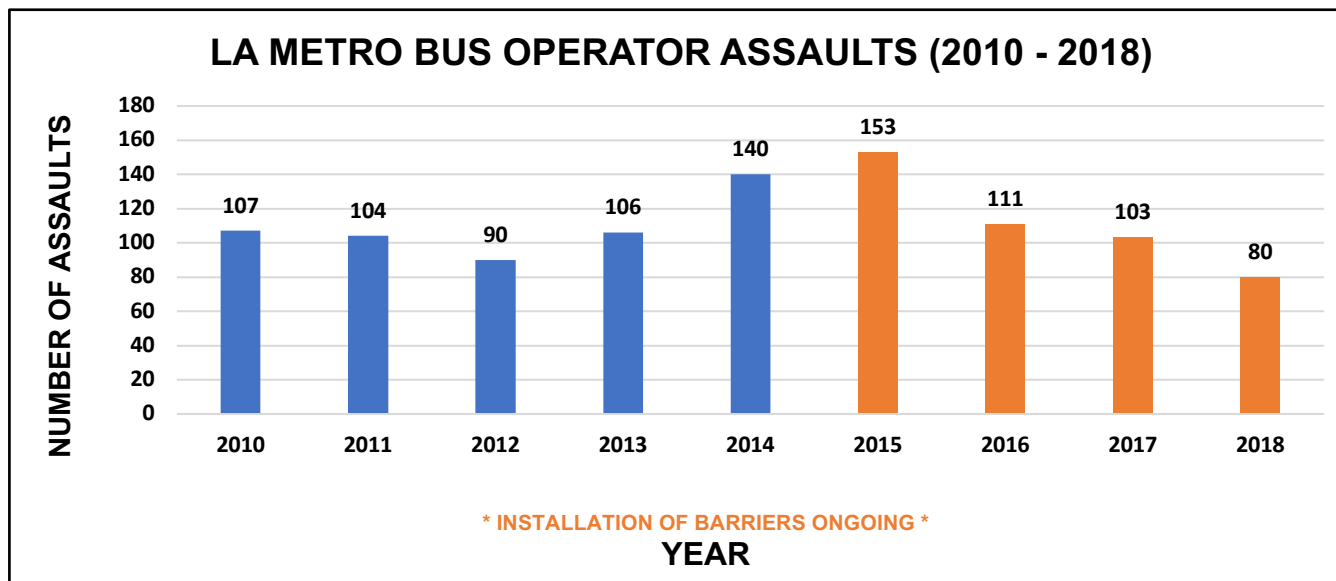
Each of the six responding transit properties provides de-escalation training to their bus operators, and three of the six provide training on how to properly use the barriers.

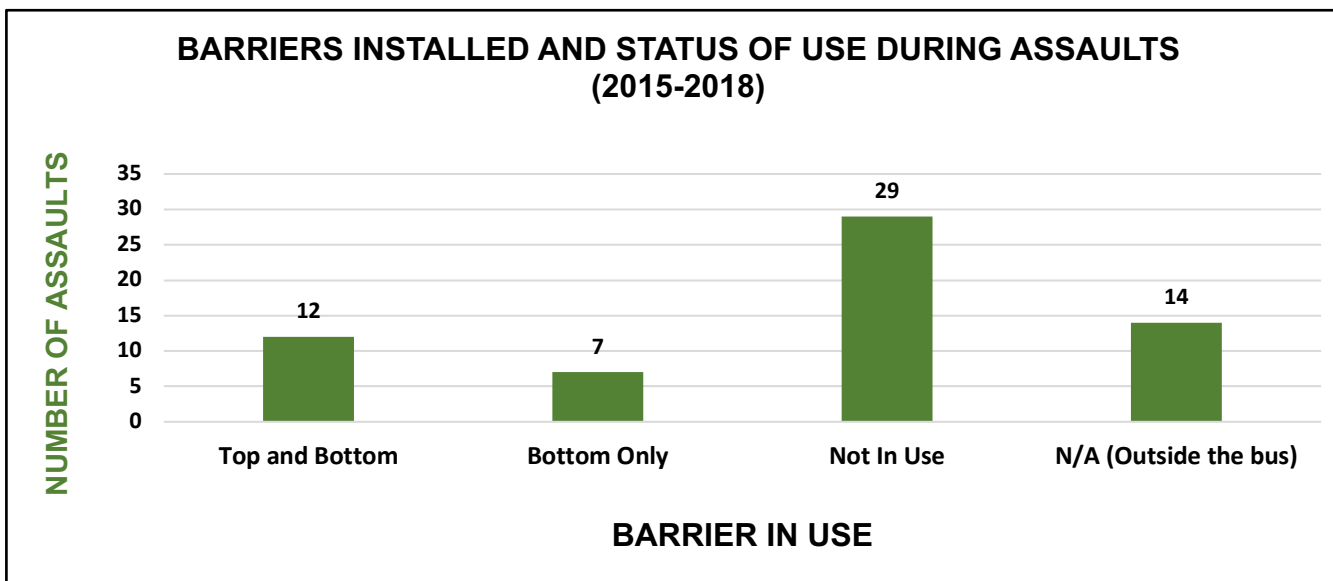
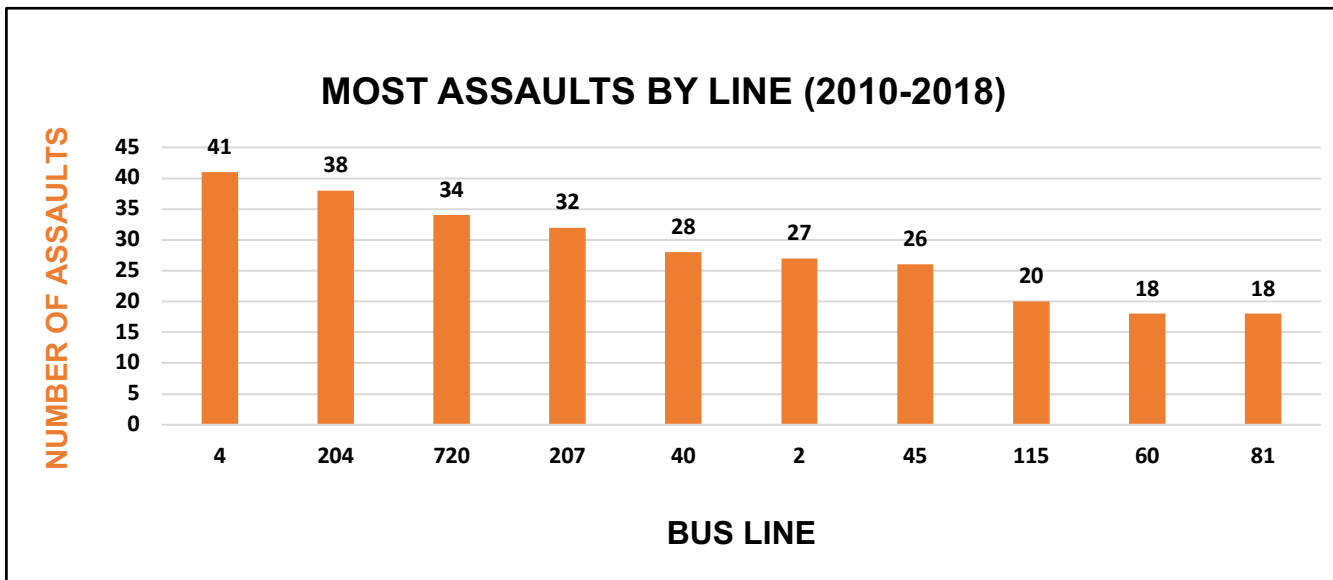
**Recommendation 7 – Continue Strengthening Preventative Measures to Combat Operator Assaults**

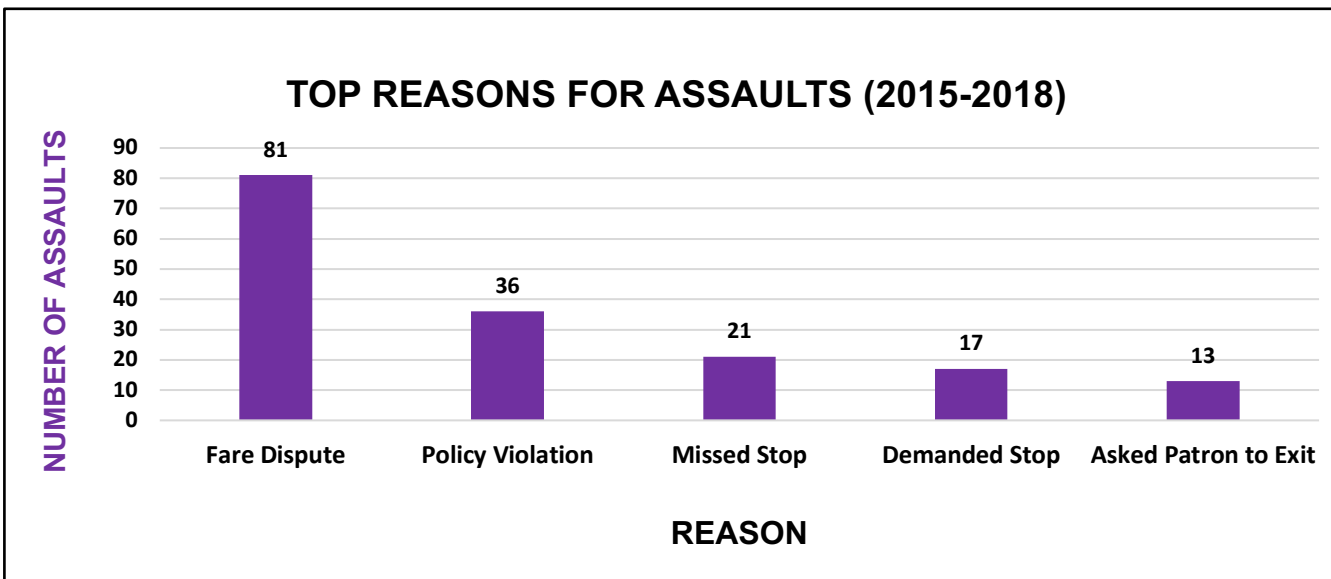
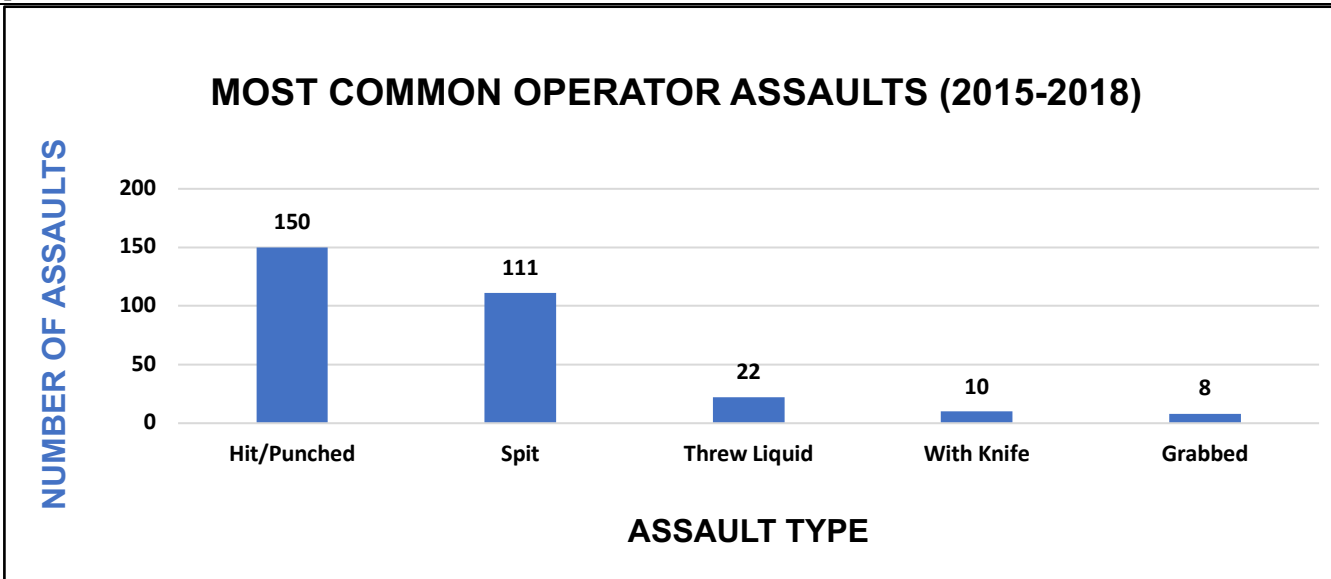
- a. Metro should continue to follow its current strategies and implement its current programs to prevent assaults on bus operators. These programs are consistent with industry best practices.
- b. Consider using some of the evaluation tools developed by TCRP to identify in more detail where its greatest risks reside and employ tactics such as targeted fare enforcement and policing patrols to address problem areas using existing resources.

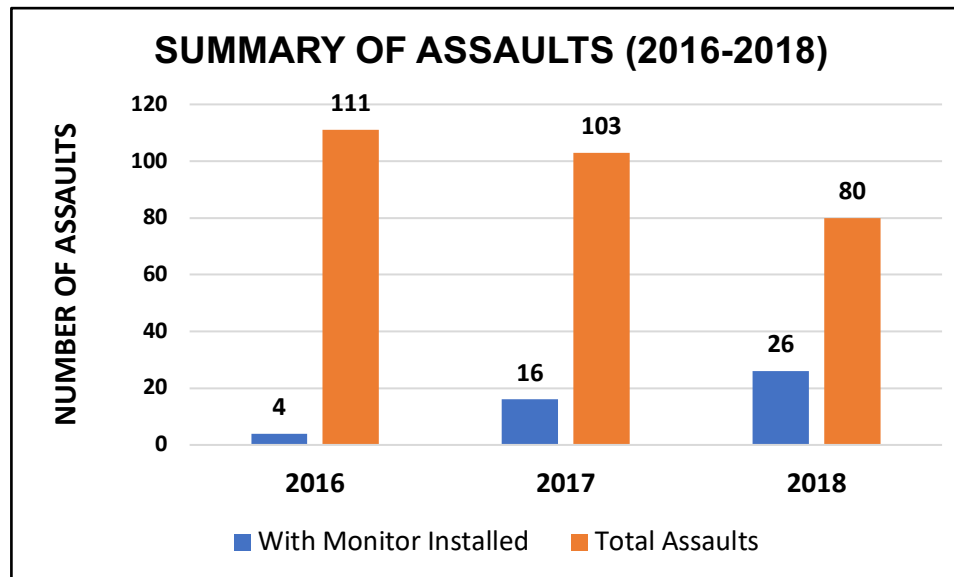
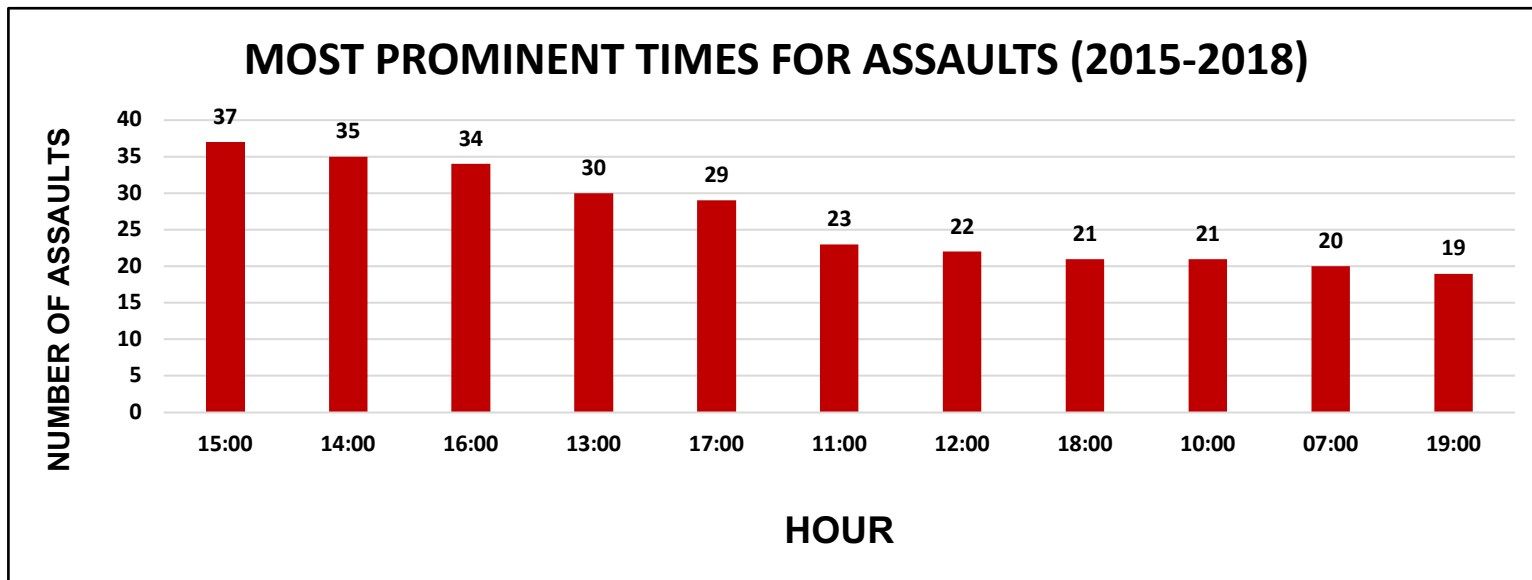
## APPENDIX A – Historical Data Analysis Charts and Graphs

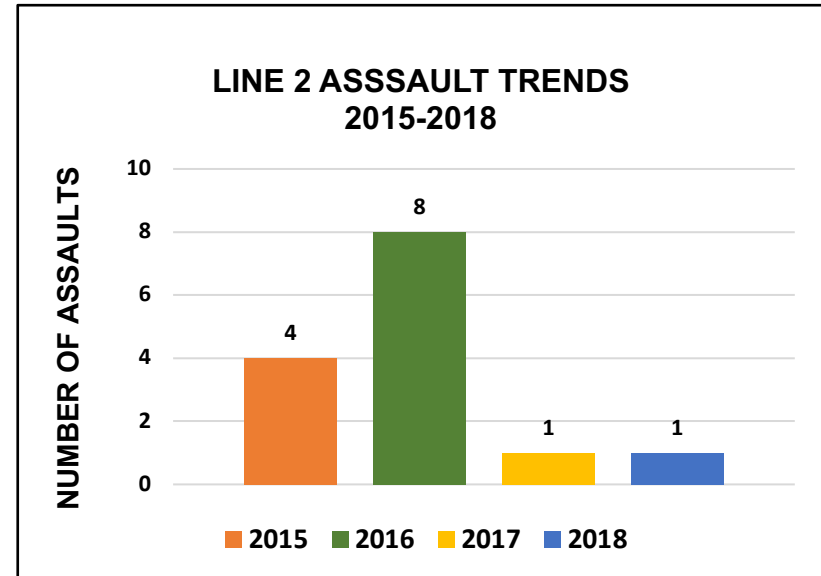
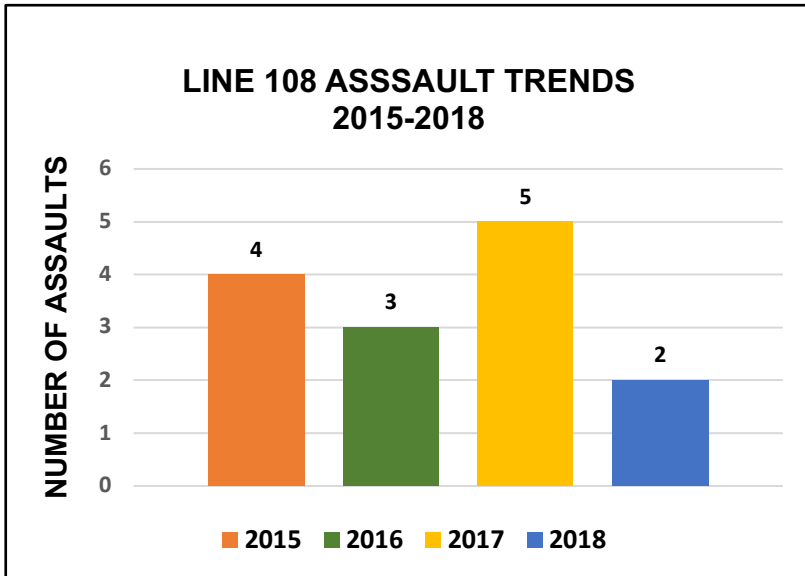
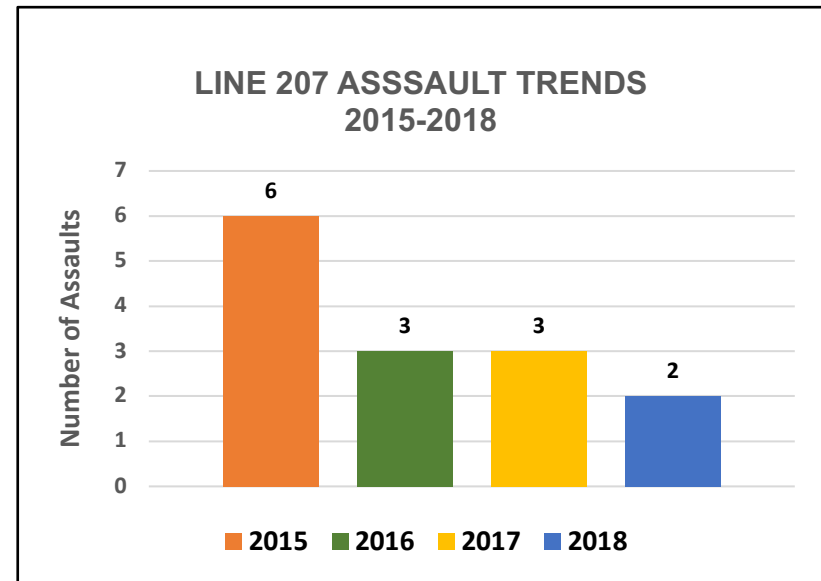
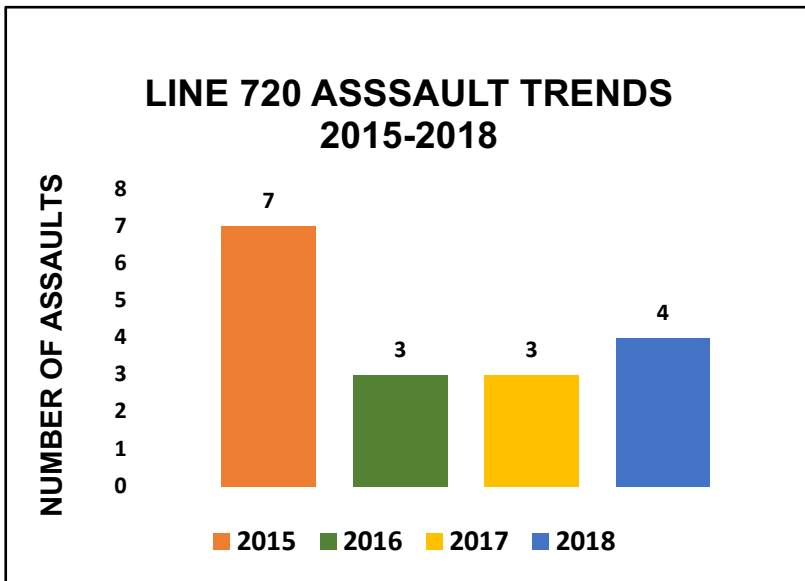
This Appendix contains the graphs and charts that were produced from analyzing the historical and assault data provided by the OIG.





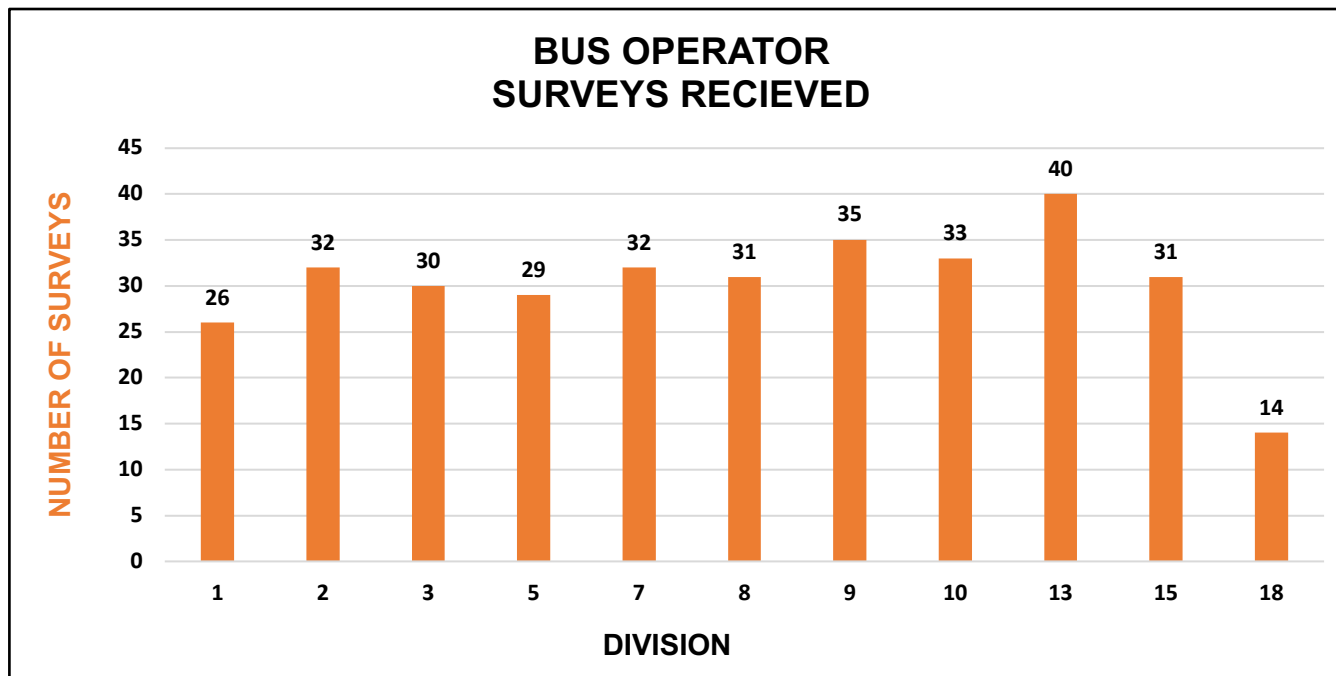






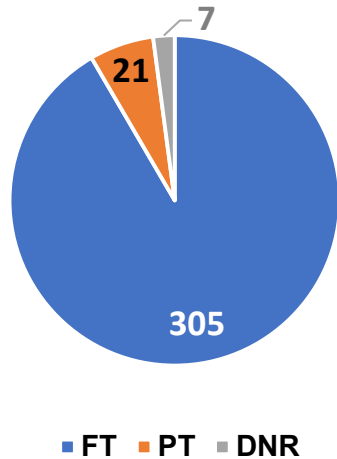
## APPENDIX B – Bus Operator Survey Analysis Charts and Graphs

This Appendix contains the graphs and charts that were produced from analyzing the data provided in the Metro Bus Operator surveys.

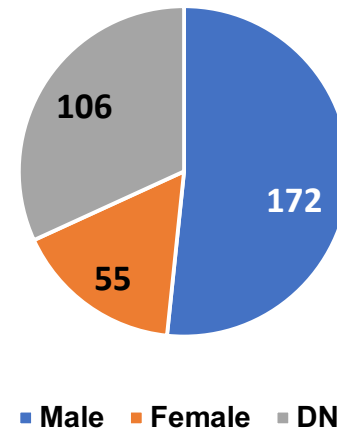




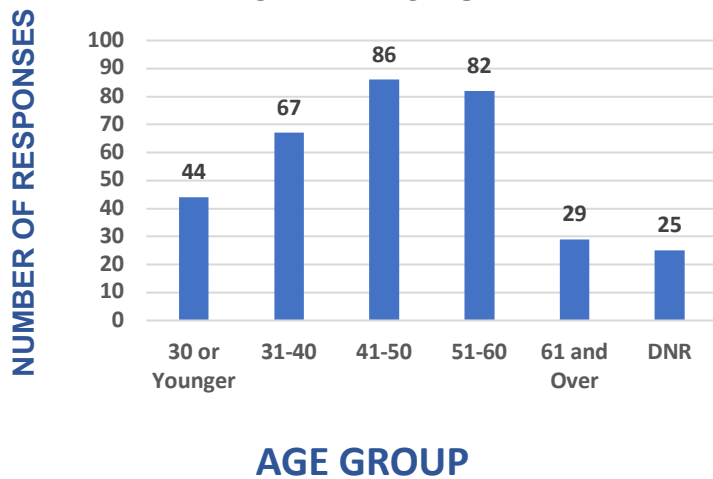
**Operator Employment Status**



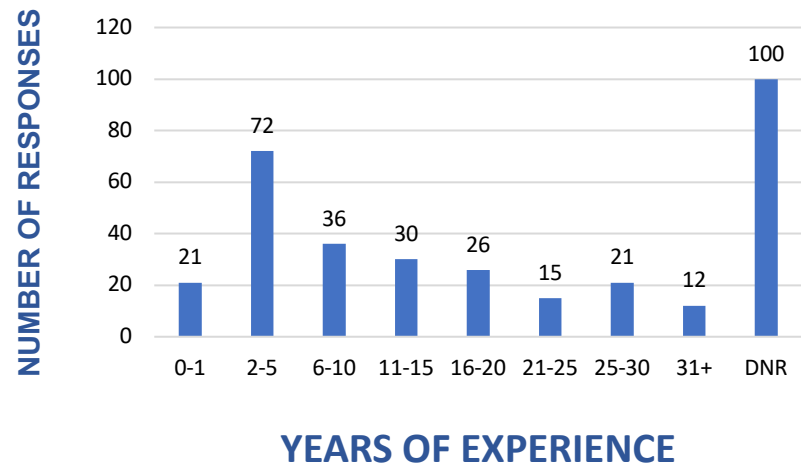
**Operator Gender**



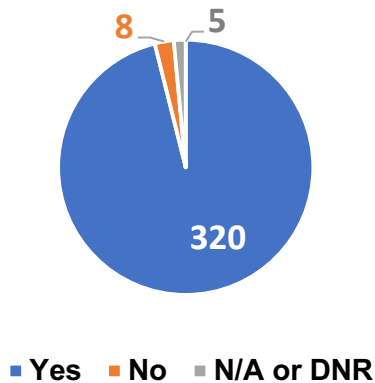
**OPERATORS**



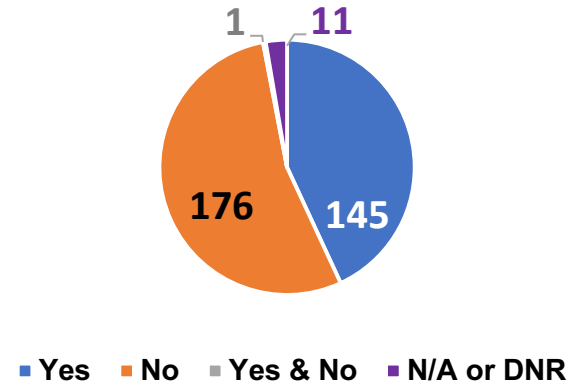
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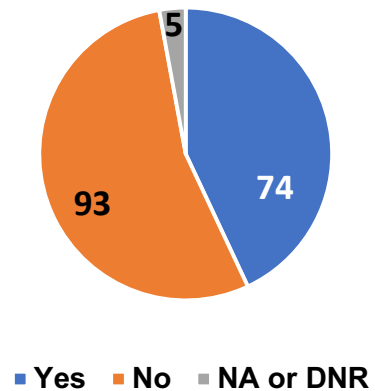
### OPERATORS Operated a Bus with Barrier Installed



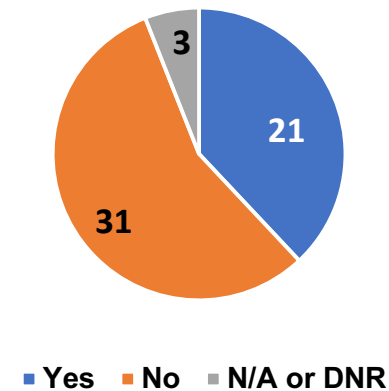
### OPERATORS Did Barrier Make You Feel More Secure

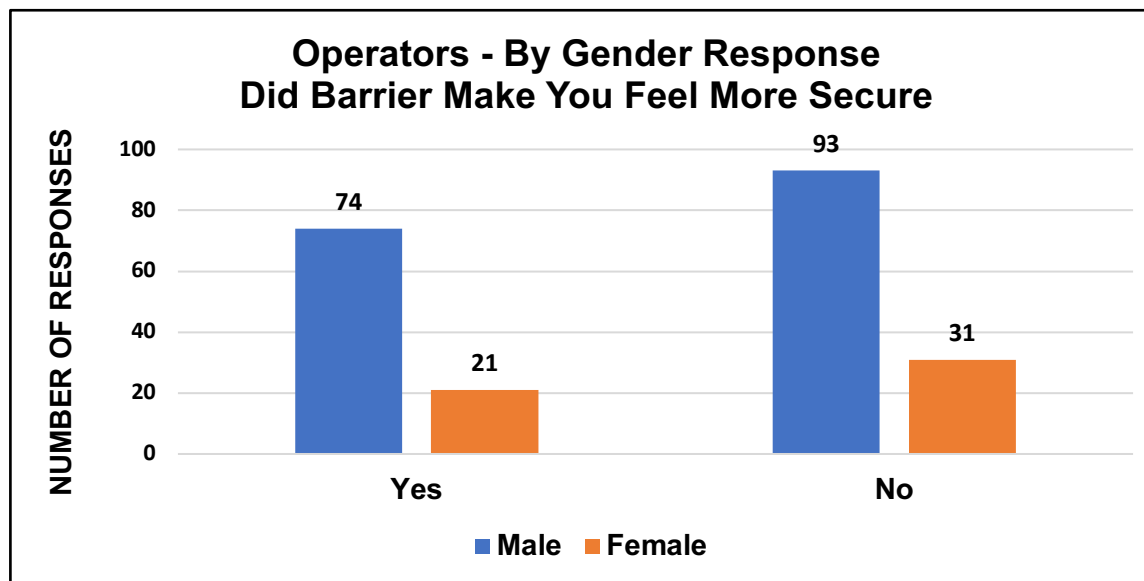
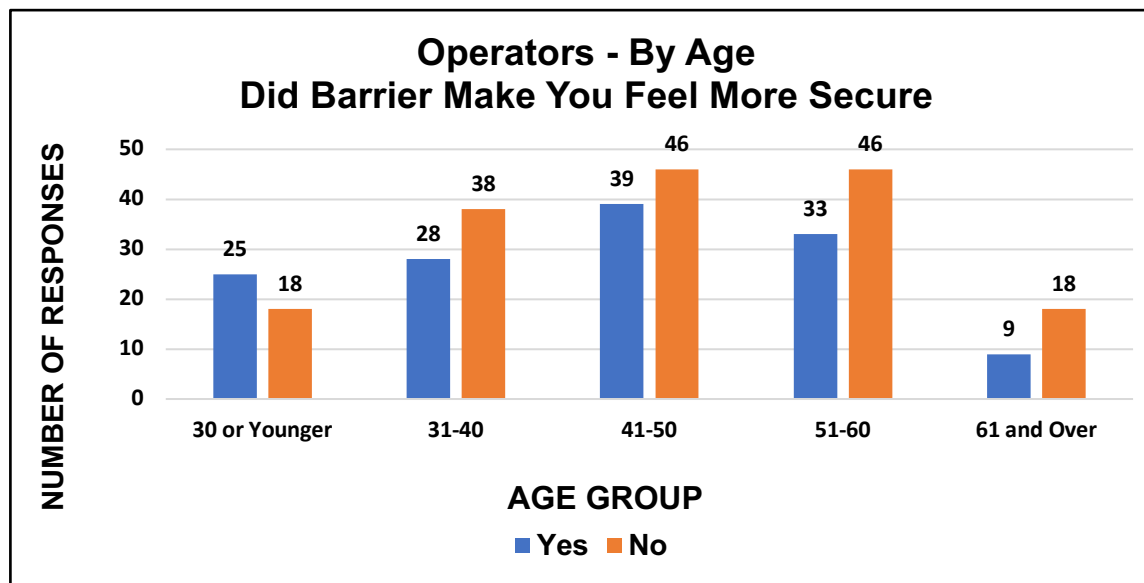


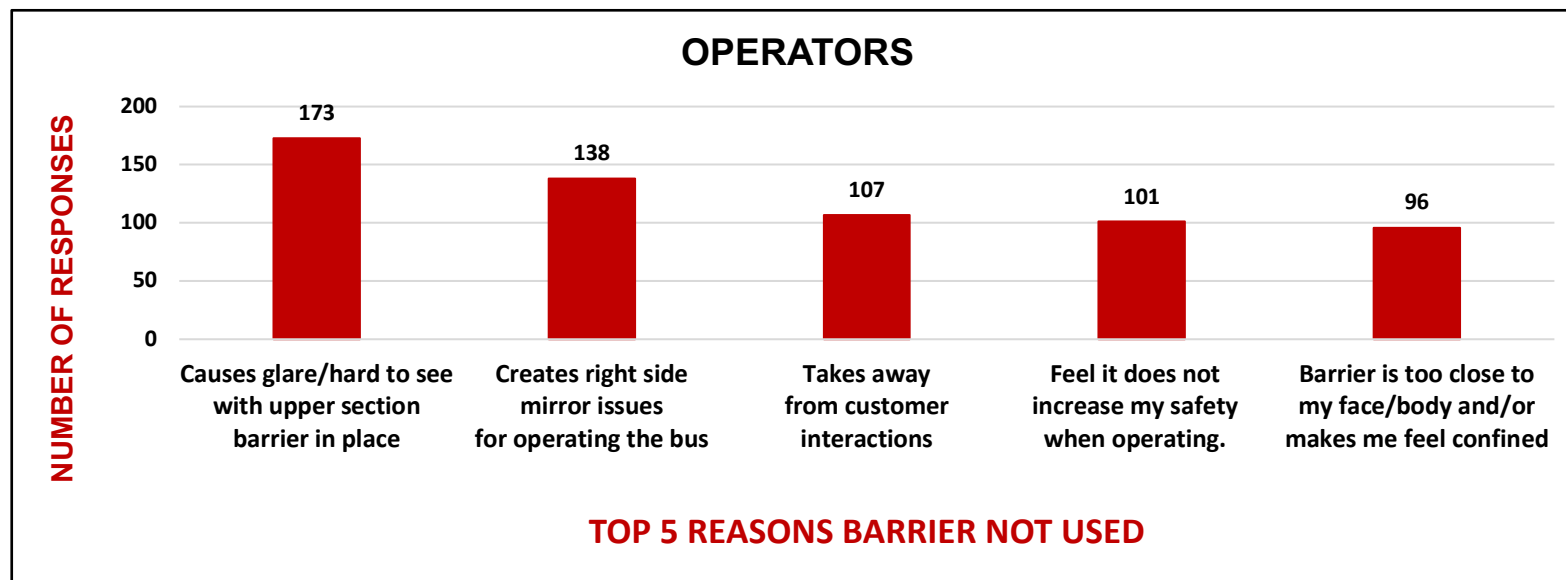
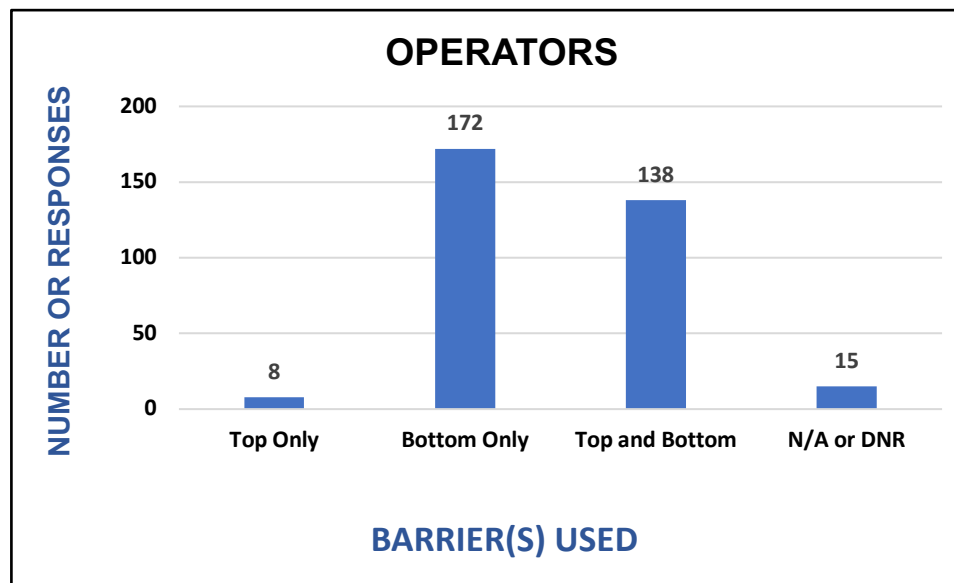
### Male Operators Felt More Secure Using Barrier

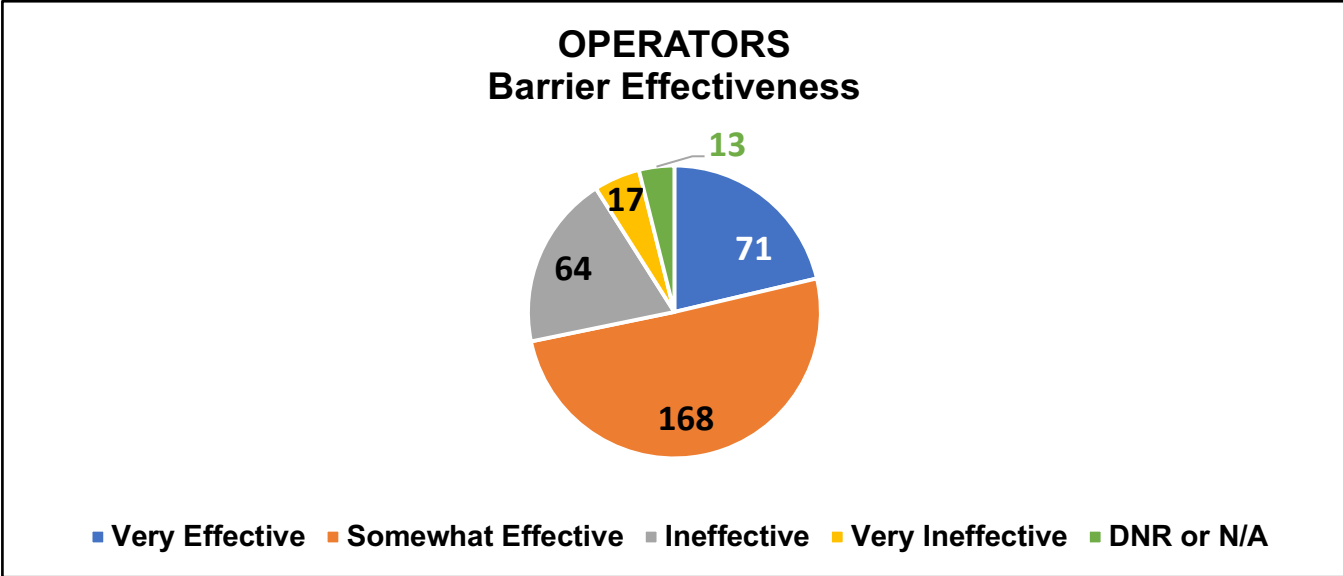
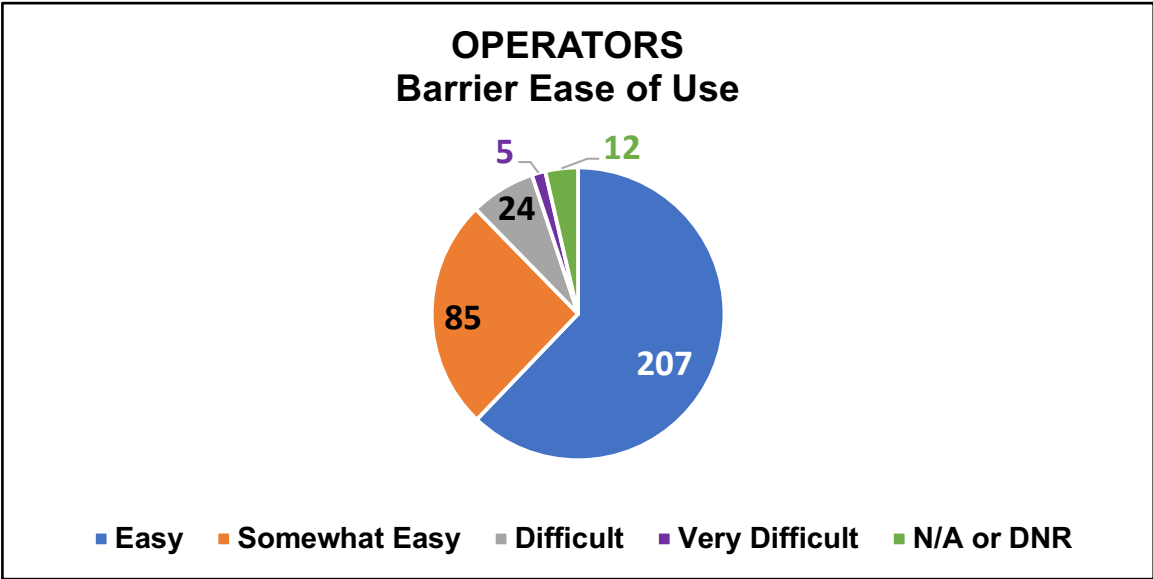


### Female Operators Felt More Secure Using Barrier

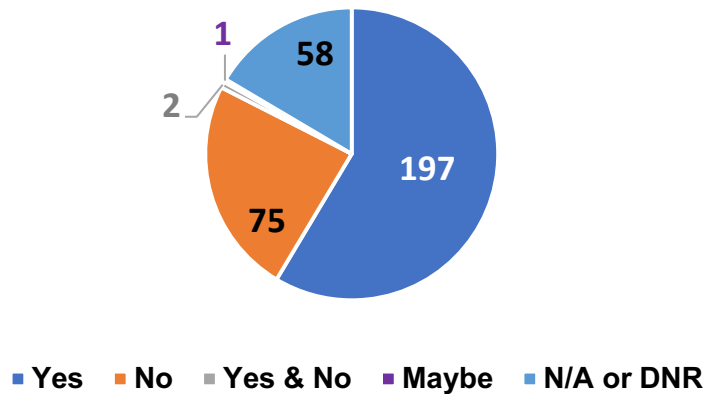




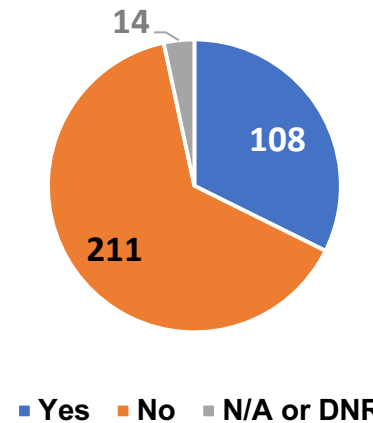




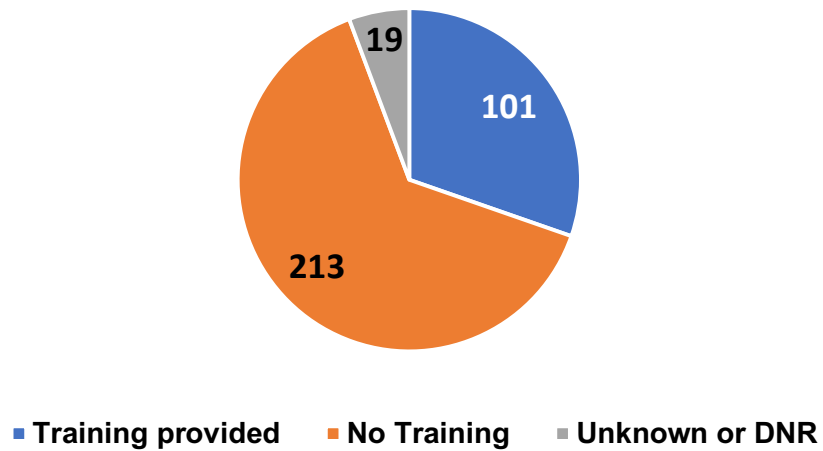
**OPERATORS - Would Addressing Issues Increase Barrier Use**

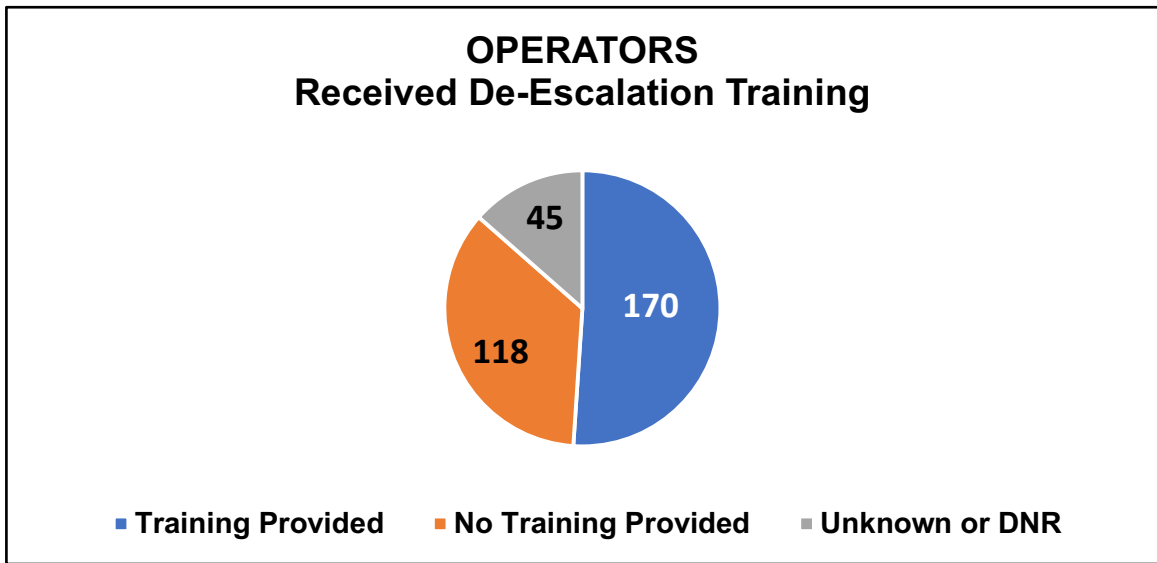
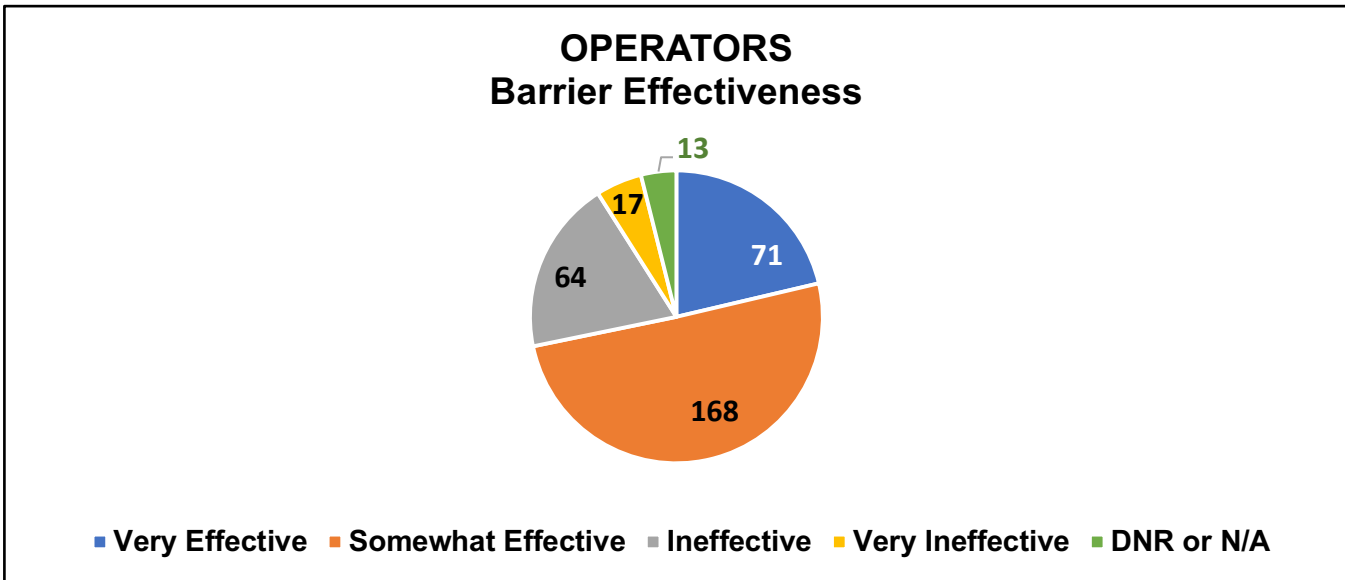


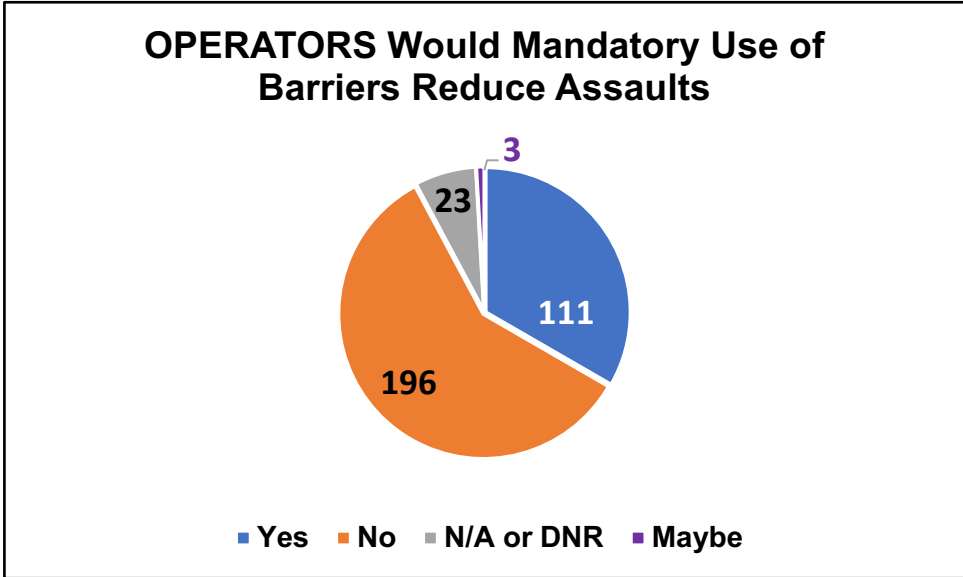
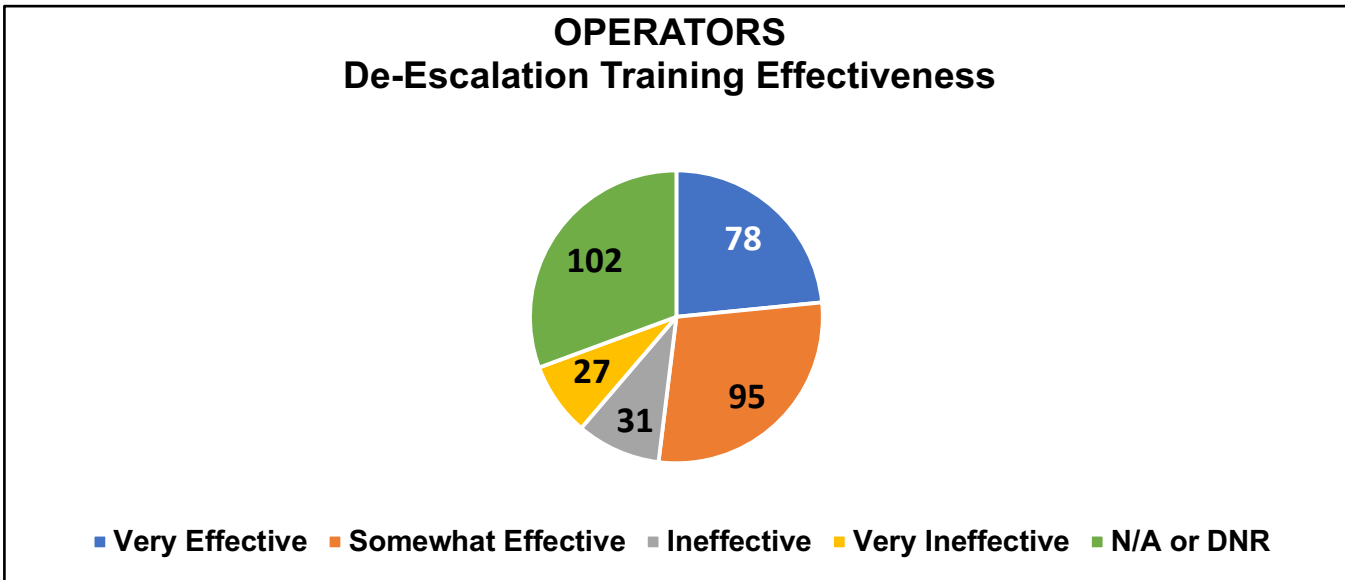
**OPERATORS Use Barrier on Certain Lines**



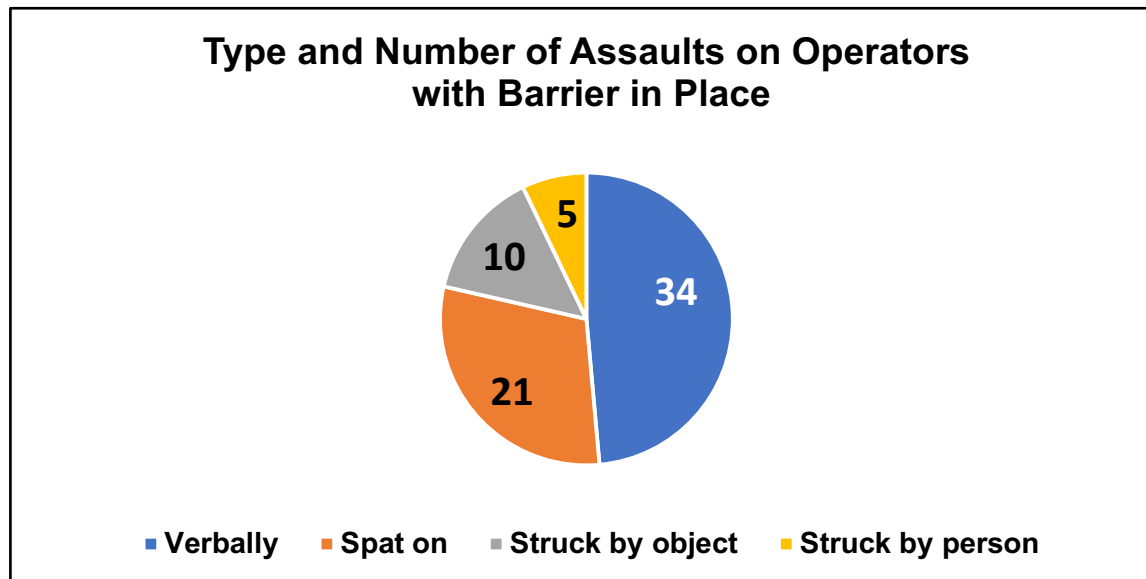
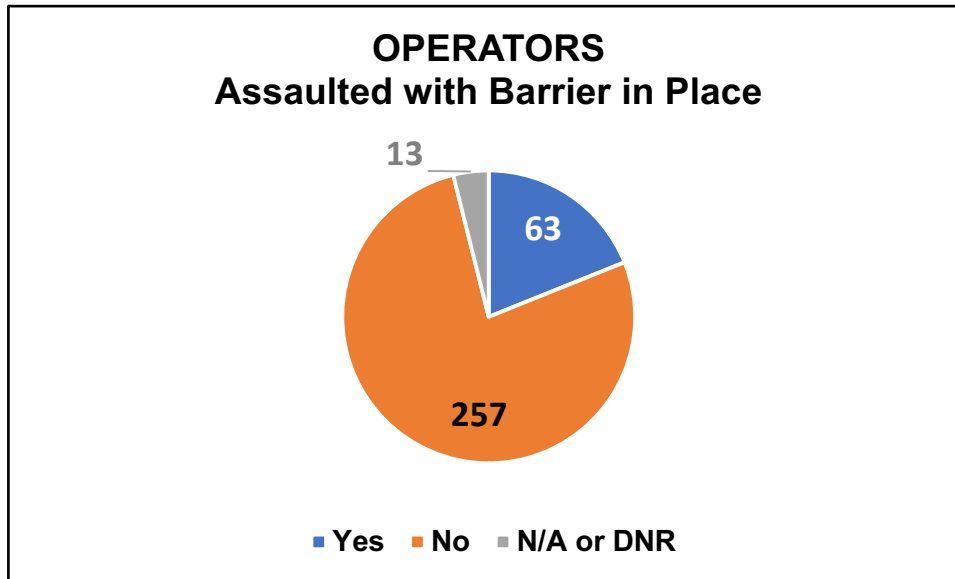
**OPERATORS Received Barrier Training**

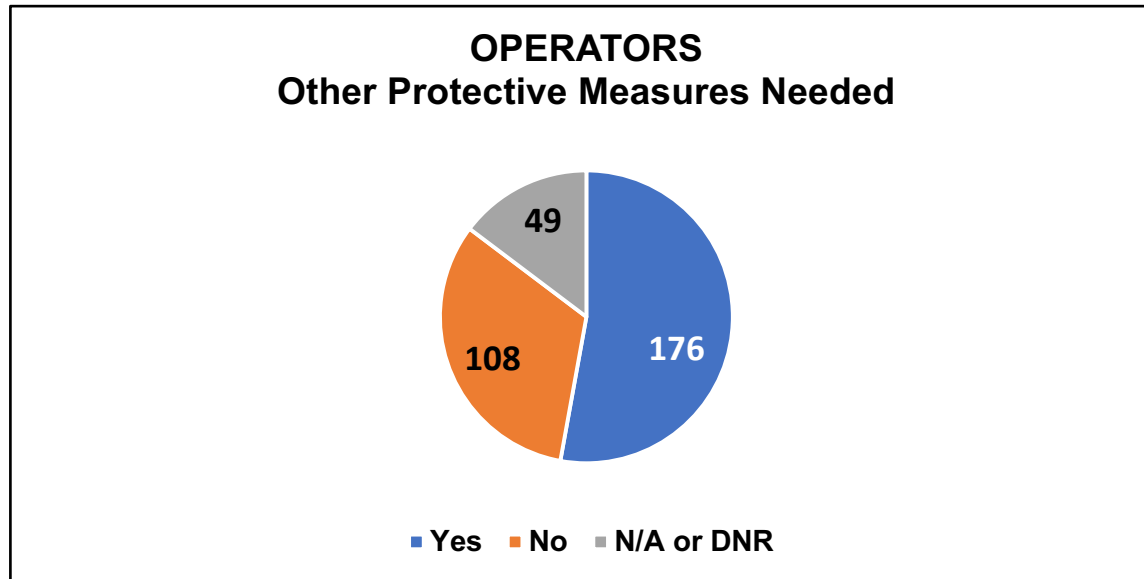






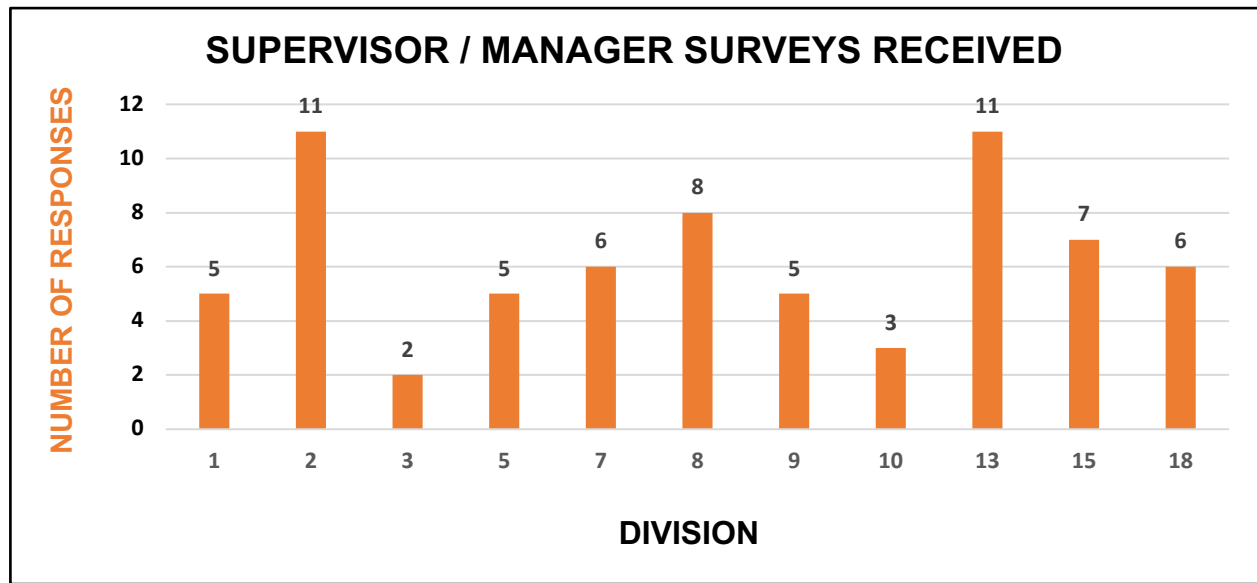




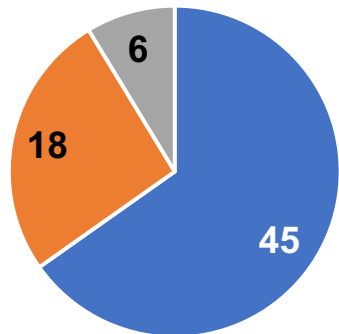


### APPENDIX C – Bus Supervisor/Manager Survey Analysis Charts and Graphs

Appendix C contains the graphs and charts that were produced from analyzing the data provided in the Metro Bus Supervisor/Manager surveys.

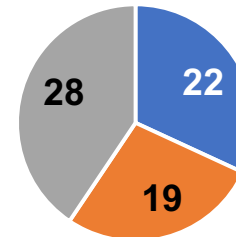


**Supervisor / Manager Titles**



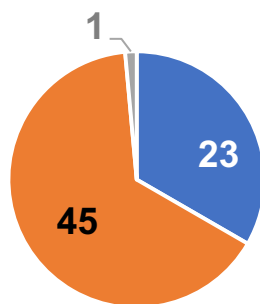
■ Supervisor ■ Manager ■ DNR

**Supervisors / Managers Gender**



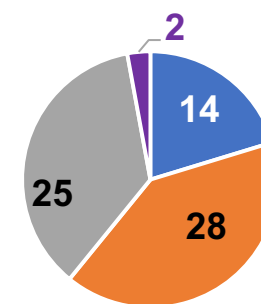
■ Male ■ Female ■ DNR

**SUPERVISORS / MANAGERS  
Operated a Bus with Barrier  
Installed**

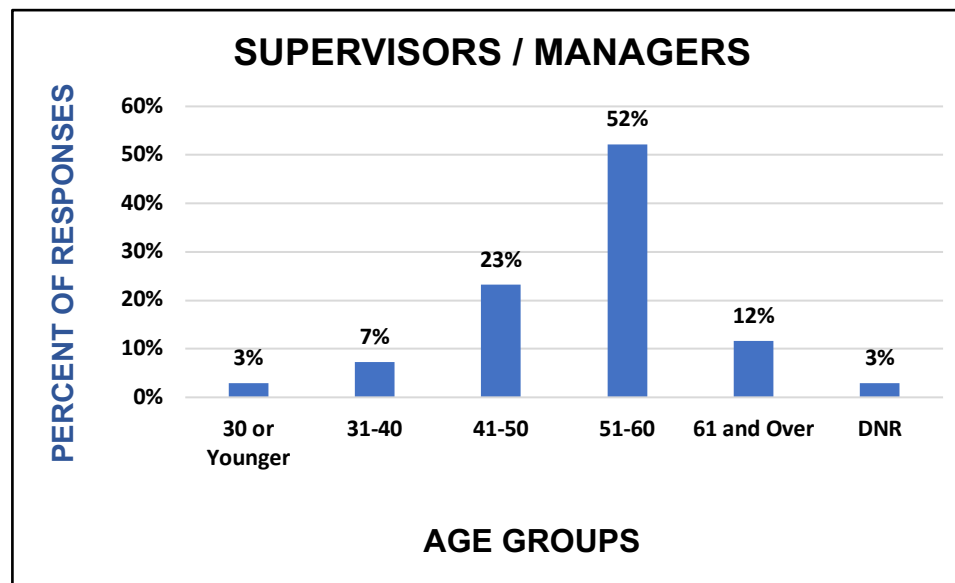


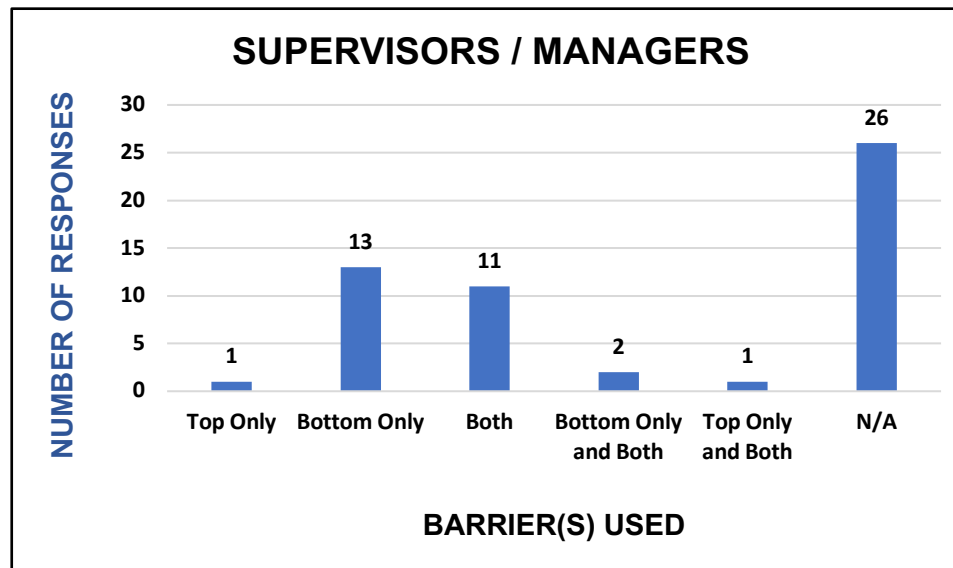
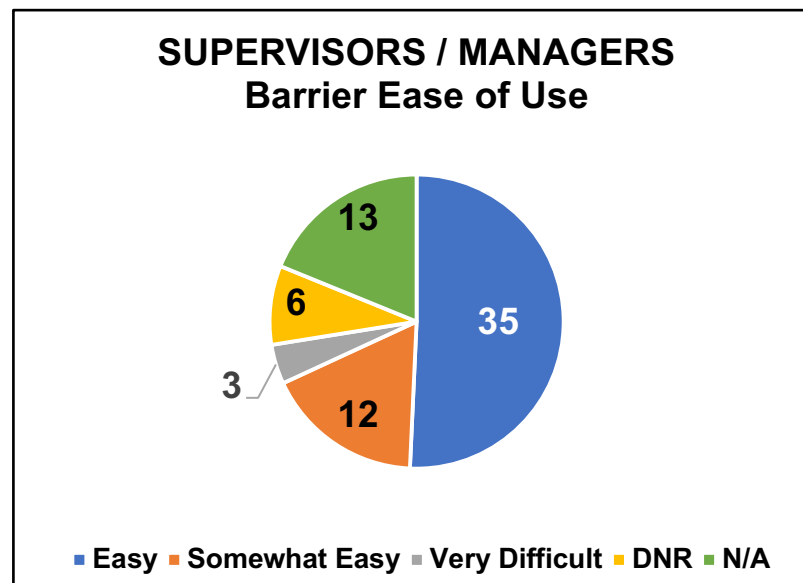
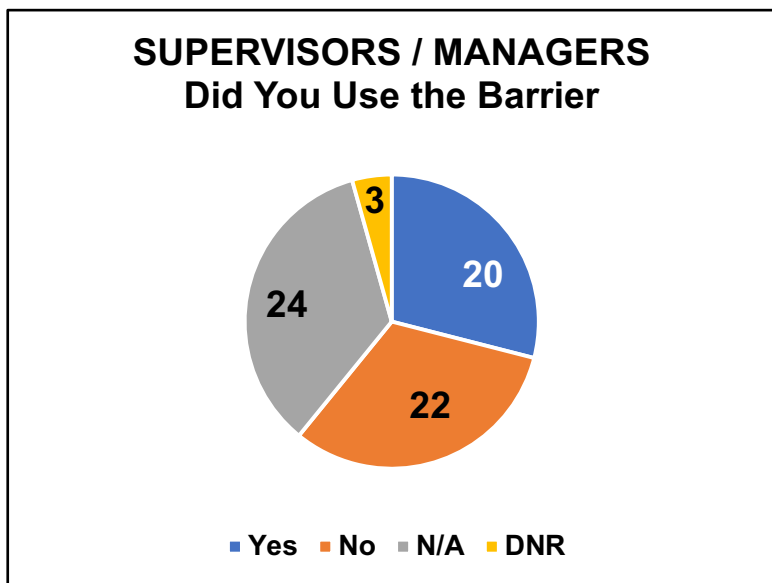
■ Yes ■ No ■ DNR

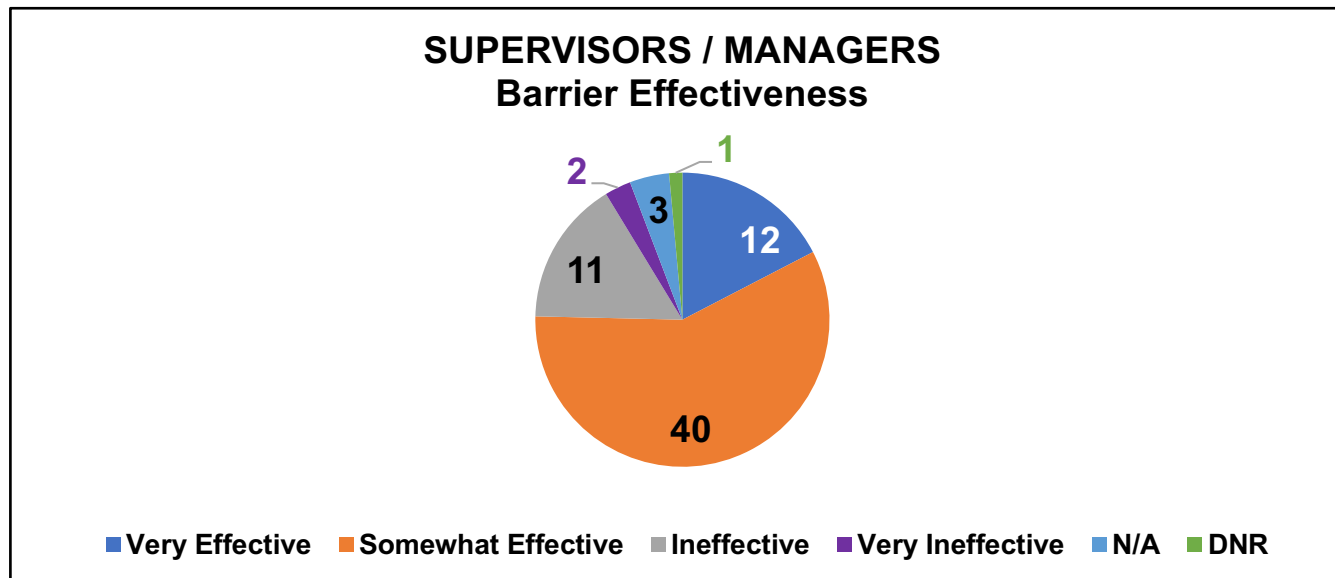
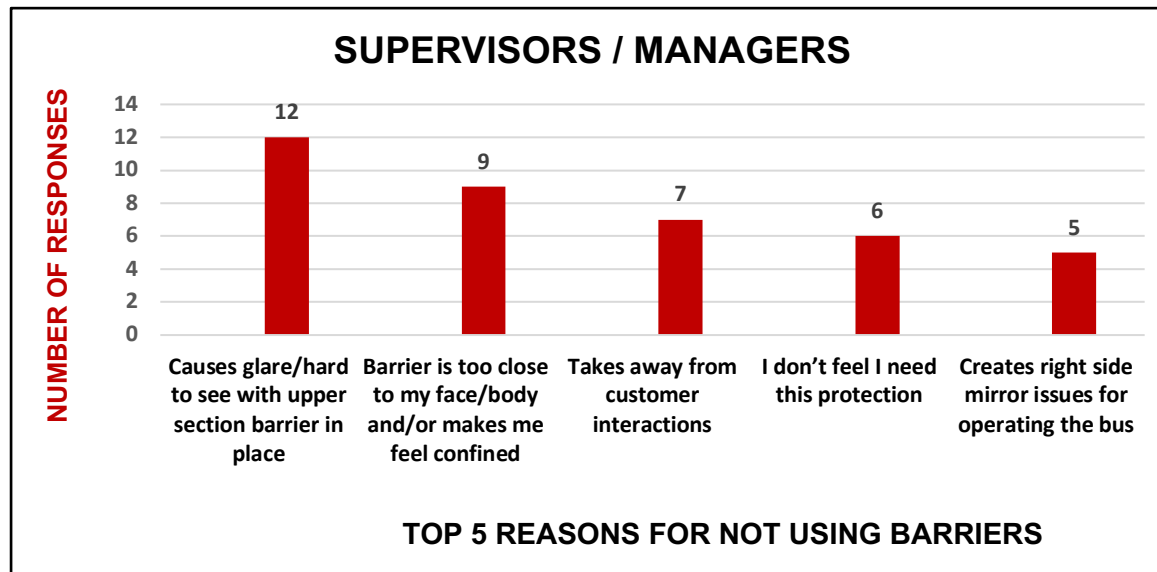
**SUPERVISORS / MANAGERS  
Did Barrier Make You Feel More  
Secure**

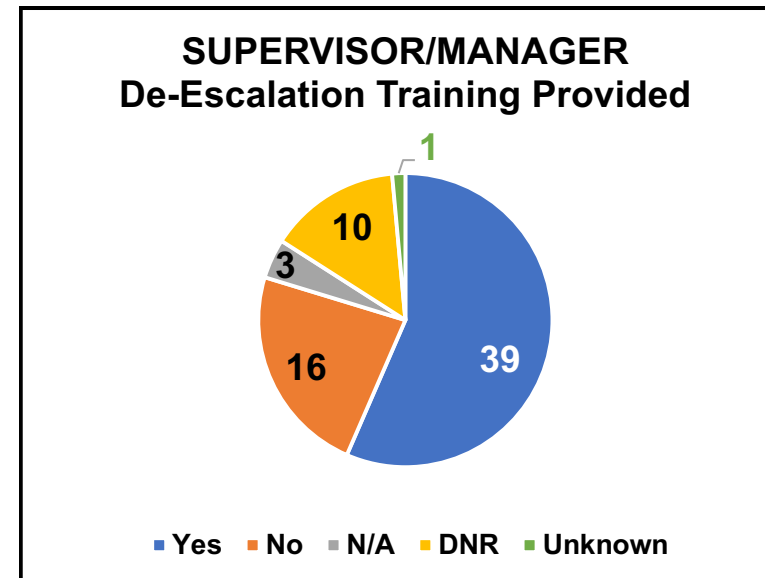
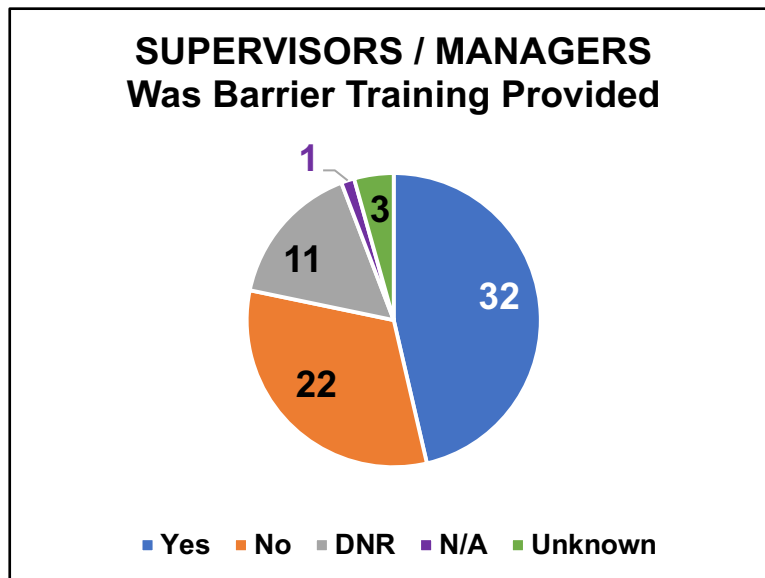
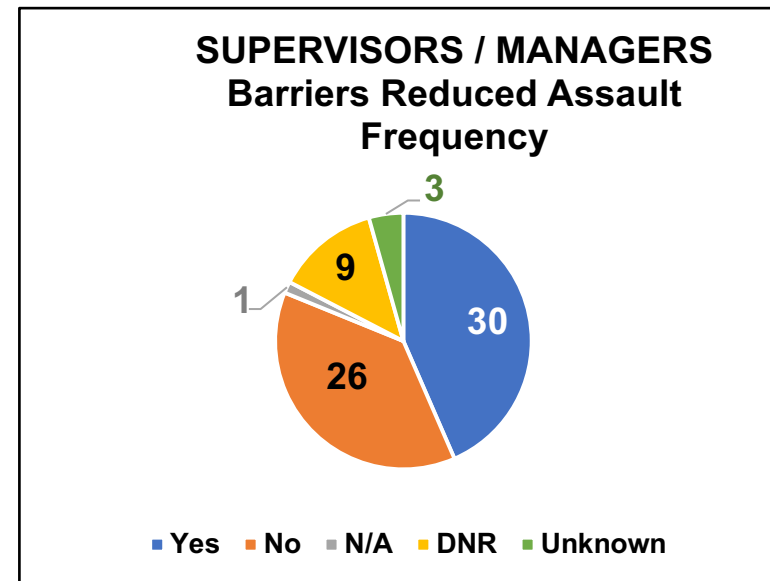
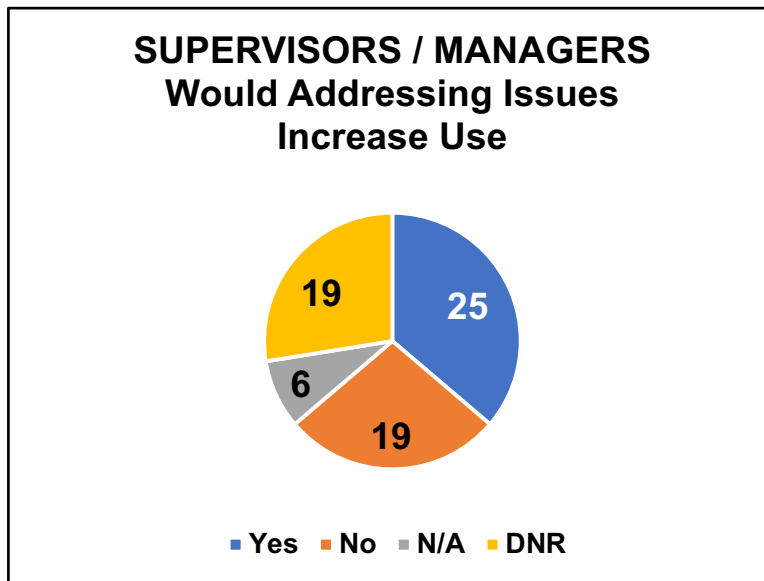


■ Yes ■ No ■ N/A ■ DNR

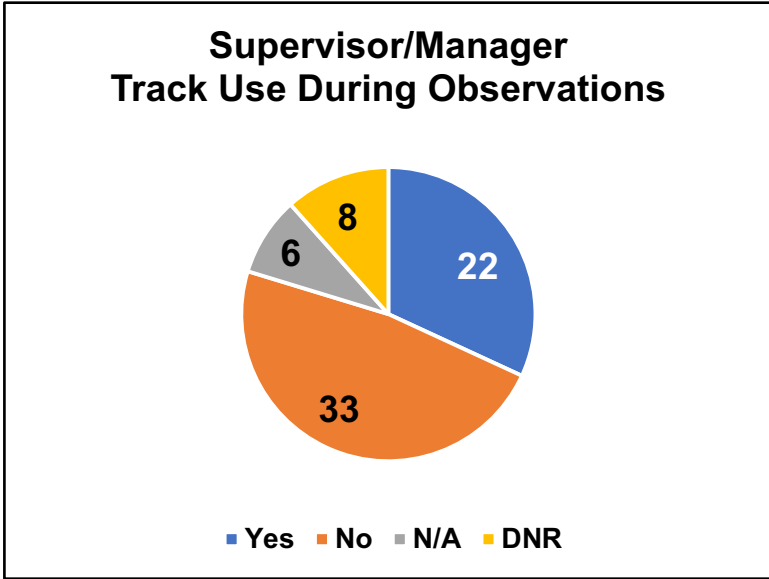
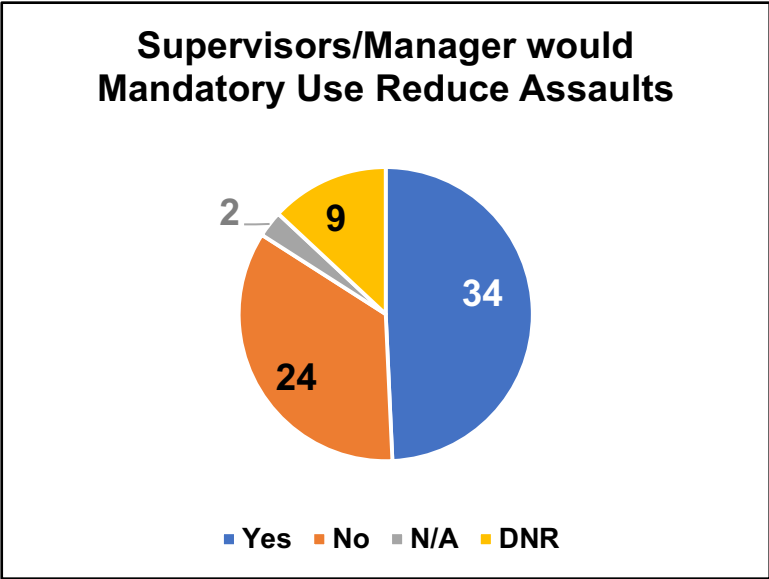
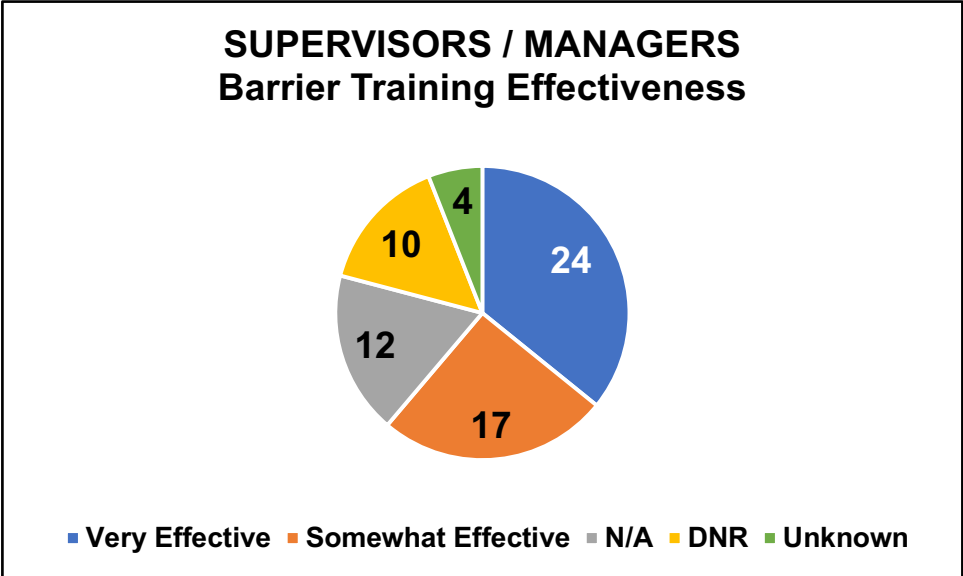


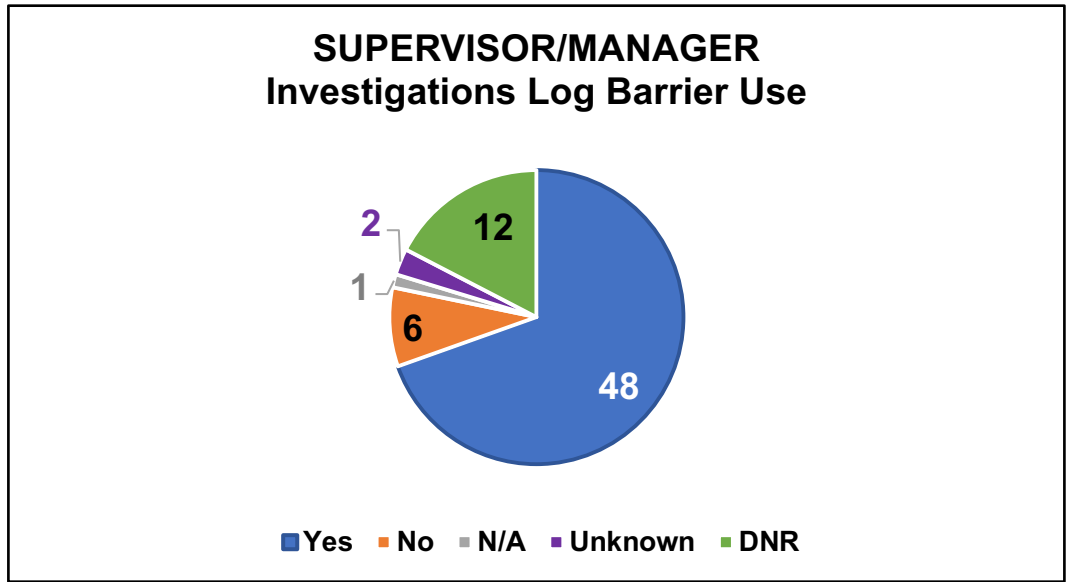
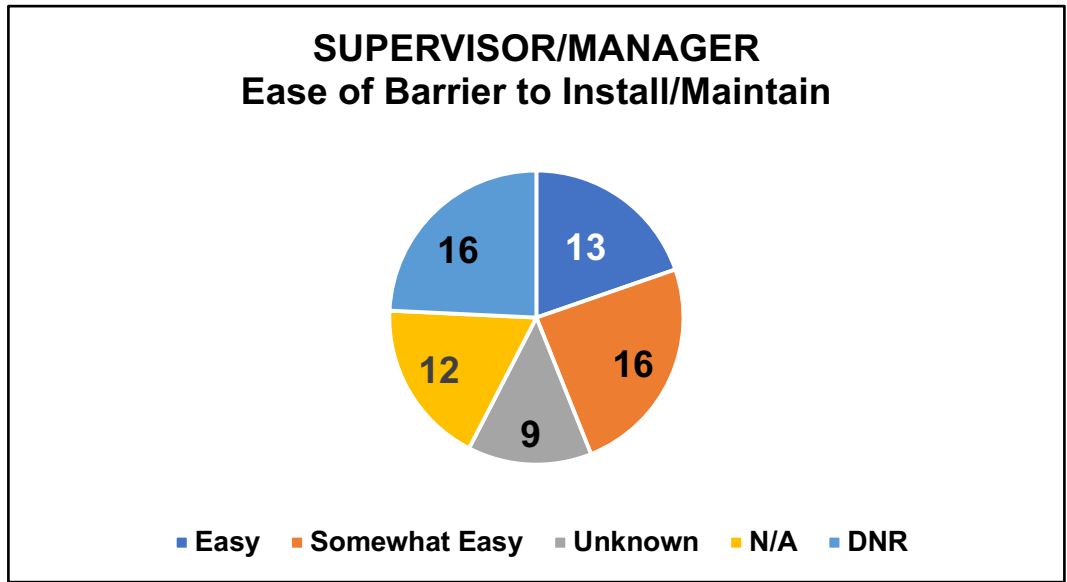


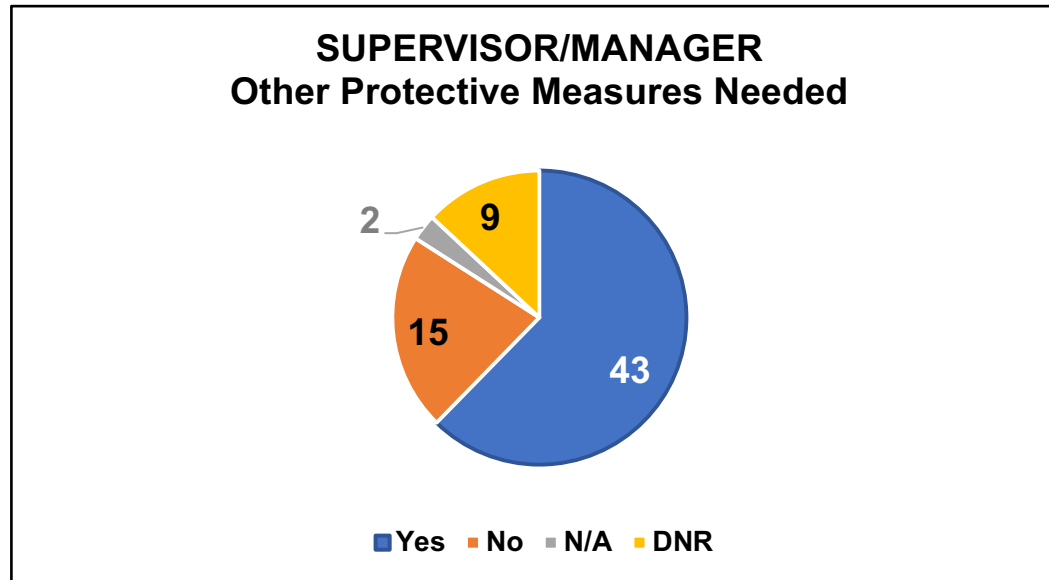






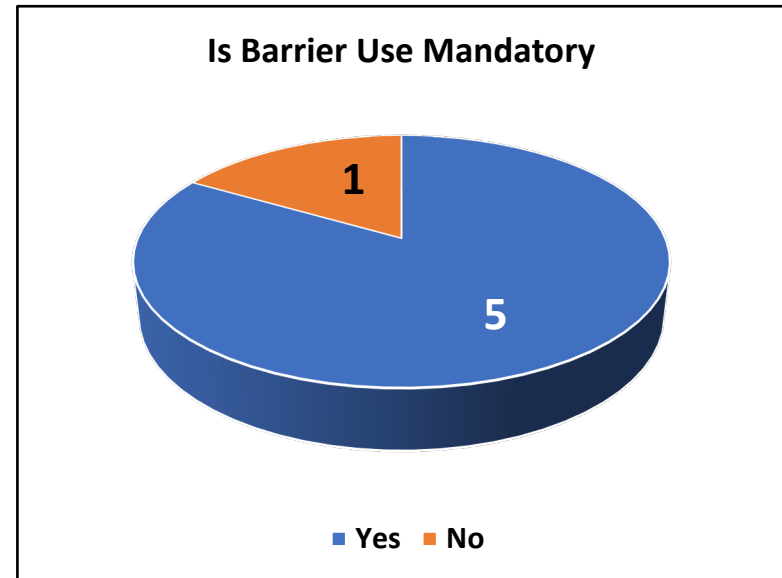
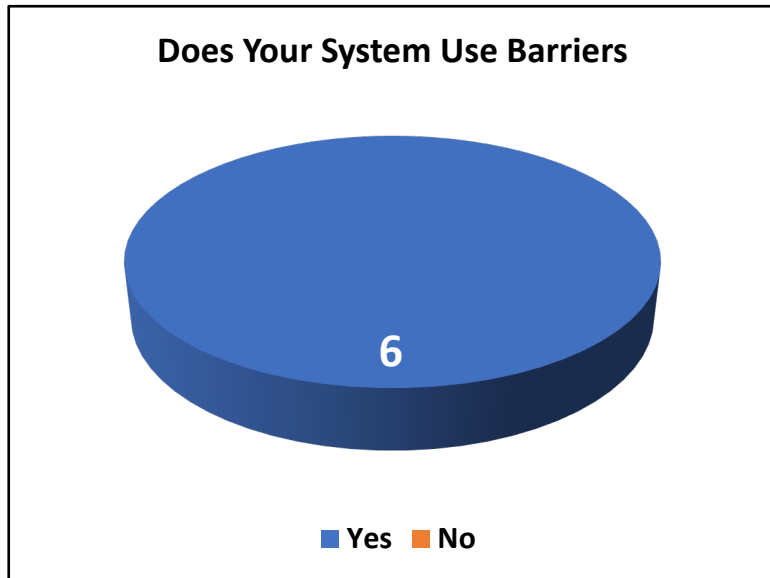


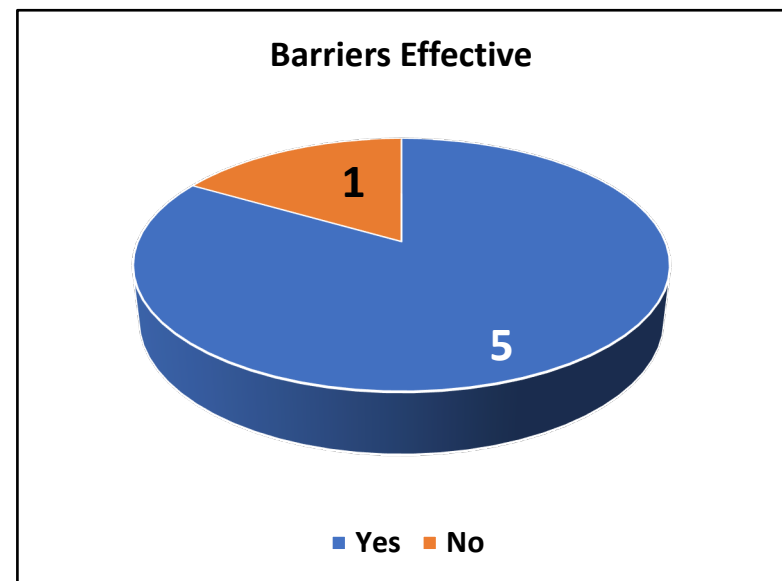
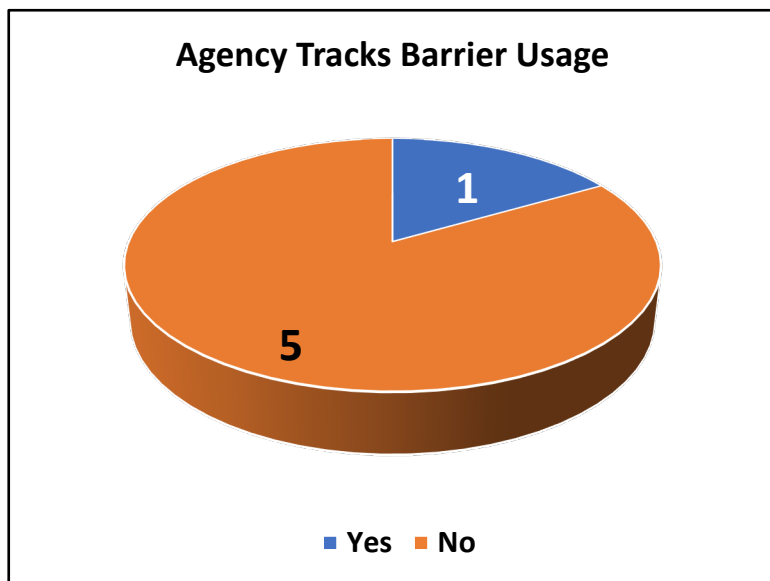
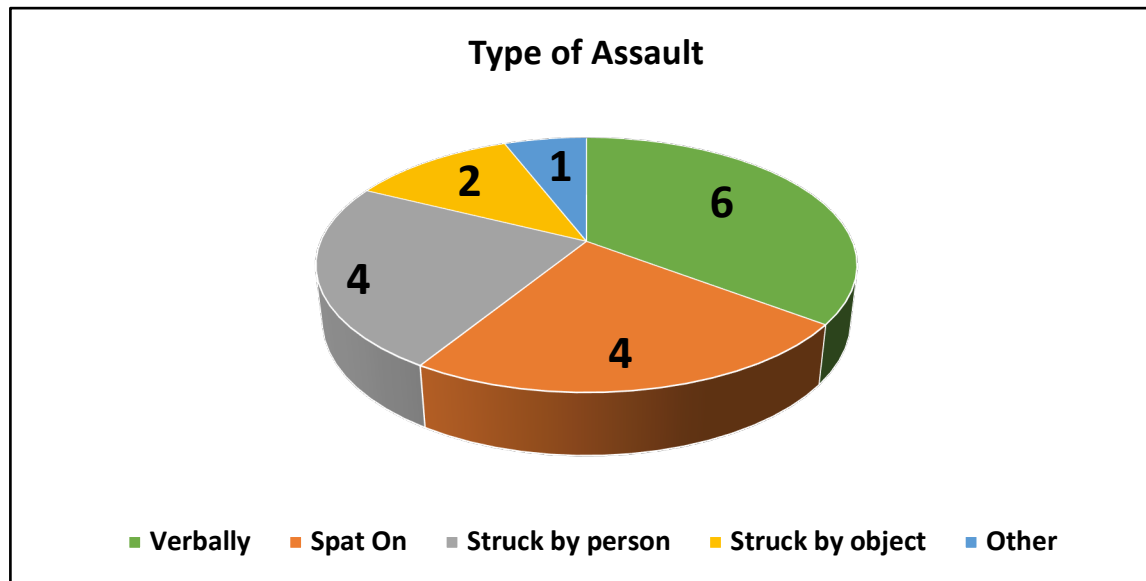




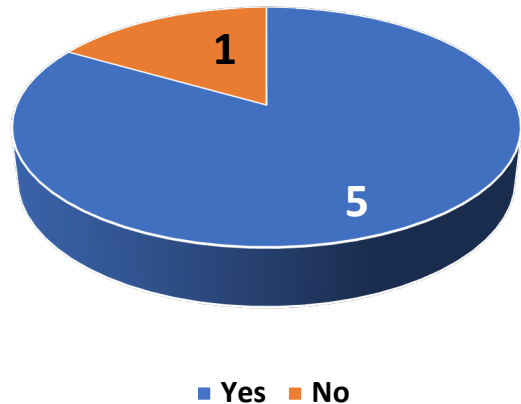
## APPENDIX D – Industry Survey Analysis Charts and Graphs

Appendix D contains the graphs and charts that were produced from analyzing the data provided in the industry surveys.

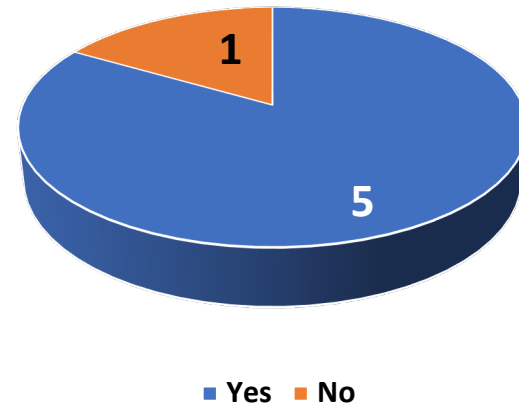




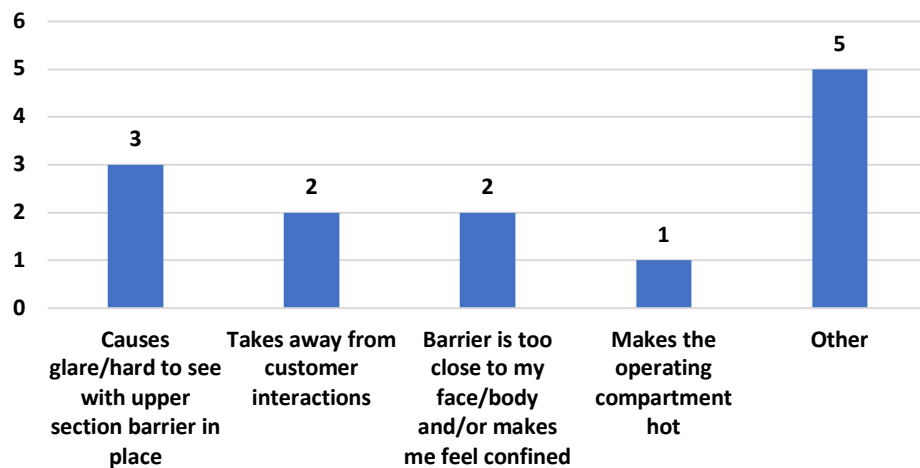
**Willing To Share Data**



**Buses Have Other Security Devices**



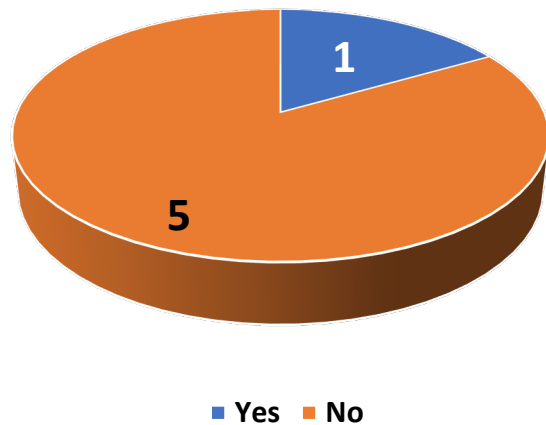
**Barrier Creates Operation Problems/Hazards**



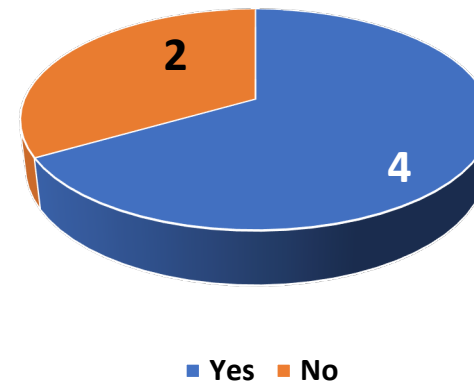
**Agency Other Operational Issues**

Agency	Other Operational Issues
<b>MBTA</b>	Due to the weight of the Safety Barrier there has been an increase in ankle injuries due to the barrier closing on operators' ankles. In addition, the latch on the door was stiff, which caused wrist injuries.
<b>WMATA</b>	Increased fumes due to restricted air flow in operator compartment
<b>NYCTA</b>	None of the above
<b>TriMet</b>	Some obstruction between operator and interior occupant mirror.
<b>MDT</b>	APTA Questionnaire provided instead of answering survey

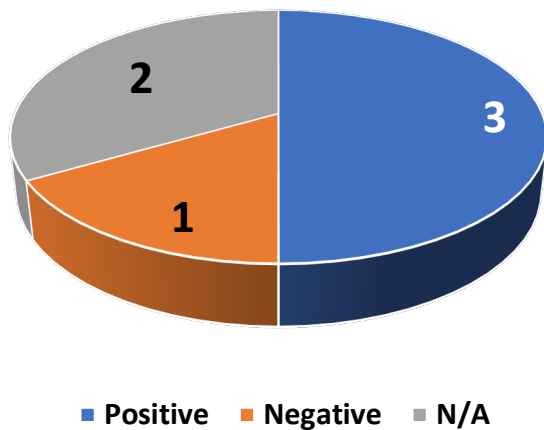
**Barriers Difficult To Install/Maintain**



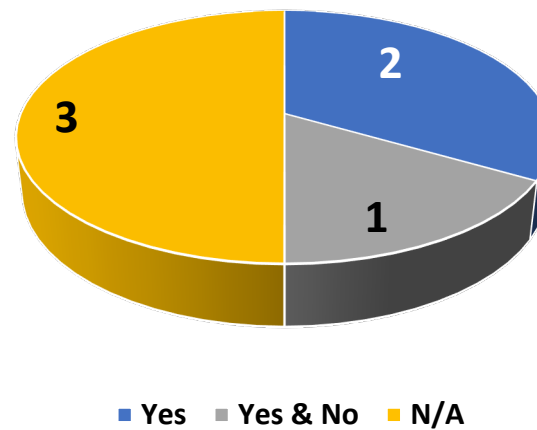
**Gathered Feedback from Operators on Barriers**

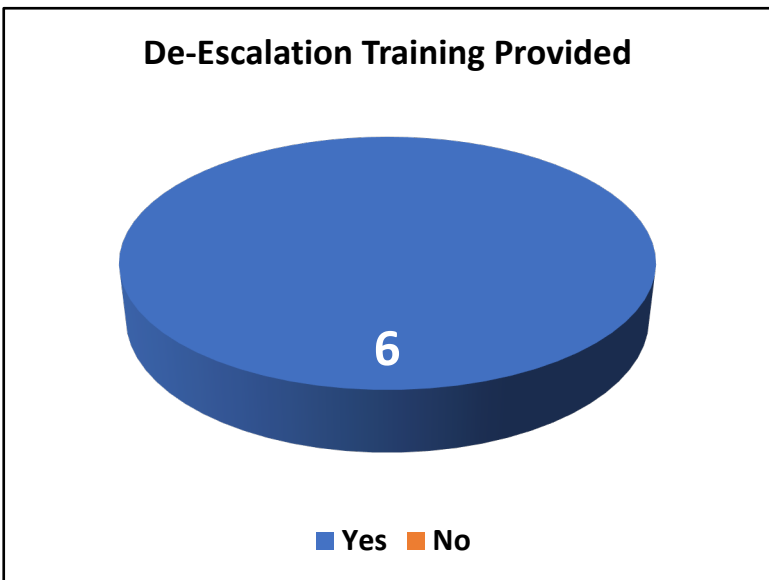
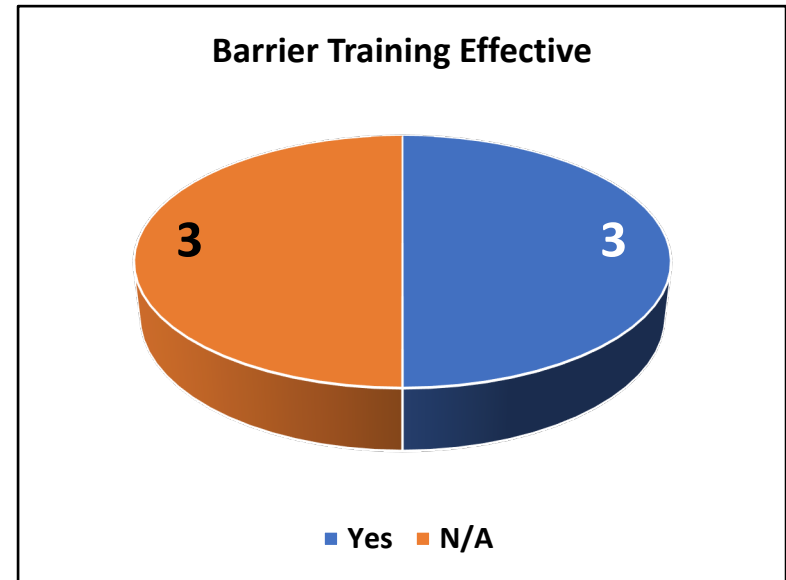
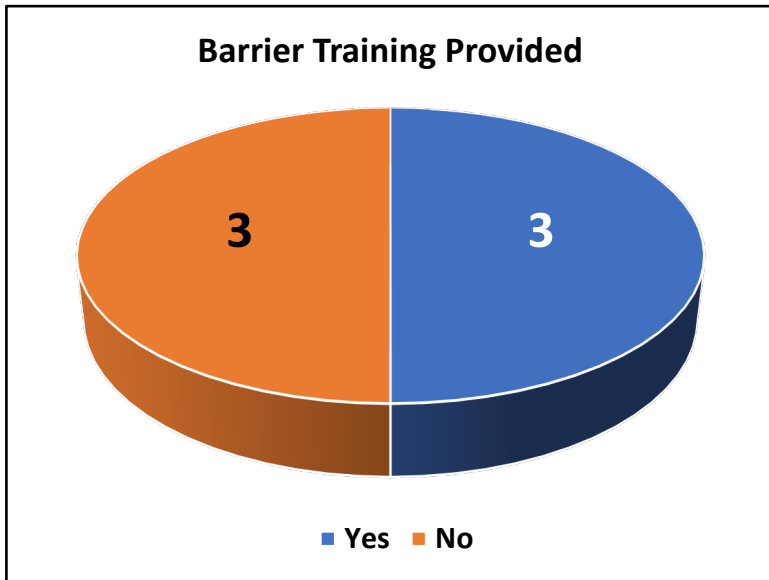


**Feedback - Positive or Negative**



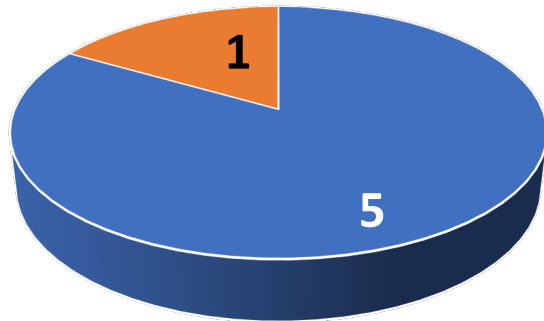
**Barrier Provides Desired Protection**





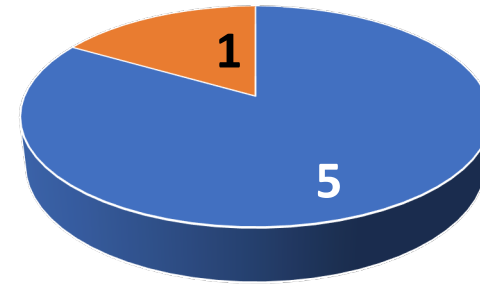


**Agency Investigate Barrier Use  
After Assault**



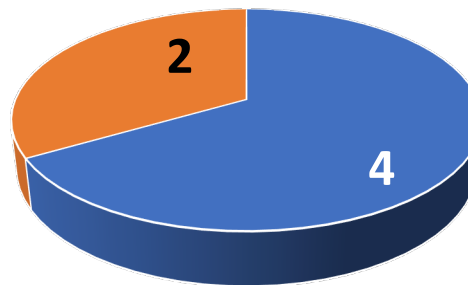
■ Yes ■ No

**Training Provided to Prevent  
Future Assaults**



■ Yes ■ No

**Willing to Share  
Cost Data**



■ Yes ■ N/A

## APPENDIX E – Bus Operator Survey

The Metro Office of the Inspector General seeks your input to complete a study of the use and effectiveness of the Bus Operator Safety Barriers Systems currently used by Metro. Your participation in the below survey is voluntary and, if you choose, anonymous.

### General Information:

Date: \_\_\_ / \_\_\_ /2019                      Badge (optional): \_\_\_\_\_

Division: \_\_\_\_\_ Line Numbers Driven: \_\_\_\_\_

Full-Time     Part-Time     Daylight Hours     Dark Hours

Male             Female

Age Group: 30 or Younger ( )    31-40 ( )    41-50 ( )    51-60 ( )    61 or Over ( )

Years of Experience: 0-1 ( )    2-5 ( )    6-10 ( )    11-15 ( )    16-20 ( )  
   21-25 ( )    25-30 ( )    31+ ( )

---

### Survey:

1. Have you operated a bus with a Bus Operator Safety Barrier installed?             Yes     No
2. Did having the Safety Barrier on the bus make you feel more secure?             Yes     No
3. Did you use any part of the Safety Barrier while operating the bus?             Yes     No
4. If yes, what section(s) did you use?  
 Top Section Only  
 Bottom Section Only  
 Bottom and Top Sections
5. If you don't use the upper barrier, why not (Check all that apply)?  
 Creates right side mirror issues for operating the bus.  
 The barrier creaks or makes noise when used.  
 Causes glare/hard to see with upper section barrier in place.  
 Takes away from customer interactions.  
 The barrier is too close to my face/body and/or makes me feel confined.  
 Feel it does not increase my safety when operating.  
 Makes the operating compartment hot.  
 I don't feel I need this protection.  
 Other, explain: \_\_\_\_\_

6. How would you characterize the Safety Barrier's ease of use?
- Easy
  - Somewhat Easy
  - Difficult
  - Very Difficult
7. If difficult or very difficult, please explain why? \_\_\_\_\_
8. How effective in improving your safety do you believe the Safety Barriers are?
- Very Effective
  - Somewhat Effective
  - Ineffective
  - Very Ineffective
9. If ineffective or very ineffective, please explain why? \_\_\_\_\_
10. Would addressing the issues you identified above increase your likelihood of you using the Safety Barriers?  Yes  No
11. If no, what other feature(s) are needed? \_\_\_\_\_
12. Do you use the barriers when operating certain lines and not others?  Yes  No
13. If yes, on what lines do you use the barriers the most? \_\_\_\_\_
14. Was training on the use of the Barriers provided prior to their installation?  Yes  No
15. In your opinion, how effective was the training?
- Very Effective
  - Somewhat Effective
  - Ineffective
  - Very Ineffective
16. If ineffective or very ineffective, please explain why? \_\_\_\_\_
17. Has de-escalation training on how to handle potentially volatile situations, such as fare disputes, been provided?  Yes  No

18. In your opinion, how effective was the training?

- Very Effective
- Somewhat Effective
- Ineffective
- Very Ineffective

19. If ineffective or very ineffective, please explain why: \_\_\_\_\_

20. Would mandatory use, instead of optional / voluntary use of the Barriers reduce the number of assaults?  Yes  No

21. If no, why? \_\_\_\_\_

22. Have you ever been assaulted with the Safety Barriers in place?  Yes  No

23. If yes, what was the type of assault?

- Spit on
- Struck by a person
- Struck by object
- Verbally
- Other, explain: \_\_\_\_\_

24. Do you believe other protective measure should be implemented to prevent/reduce assaults?  Yes  No

25. If yes, what are they? \_\_\_\_\_

26. Is there any other information you would like to share regarding the Bus Operator Safety Barriers?\_\_



6. How would you characterize the Safety Barrier's ease of use?
- Easy
  - Somewhat Easy
  - Difficult
  - Very Difficult
7. If difficult or very difficult, please explain why? \_\_\_\_\_
8. How effective do you believe the Safety Barriers are in protecting Bus Operators?
- Very Effective
  - Somewhat Effective
  - Ineffective
  - Very Ineffective
9. If ineffective or very ineffective, please explain why? \_\_\_\_\_
10. Do you believe addressing the issues you identified above would increase the likelihood of Operators using the Safety Barriers?  Yes  No
11. If no, what other feature(s) are needed: \_\_\_\_\_
12. Has the installation of the Safety Barriers reduced the frequency and/or severity of assaults on Bus Operators?  Yes  No
13. Was training on the use of the Barriers provided prior to their installation?  Yes  No
14. In your opinion, how effective was the training?
- Very Effective
  - Somewhat Effective
  - Ineffective
  - Very Ineffective
15. If ineffective or very ineffective, please explain why: \_\_\_\_\_
16. Has de-escalation training on how to handle potentially volatile situations, such as fare disputes, been provided?  Yes  No
17. How effective do you believe the training is?
- Very Effective
  - Somewhat Effective
  - Ineffective
  - Very Ineffective

18. If ineffective or very ineffective, please explain why: \_\_\_\_\_

19. Would mandatory use, instead of optional/voluntary use of the Barriers ( ) Yes ( ) No  
reduce the number of assaults on Operators?

20. If no, why? \_\_\_\_\_

21. Do you track the use of the barriers while making observations in the field? ( ) Yes ( ) No

22. If no, why? \_\_\_\_\_

23. Do investigations of assaults identify whether the Safety Barriers were ( ) Yes ( ) No  
in use when the assault took place?

24. How would you characterize how easy the Safety Barriers are to install and maintain?

- ( ) Easy
- ( ) Somewhat Easy
- ( ) Difficult
- ( ) Very Difficult

25. If difficult or very difficult to maintain, please explain why? \_\_\_\_\_

26. Is training provided to Operators following an assault to help prevent ( ) Yes ( ) No  
future assaults?

27. Do you believe other protective measure in addition to the Safety ( ) Yes ( ) No  
Barriers should be implemented to prevent/reduce assaults?

28. If yes, what are they? \_\_\_\_\_

29. Is there any other information you would like to share regarding the Bus Operator Safety Barriers?

\_\_\_\_\_

## APPENDIX G – Industry Survey

### Introduction

The Office of the Inspector General (OIG) of the Los Angeles County Metropolitan Transportation Authority (LA Metro) is completing a study to examine the use and effectiveness of Bus Operator Safety Barriers. The OIG seeks data from peer agencies as part of this study to determine the effectiveness of the barrier systems currently being used by LA Metro and to identify potential industry best practices that may be implemented by LA Metro. Your participation in the below survey is appreciated.

### Survey:

1. Agency Name: \_\_\_\_\_
2. Contact Information: \_\_\_\_\_
3. How large is your bus fleet? \_\_\_\_\_
4. How many bus operators does your agency employ? \_\_\_\_\_
5. How many bus routes does your agency operate? \_\_\_\_\_
6. What is your annual bus ridership? \_\_\_\_\_
7. Does your system use Bus Operator Safety Barriers on its transit buses?     Yes     No
8. If yes, what is the make and model of the Safety Barriers? \_\_\_\_\_
9. If yes, what percentage of buses are equipped with Safety Barriers? \_\_\_\_\_
10. Is the use of the Safety Barriers by Bus Operators mandatory?                                 Yes     No
11. If no, why? \_\_\_\_\_
12. Does your agency track Bus Operator use of the Safety Barriers?                                 Yes     No
13. If yes, what percentage of Bus Operators use the Safety Barriers? \_\_\_\_\_
14. What are the most frequent types of assaults experienced by your Bus Operators?
  - Spit on
  - Struck by a person
  - Struck by object thrown
  - Verbal altercation
  - Weapon
  - Other, explain: \_\_\_\_\_



15. Have the Safety Barriers been effective in reducing the frequency and/or severity of assaults against Bus Operators?  Yes  No

16. If yes, how much have assaults been reduced? \_\_\_\_\_

17. If no, please explain: \_\_\_\_\_

18. Would you be willing to share your incident data with LA Metro?  Yes  No

19. To the best of your knowledge, has the use of the Safety Barriers caused operational problems / hazards for your Bus Operators (Check all that apply)?

- Creates right side mirror issues for operating the bus.
- The barrier creaks or makes noise when used.
- Causes glare/hard to see with upper section barrier in place.
- Takes away from customer interactions.
- Barrier is too close to my face/body and/or makes you feel confined.
- Feel it does not increase my safety when operating.
- Makes the operating compartment hot.
- I don't feel I need this protection.
- Other, explain: \_\_\_\_\_

20. Are your buses equipped with any other security / protective systems designed to reduce the occurrence of assaults on Bus Operators?  Yes  No

21. If yes, what are they? \_\_\_\_\_

22. To your knowledge, are the Safety Barriers difficult to install or maintain?  Yes  No

23. If yes, why? \_\_\_\_\_

24. Has your agency gathered feedback from Bus Operators regarding the effectiveness of the Safety Barriers and their use?  Yes  No

25. If yes, has the feedback been positive or negative?  Positive  Negative

26. If negative, what are the Bus Operators most frequent complaints regarding the Safety Barriers? \_\_\_\_\_

27. Does the design of the barrier provide the protection needed, whether Bus Operators choose to use the Safety Barrier or not?  Yes  No

28. If yes, has the training been effective?  Yes  No

29. Has de-escalation training on how to handle potentially volatile situations such as fare disputes been provided?  Yes  No

30. If yes, has the training been effective in helping Operators to deal with volatile situations: ( ) Yes ( ) No

31. Does your agency determine during its investigations of bus operator assaults whether or not the barriers were in place while the assault took place? ( ) Yes ( ) No

32. Is training provided to the Operator following an assault to help prevent future assaults? ( ) Yes ( ) No

33. What has been identified as being the most effective means of reducing assaults on operators at your agency? \_\_\_\_\_

34. Are the costs incurred to procure, install and maintain the Safety Barrier systems greater or less than those incurred as a result of assaults on bus operators? \_\_\_\_\_

35. Would your agency be willing to share its cost data related to the Bus Operator Safety Barriers? ( ) Yes ( ) No

36. Is there any other information you would like to share regarding your agency's use of the Bus Operator Safety Barriers? \_\_\_\_\_

**APPENDIX H – Schedule of Recommendations**

	<b>Recommendations</b>	<b>Metro Response</b>
<b>1</b>	<b>Continue Installation Program</b>	
	a. Metro should continue to install the bus operator safety barriers and onboard camera and monitor systems throughout its bus fleet and continue to monitor incident data to further verify the effectiveness of both systems in preventing assaults on bus operators.	
<b>2</b>	<b>Standardize and Enhance Data Collection Methods</b>	
	a. Metro should ensure data collection is standardized by Metro and all transit security providers and investigators to consistently identify the types of assaults that have occurred, if the bus was equipped with a safety barrier, if the barrier was in use at the time of the assault, and if in use, how it was being used (i.e., top portion only, bottom portion only, or both portions). Standardizing the data in this manner will result in more accurate and consistent data that can be more easily analyzed to identify trends and to measure performance.  b. Metro should ensure data is collected on the type and extent of injuries incurred by bus operators when the safety barriers are in use. This will further aid in determining the effectiveness of the safety barriers (i.e., if bus operator injuries are lessened as a result of the barriers being used) and if design changes or modifications are necessary.	
<b>3</b>	<b>Utilize Data Analysis to Set Policing Strategy</b>	
	a. Metro should ensure that assault trend analysis results are used to review current policing and fare enforcement strategies to determine if law enforcement, Supervisors, and fare enforcement personnel and strategies are being appropriately deployed toward the routes and times of day in most need of a Police, Supervisory, or fare enforcement presence.	
<b>4</b>	<b>Issue Mandatory Usage Policy</b>	
	a. Although the safety barriers may present operational hazards such as glare, Metro should make the use of the barriers mandatory until Metro can determine if their use contributes to or causes accidents or increases accident frequency. Mandatory use of the barriers is the best way to evaluate their true effectiveness in reducing assaults on bus operators.  b. If the use of the barriers is made mandatory, Metro should collect data to substantiate and study the issues identified by operators as to why they do not use the barriers. Metro can then take corrective action, such as design changes and modifications to the barriers, if accident/incident data substantiate operator concerns.	


	<b>Recommendations</b>	<b>Metro Response</b>
<b>5</b>	<b>Establish Communication Channels for Follow Up and Discussion of Bus Barrier Issues</b>	
	<ul style="list-style-type: none"> <li>a. Metro should further study why bus operators feel the bus safety barriers do not provide the protection needed to make them feel more secure and the other measures bus operators would like to see implemented.</li> <li>b. Evaluate the current design of the safety barriers to determine if bus operators’ concerns can be addressed through design changes and modifications made to the safety barriers.</li> <li>c. Create a committee comprised of bus operators, Supervisors and Managers, Safety Department, and Bus Operations and Bus Maintenance personnel to investigate these issues and to determine appropriate mitigations. The focus of the committee should include an effort to increase barrier use, identify ways to make the barriers more effective, and evaluate training, and improve data collection and accuracy. Metro could also consider utilizing an existing committee to take on this action, if one has already been established for investigating possible safety issues with systems and equipment.</li> </ul>	
<b>6</b>	<b>Expand Scope of Training</b>	
	<ul style="list-style-type: none"> <li>a. Metro should review safety barrier and de-escalation training to evaluate scope of attendees, frequency, content, method of delivery, consistency of delivery, and employee engagement and understanding. Results from these evaluations should be used to modify training programs as necessary.</li> <li>b. Consider adding both training classes as part of the new hire training course and periodic refresher training for current operators along with any other ongoing training requirements.</li> </ul>	
<b>7</b>	<b>Continue Strengthening Preventative Measures to Combat Operator Assaults</b>	
	<ul style="list-style-type: none"> <li>a. Metro should continue to follow its current strategies and implement its current programs to prevent assaults on bus operators. These programs are consistent with industry best practices.</li> <li>b. Consider using some of the evaluation tools developed by TCRP to identify in more detail where its greatest risks reside and employ tactics such as targeted fare enforcement and policing patrols to address problem areas using existing resources.</li> </ul>	



**Metro**

## Interoffice Memo

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Date	April 30, 2019
To	Karen Gorman Inspector General
From	James T. Gallagher  Chief Operations Officer
Subject	Management Response to the Bus Operator Safety Barrier Use and Effectiveness Study – Report 19-AUD-08

---

Operations Management has received and reviewed the Bus Operator Safety Barrier Use and Effectiveness Study Report issued by the Office of Inspector General on April 22, 2019. The report includes a total of 7 recommendations listed below based on the results of the OIG's data analysis, survey results, and industry research.

**Recommendations:**

- 1) Continue the safety barrier and camera installation program.
- 2) Standardize and enhance data collection to consistently identify the types of assaults that have occurred, if the bus was equipped with a safety barrier, if the barrier was in use at the time of the assault and how it was being used.
- 3) Consider utilizing assault data analysis to set policing strategy.
- 4) Consider making the use of bus barriers mandatory.
- 5) Establish communication channels for follow-up and discussion of bus barrier issues.
- 6) Consider expanding the scope of safety barrier and de-escalation training and adding more classes.
- 7) Continue strengthening preventive measures to combat operator assaults.

The Operations, Risk, Safety & Asset Management, Security and Law Enforcement, and Human Capital Departments will begin the process to implement change recommendations over the next 6 months. Staff will provide regular updates to the OIG as recommendations are addressed and/or closed out.

CC: Phillip Washington, Metro Chief Executive Officer  
Metro Board of Directors  
Alex Wiggins, Chief System Security & Law Enforcement Officer  
Joanne Peterson, Chief Human Capital & Development Officer  
Vijay Khawani, Interim Risk, Safety & Asset Management Officer  
Bob Holland, EO, Bus Transportation  
Alex DiNuzzo, EO, Bus Maintenance  
Diane Corral-Lopez, EO, Operations Administration  
Nancy Alberto-Saravia, Sr. Manager, Transportation Planning

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# **Bus Operator Safety Barrier Use and Effectiveness Study**

**Presented by  
Karen Gorman, Inspector General  
And  
ADS System Safety Consulting**

**Operations, Safety, and Customer Experience  
Committee**

**May 16, 2019**



**Metro**

# Purpose of Study

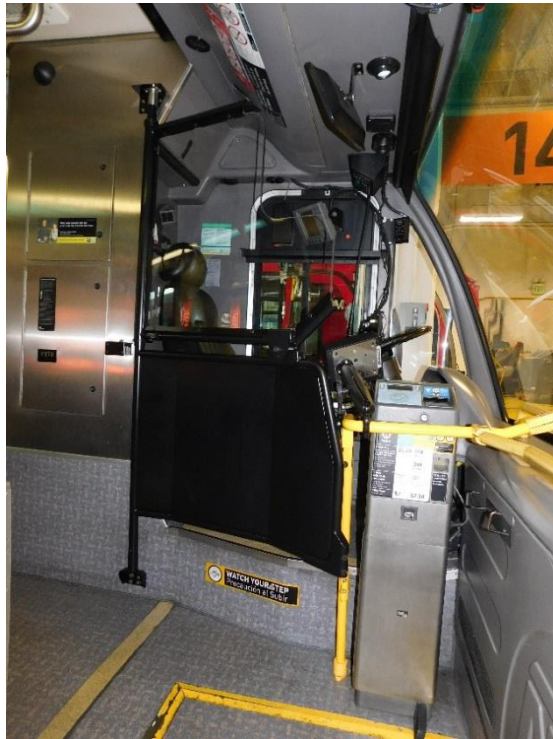
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Legistar File #  
2019-0232

- Evaluate effectiveness of barrier in reducing assaults
- Determine operator use of barriers and reasons for non-use
- Compare to industry best practices
- Survey operators on use and perceptions of enhanced security
- Identify opportunities for improvement

# Bus Safety Barrier

Legistar File #  
2019-0232





# Background

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- Assaults on operators are an on-going problem
- Metro began installing barriers in 2015
- Compared assault statistics from 2010 to 2018, before and after barriers installed
- Surveyed 6 other transit agencies for best practices
- OIG made field observations of operators' use of barriers



# Key Findings

Legistar File #  
2019-0232

- Safety barriers and onboard cameras deter assaults
- Metro is not always collecting data on barriers during assaults
- Assaults occur more frequently for certain lines and times
- Operators not consistently using barriers due to glare, obstruction to interaction and access to mirrors
- Many believe additional protective measures are needed
- Barriers and de-escalation training could be improved
- Metro's actions to prevent assaults consistent with other transit agencies

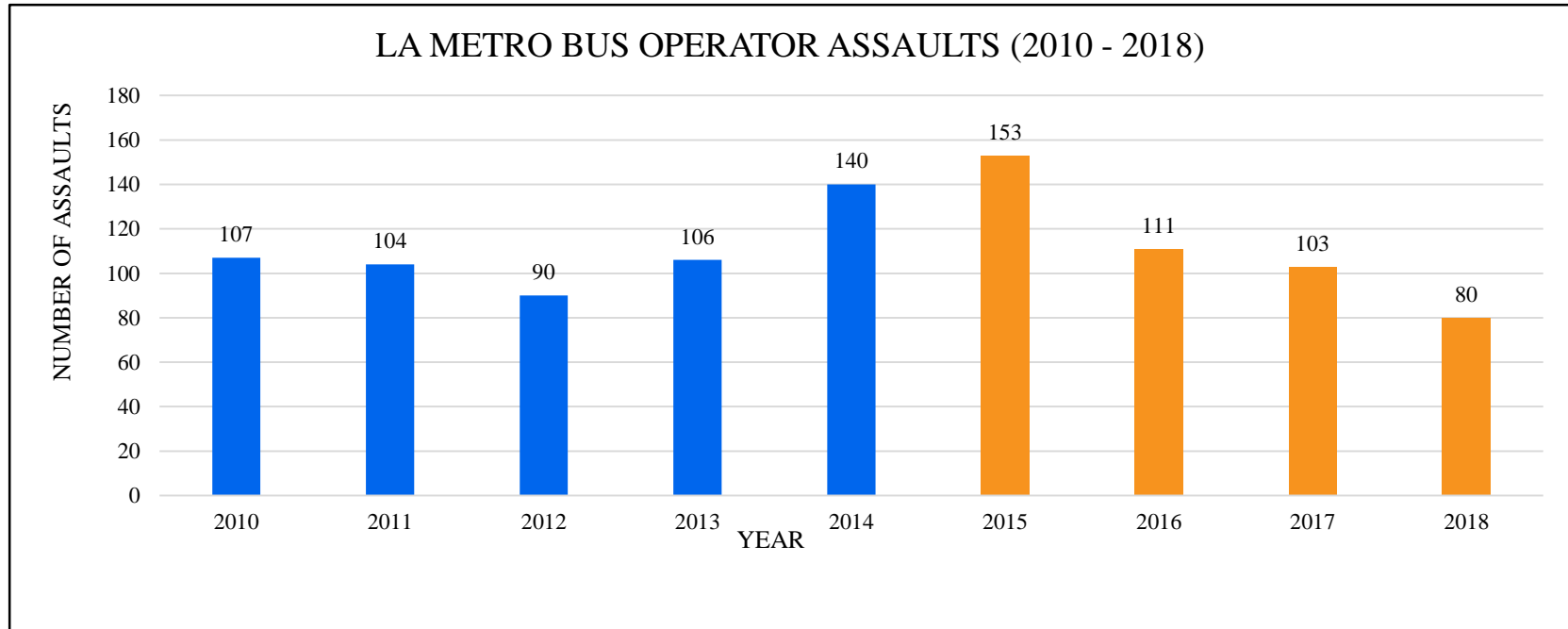
OIG/ADS System Safety Consulting, LLC



**Metro**

# Assaults by Year Before and After Barriers

Legistar File #  
2019-0232



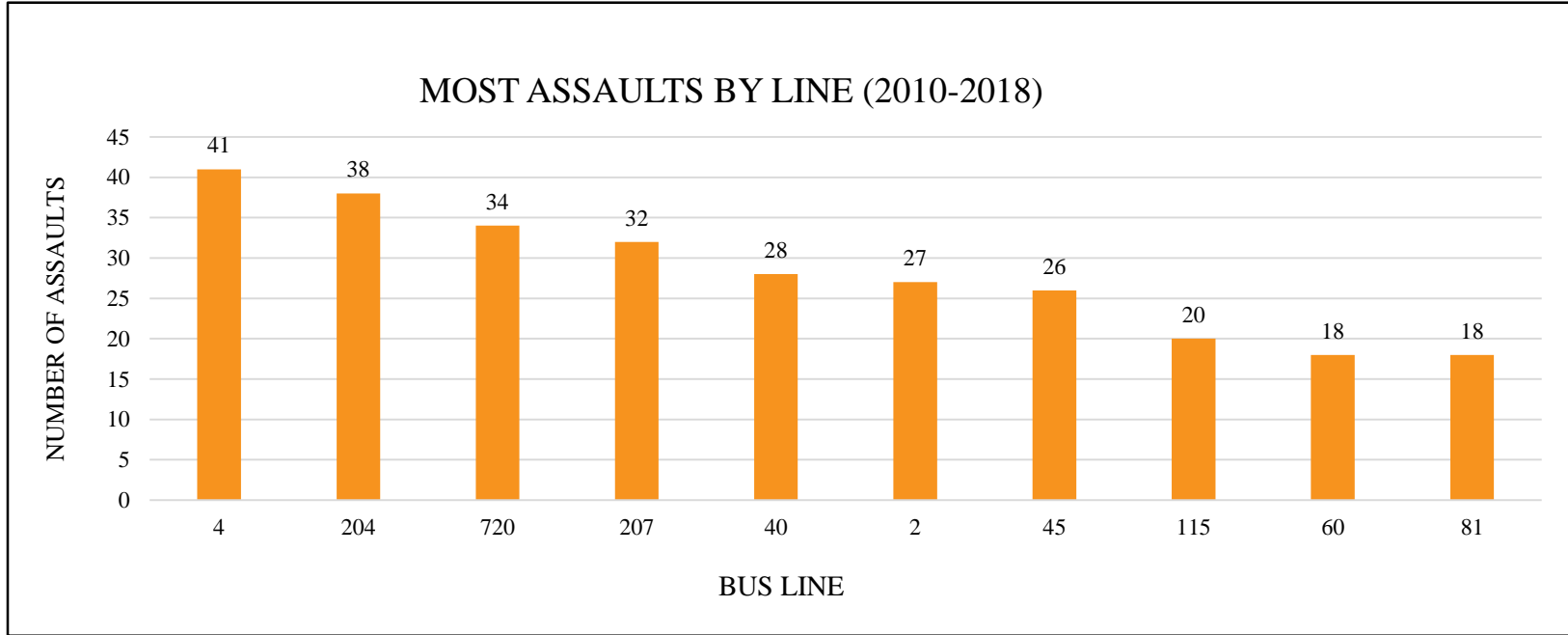
OIG/ADS System Safety Consulting, LLC



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# Most Assaults By Line

Legistar File #  
2019-0232



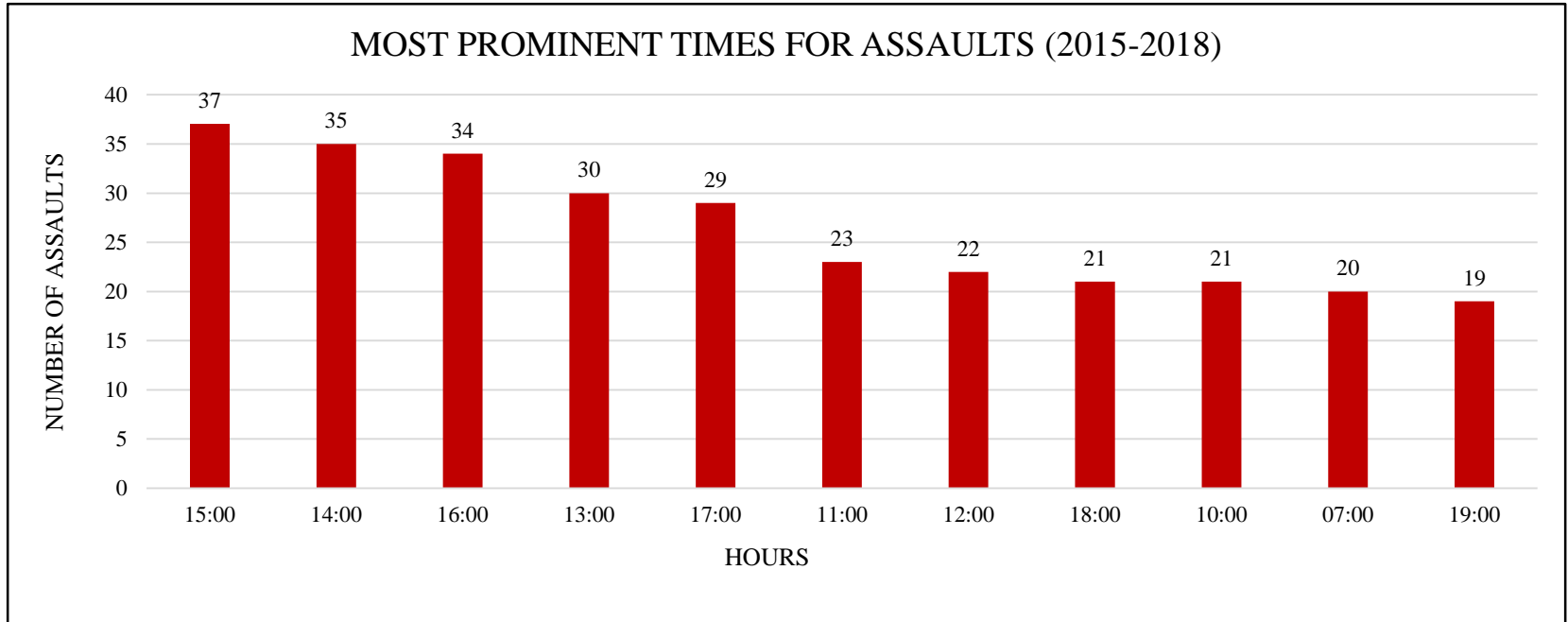
OIG/ADS System Safety Consulting, LLC



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# Most Assaults By Time Of Day

Legistar File #  
2019-0232



# Recommendations

Legistar File #  
2019-0232

- 
- Continue to install barriers and camera monitor systems
  - Collect data in assault reports if barrier in use
  - Apply assault trend analysis to policing strategies and deployment
  - Fix objections to barriers and make use mandatory
  - Improve safety barrier use and de-escalation training
  - Continue preventative measures to combat operator assaults

# Next Steps

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Legistar File #  
2019-0232

- Implement recommendations in report to improve operator safety
- Report periodically to Metro Board on barrier utilization





## Board Report

File #: 2019-0250, File Type: Motion / Motion Response

Agenda Number: 25.

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### OPERATIONS, SAFETY AND CUSTOMER EXPERIENCE COMMITTEE MAY 16, 2019

**SUBJECT: MOTION 39 RESPONSE- BRIDGE HOUSING ON THE DIVISION 6 BUS YARD**

**ACTION: RECEIVE AND FILE**

#### **RECOMMENDATION**

RECEIVE AND FILE report on Bridge Housing on the Division 6 Bus Yard in response to Board Motion 39.

#### **ISSUE**

At the February 2019 Metro Board Meeting, the Board of Directors passed Motion 39- Bridge Housing on the Division 6 Bus Yard requesting that the CEO (A) Enter into a no-fee lease agreement with the City of Los Angeles of the former Division 6 site for temporary bridge housing and (B) Report back on MTA's ongoing efforts to address homelessness on the MTA System in April 2019, including but not limited to existing funding constraints for additional non-transportation funding.

#### **BACKGROUND**

Metro has been impacted by LA County's homeless crisis. According to the 2018 Greater Los Angeles Homeless Count, 53,000 people in LA County are homeless and seventy-five percent of those homeless individuals are without shelter. Due to the lack of available shelter space and 24-hour operating shelters County-wide, homeless individuals have taken to Metro's system and properties for alternative shelter. Metro has taken major steps in furtherance of addressing the LA County homeless crisis and the impact onto Metro. Those various steps and requests for additional support are outlined here in.

#### **DISCUSSION**

##### **Lease Agreement Division 6**

Metro's Real Estate Department is working with the City of Los Angeles to enter a no fee lease agreement for the former Division 6 site for temporary bridge housing.

##### **Metro's Ongoing Efforts to Address Homeless and Funding Constraints and Opportunities**

###### **Ongoing Efforts**

In spring 2016 at the direction of Metro's CEO, Metro developed the Homeless Task Force comprised



of various stakeholders tasked to identify ways to address homelessness on Metro system and properties. In 2017, Metro developed the Transit Homeless Action Plan-an agency guide on how to address the homeless crisis impact on Metro with focus on the ridership experience, maintaining a safe and secure system and providing coordinated and responsive outreach to the homeless.

### *C3 Homeless Outreach Teams*

The Metro Transit Homeless Action Plan called for coordination with LA County and LA City as well as the hiring of two C3 homeless outreach teams (County, City, Community) through the County's department of Health Services to get the homeless into housing resources. In 2018 Metro expanded those teams from 2 to 8 teams operating across the entire Metro system during AM and PM shifts seven days a week. These teams cost nearly \$5 million annually and are entirely paid for by Metro. To date, there have been a total of 4,578 homeless C3 contacts, 1,081 of whom have been linked to housing resources and 83 of whom have been permanently housed.

### *Law Enforcement Homeless Engagement*

With Metro acting as the lead we rely on homeless engagement by our Metro law enforcement officers trained specially in homeless engagement and outreach. In FY19 Metro increased law enforcement homeless engagement resulting in-10 LAPD HOPE officers, 10 LASD MET officers and 2 LBPD quality of life officers all specifically trained to meet the needs of the homeless-prioritizing social services over arrest. All officers are paid for by Metro.

### *Security Efforts*

Metro Transit Security Fare Enforcement Officers prevent system loitering and fare evasion by checking for fares. All fares checks are done in a nondiscriminatory manner without regard to whether or not someone is homeless. If security identifies someone who is homeless who wants help they are able to link them to shelters as the security staff are equip to provide shelter information and make the link to Metro's C3 outreach teams.

### *Mental Health Outreach*

For a period of 3 months in late 2018, LA County Department of Mental Health provided mental health outreach on Metro. Nearly one third of homeless in LA County are affected by mental health challenges. Due to LA County funding shortfalls per the County the program was paused until more resources are available. This program was at no cost to Metro.

### *Measure H Generalists*

Measure H generalists provide homeless outreach on government properties inclusive of Metro, beaches, harbors, parks and libraries. Outreach is not specific to Metro, does not go past the fare gates and data is not reported.

### *Showers for the Homeless*

Metro currently partners with LA City and their shower program at the Red / Purple Line Westlake MacArthur Park station with showers located in Westlake Park. Additionally, at the direction of the

Metro Board and the LA County Board of Supervisors, Metro is working with LA County’s CEO’s office to place LA County Office of Emergency Management showers at transit adjacent locations to serve the homeless. Currently, those showers are not yet available, and operations will be joint between Metro and LA County.

*Homeless Encampments*

Any homeless encampment that is addressed on Metro properties, including Metrolink right of way in LA County provide for 14 days’ notice to vacate, social service outreach, clean ups and storage of homeless personal property. Each of these steps are 100% paid for by Metro. Each encampment clearing costs anywhere from ten to forty thousand dollars. Metrolink has been additionally funded in FY19 to increase the number of sheriff deputies and clear encampments along the Metrolink right of way.

*Metro Connect Days*

Metro partners with connect days adjacent to Metro service locations. Specifically, Metro’s C3 outreach teams guide their homeless contacts on the Metro system off the system to these connect days so that the homeless may obtain broader social services and care. The connect days are also attended by Metro’s Mobile Customer Center who market the Metro L.I.F.E. Program. Each element of Metro’s Connect Day partnership is entirely funded by Metro.

*Faith Based Partnership*

The CEO leads a Metro Faith Based Round Table. Metro seeks to work with these faith based leaders to develop partnerships to work with the homeless including bridge housing, welcome home packages and bed shelter purchases. Metro recently hired a project manager on homelessness who is developing next steps with the faith based stakeholders.

*Career Opportunities*

Through Metro’s Work Force Investment Now (WIN) Program, we are engaging homeless shelters to provide formerly homeless individuals workforce training to lead to Metro employment and establish a pathway for homeless to become self-sufficient members of society.

Opportunities and Funding Constraints.

Metro’s efforts to address homelessness on the system and at the County at large employ a multi-faceted approach. In light of the broader LA County homeless crisis and in light of Metro funding the bulk of all homeless resources and initiatives seen on the Metro system, Metro’s efforts to address transit homeless are seemingly only scratching the surface. Metro requires additional financial and personnel support to carry on our existing initiatives, and to expand our impact in addressing homelessness on the system and on properties.

The following are Metro’s FY19 expenditures to address influx of homelessness on the system as a result of the LA County homeless crisis.

Support Funded Solely By Metro	Minimum Annual Cost
--------------------------------	---------------------

C3 Homeless Outreach Teams- 8 Teams	\$5,000,000.00
10 LAPD HOPE Officers	\$3,100,828.43
10 LASD MET Officers	\$3,389,878.97
02 LBPD Quality of Life Officers	\$520,319.00
Division 6 Bridge Housing	\$88,000.00
Enhanced Security at Union Station	\$371,773.23
Encampment Clean Ups	\$10,000 to \$40,000 per clean up

Metro is additionally exploring a quasi Public-Private-Partnership pilot initiative where Metro would provide a safe and secure space for homeless as an alternative to buses and trains. At these sites homeless would receive comprehensive resources including bed vouchers, case management, showers, a warm cup of coffee etc. Similar to the Housing for Health project at SEPTA in the City of Philadelphia, Metro could employ like methodologies that consider lessons learned from that project. The project would identify a Metro property to host the pilot and work with relevant stakeholders to establish financing, operations, resources and support, among other elements.

To continue to operate at our current levels and to meet the existing demands on the system and properties, Metro requires the following support and funding for transit centered homeless engagement and services into FY20:

- A long term funding plan for homeless outreach on the Metro system inclusive of C3 outreach teams
- Housing and bed vouchers
- 24-hour support to aid the homeless on the system during evening hours when social services are no longer open
- Additional financial support to Transit Security Guards for fare compliance
- Additional financial support to law enforcement homeless outreach
- LA County and LA City earmarked funding for critical social programs Metro system and properties inclusive of mental health outreach, drug rehabilitation etc.
- Funding support and personnel to support LA Hop and the local service planning areas to allow Metro to be integrated into the broader SPA outreach.

**Financial\_Impact**  
**FINANCIAL IMPACT**

The budget impacts are noted with the outlined express efforts. Thus far, Metro has invested millions in addressing the homeless. To allow these programs to be sustained long term and to expand, Metro will seek additional outside financial support.

**IMPLEMENTATION OF STRATEGIC PLAN GOALS**

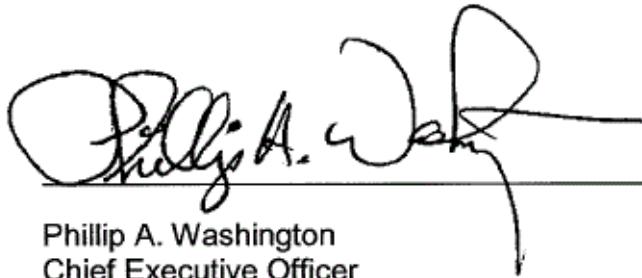
The programs described supports Goal #2 and #4 of Metro’s Strategic Goals. Goal #2, Deliver outstanding trip experiences for all users of the transportation system; and Goal #4, Transform Los Angeles County through regional collaboration and national leadership

**NEXT STEPS**

Assemble a working group with various stakeholders who may provide additional funding and social service opportunities to serve the homeless.

Prepared By: Jennifer E. Loew, Transit Security Special Project Manager,  
System Security and Law Enforcement (213) 922-3646

Reviewed By: Alex Z Wiggins, Chief, System Security and Law Enforcement,  
(213) 922-4433  
Nadine Lee Chief of Staff (Interim), Office of the Chief Executive Officer, (213)  
922-7447



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Phillip A. Washington  
Chief Executive Officer

# Motion 39 Response

Operations, Safety and Customer Experience Committee

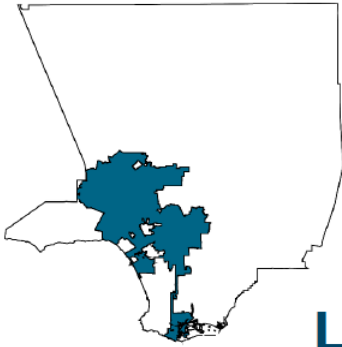
May 2019



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# LA County Homeless

## PEOPLE EXPERIENCING HOMELESSNESS



**City of  
Los Angeles**

**31,516**

**5% Decrease**



**County of  
Los Angeles**

**53,195**

**3% Decrease**

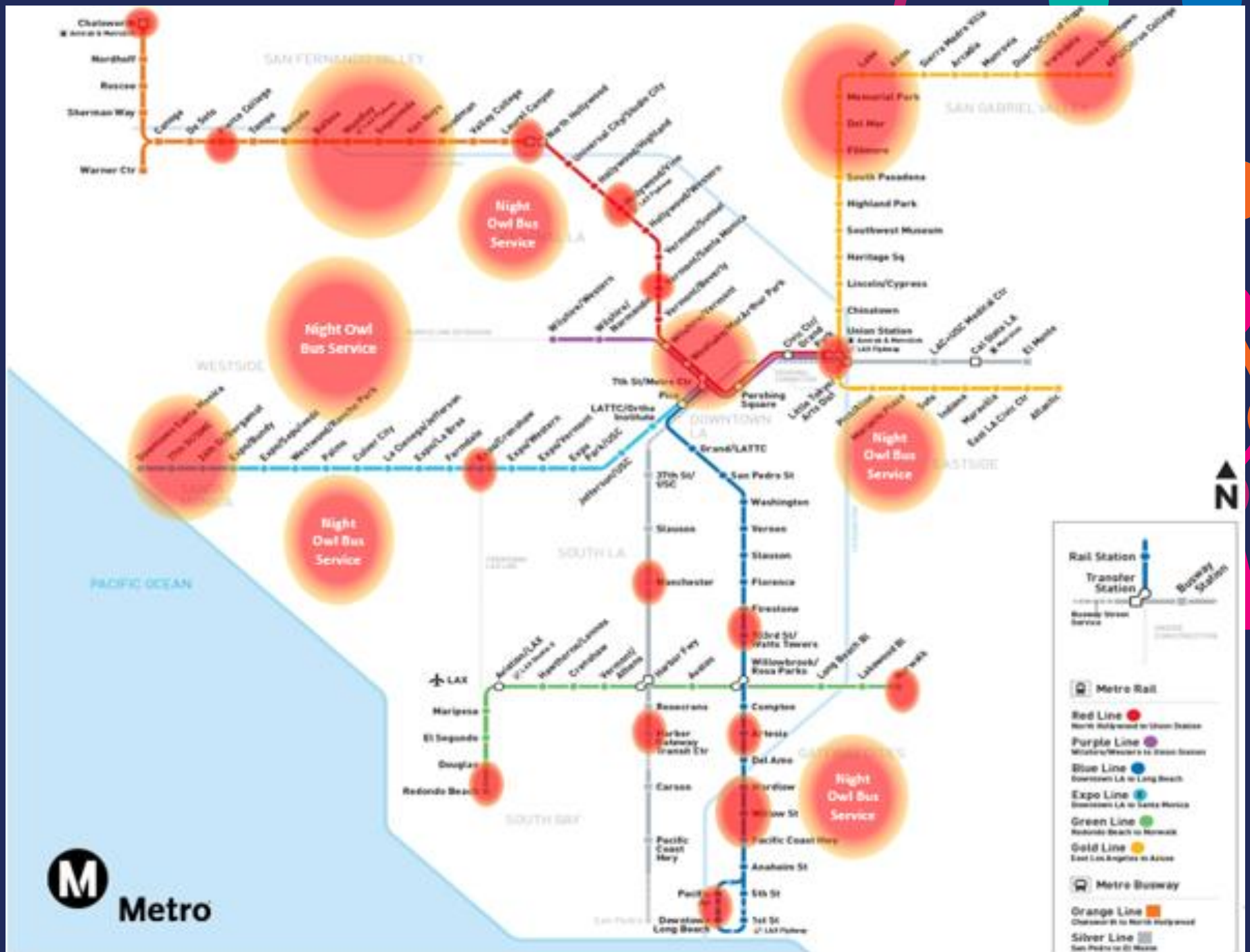


2018 HOMELESS COUNT RESULTS

The LA CoC total number was 50,385, a 4% decrease from 2017. The LA CoC is Los Angeles County excluding Glendale, Pasadena, & Long Beach CoCs. 4



\*LAHSA 2018 vs. 2017 figures



# Motion 39- Bridge Housing at Division 6 Bus Yard

## Motion at February 2019 Board Meeting:

The Metro Board requests that the CEO:

- (1) Enter into a no fee lease agreement with the City of Los Angeles of the former Division 6 site for temporary bridge housing -  
**Parties Entering Agreement**
- (2) Report back on MTA's ongoing efforts to address homelessness on the MTA system in April 2019, including but not limited to existing funding constraints for additional non-transportation funding.



**Metro**



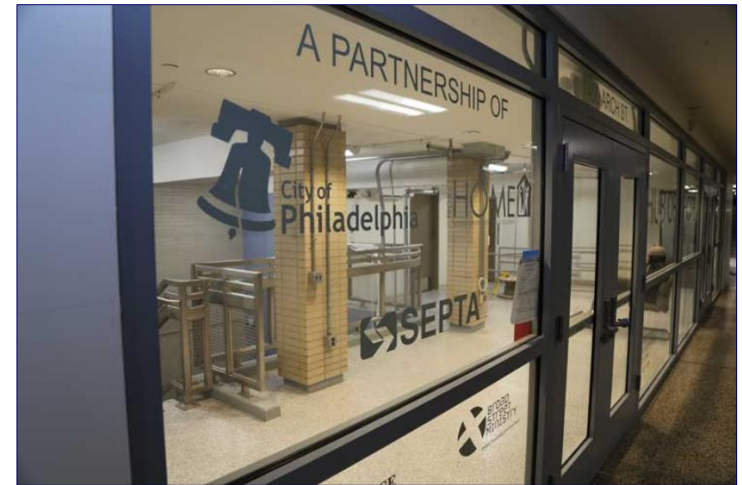
# Metro's Ongoing Homeless Efforts

- ✓ Homeless Outreach
- ✓ Mental Health Outreach
- ✓ Security Efforts
- ✓ Resources to Homeless
- ✓ Addressing Encampments
- ✓ Faith Based Partnerships

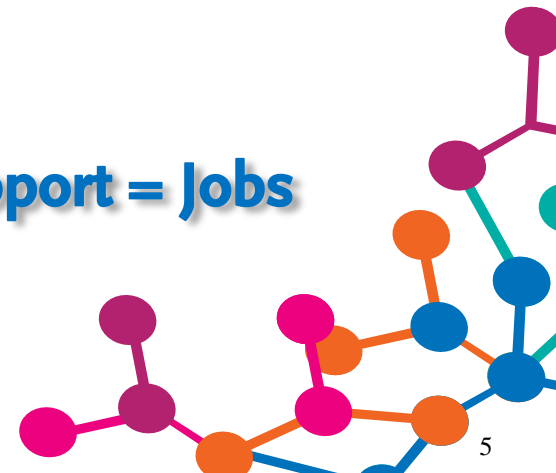
# P3 Homeless Workforce Development Plan

## Program Description

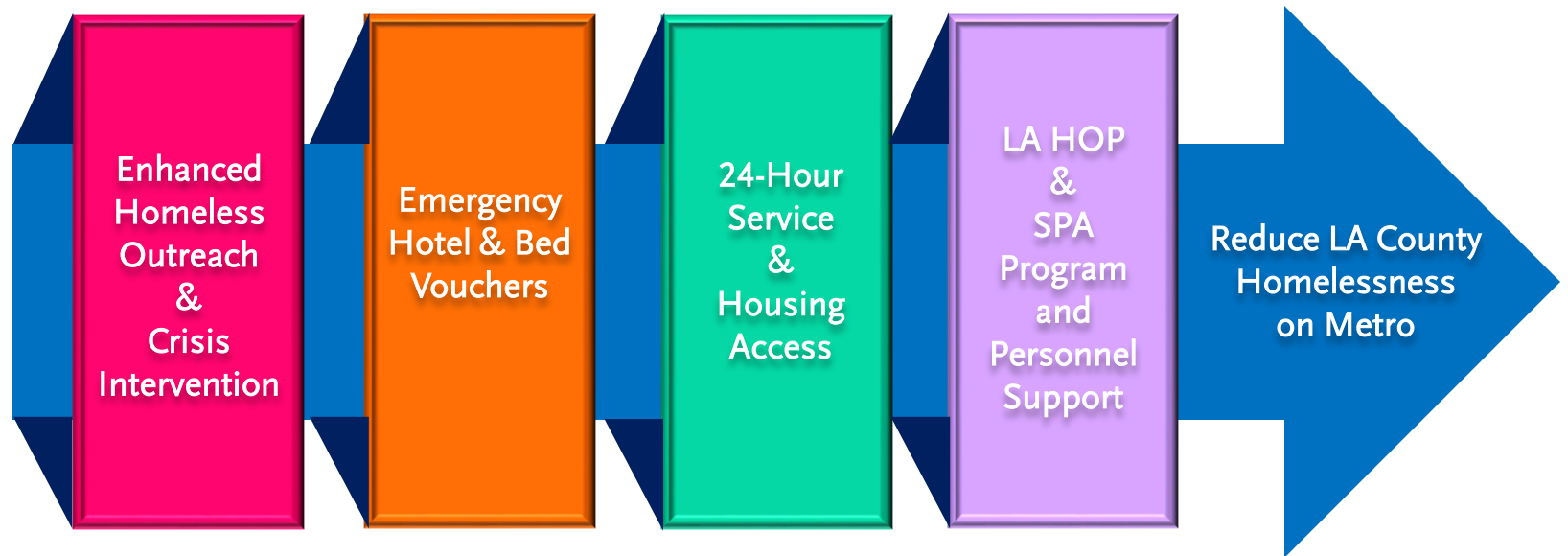
- ✓ Provide homeless engagement, crisis intervention and services adjacent to transit lines by providing low barriers to housing, mental health access and career pathways.
- ✓ A collaboration between LA Metro, Union Station Homeless Services, and local government bodies, launched on a pilot basis with opportunity to expand.
- ✓ Funded through public-private partnership (P3).



**Housing + Health + Transportation + Support = Jobs**



# Program Funding Support Into Future Years



**Board Report**

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**File #:** 2019-0242, **File Type:** Contract**Agenda Number:** 26.

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**OPERATIONS, SAFETY AND CUSTOMER EXPERIENCE COMMITTEE  
MAY 16, 2019****SUBJECT: CONTRACT MODIFICATION - LA COUNTY DEPARTMENT OF HEALTH SERVICES  
C3 HOMELESS OUTREACH TEAMS****ACTION: APPROVE RECOMMENDATIONS****RECOMMENDATION**

AUTHORIZE the Chief Executive Officer to execute Contract Modification No. 1 to Contract No. H-705713 with Los Angeles County Department of Health Services to extend the contract for Metro's C3 (city, county, community) homeless outreach teams for an additional two years at the cost of \$4,940,000 annually for a total cost of \$9,880,000, inclusive of administrative fees.

**ISSUE**

In light of the broader LA County and nationwide homeless crisis Metro deploys eight C3 homeless outreach teams system wide, seven days a week on rail, bus and at Union Station. Addressing homeless on the Metro system remains an ever present need and therefore, the requests is to extend the C3 outreach for two years through May 2021.

**DISCUSSION****LA County Homeless Crisis**

Metro has been impacted by LA County's homeless crisis. According to the 2018 Greater Los Angeles Homeless Count, 53,000 people in LA County are homeless and seventy-five percent of those homeless individuals are without shelter. Due to the lack of available shelter space and 24-hour operating shelters County-wide, homeless individuals have taken to Metro's system and properties for alternative shelter.

**History**

In spring 2016, Metro created the Metro Homeless Task Force to address the displaced persons that have turned to Metro system and property for alternative shelter. Out of the Task Force, Metro created the Metro Transit Homeless Action Plan which was presented to the Metro Board of Directors in February 2017. The Action Plan's goals are to enhance the customer experience, maintain a safe and secure system, and provide coordinated outreach. Components of the plan include Metro's coordination with County and City Measure H and Measure HHH. The plan also called for the hiring

of two C3 teams (County, City, Community) through the County Department of Health Services as indicated by Metro’s Board of Directors. The C3 teams are to provide coordinated and responsive outreach to the homeless and to ultimately get them in housing resources.

Metro’s C3 Teams

Metro’s C3 Homeless Outreach teams’ twelve-month pilot program began on May 22, 2017 with initial homeless outreach on the Red Line. In FY19 Metro expanded the C3 teams from two to eight teams to cover rail, night owl bus and Union Station.

Since the launch of Metro’s C3 Homeless Outreach teams in May 22, 2017, Metro’s C3 teams have provided substantial homeless outreach through March 31, 2019-- with 4,798 total unduplicated homeless contacts, 1,137 of whom have been linked to permanent housing solutions with a total of 88 homeless persons permanently housed.

***C3 Homeless Outreach March 1, 2019 through March 31, 2019:***

<b>Performance Measure</b>	<b>March Number Served</b>	<b>May 2017 to March 2019 Number Served</b>
Contacts with unduplicated individuals	220	4,798
Unduplicated individuals engaged	57	2,658
Unduplicated individuals provided services (obtaining vital documents, follow-up activities, transportation, CES packet, clinical assessment, etc.) or successful referral (supportive services, benefits linkage etc.)	111	1,942
Unduplicated individuals engaged who are successfully linked to an interim housing resource	47	742
Unduplicated individuals engaged who are linked to a permanent housing resource	4	307
Unduplicated individuals engaged who are	5	88

With Metro System Security and Law Enforcement personnel as the lead, Metro’s C3 teams coordinate with LAPD’s Homeless Outreach and Protective Engagement (HOPE) Teams, LASD’s Mental Evaluation Teams (MET), Long Beach PD, and Metro’s Transit Security Officers, in an effort to engage the homeless and provide placement into services. This coordination maintains Health Insurance Portability and Accountability Act (HIPAA) compliance while providing coordinated and responsive homeless outreach.

**FINANCIAL IMPACT**

Funding is included in the FY20 Proposed budget in Cost Center 2610, Account 50316, Project 306001. Funding for this project will come from federal, state, and local sources including sales taxes and fares that are eligible for bus and rail capital and operating projects. The Project Manager is responsible for including the cost in future budget years.



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**IMPLEMENTATION OF STRATEGIC PLAN GOALS**

The program described supports Goal #2 and #4 of Metro's Strategic Goals. Goal #2, Deliver outstanding trip experiences for all users of the transportation system; and Goal #4, Transform Los Angeles County through regional collaboration and national leadership

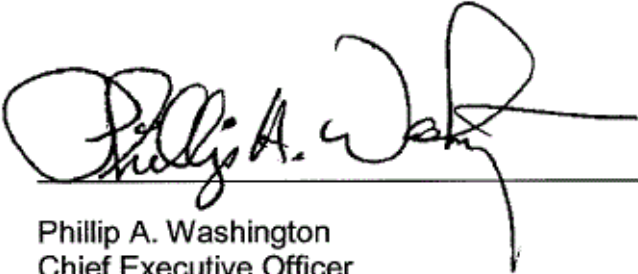
**ALTERNATIVES CONSIDERED**

The alternative would be to cancel the C3 outreach on our system and allow all outreach to homeless be through law enforcement, however, that path forward is not recommended as there are individuals who are homeless who prefer to not work with law enforcement and would otherwise reject receiving housing if the social service component was not integrated into Metro's homeless engagement.

**NEXT STEPS**

Upon Board approval of the requested Metro will enter into a two year contract with the LA County Department of Health Services.

Prepared by: Jennifer E. Loew, Transit Security Special Project Manager, System Security and Law Enforcement, (213) 922-3646  
Reviewed by: Alex Z. Wiggins, Chief, System Security & Law Enforcement (213) 922-4433  
Debra Avila, Chief Vendor/Contract Management Officer, (213) 418-3051



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Phillip A. Washington  
Chief Executive Officer



# Metro C3 Homeless Outreach Teams Contract Modification

Operations, Safety and Customer Experience Committee

May 2019



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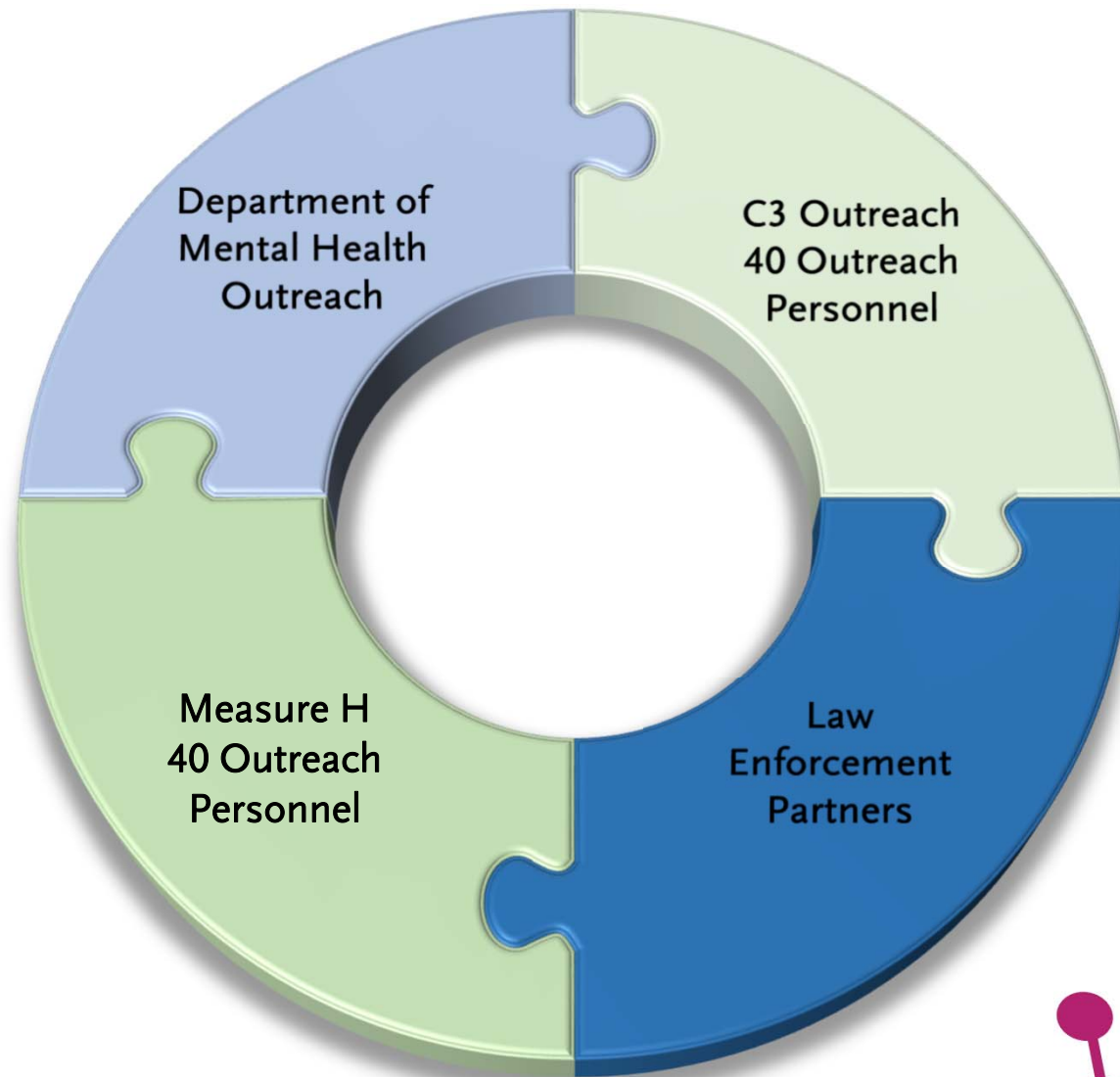


# Los Angeles County Homeless Crisis Impact on Metro's Transit System & Properties





# Metro Homeless Outreach Components



# Metro C3 Homeless Outreach Formation & Success

## Transit Homeless Action Plan

- 2 C3 Team Pilot Program
- Red Line Only, M-F
- \$1.2 M Annually
- 19 People Permanently Housed

2016

## Homeless Task Force

- CEO Initiated
- County and Agency Stakeholders
- Identify Agency Plan to Address Homelessness on Transit

2017

2018

## C3 Team Expansion

- 1 year contract
- 8 Teams
- 24/7 Deployment
- Entire System: AM, PM Rail; PM Bus; Union Station
- \$5 M Annually
- 88 People Permanently Housed

2019

## C3 Contract Modification

- 2 Year Contract Extension
- 8 Teams
- 24/7 Flexible Deployment
- Entire System: Rail, Bus, Union Station, Encampments
- \$5 M Annually, 2 Year Contract





# Changing Lives Through Transit Homeless Engagement

Public Interest Story

# Public Interest Story

- ✓ 37 year old male identified as “M”
- ✓ 2 years homeless
- ✓ History of becoming easily irritated
- ✓ Accepted help after multiple PATH outreach attempts
- ✓ Housed at La Kretz Villas





## Board Report

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**File #:** 2019-0255, **File Type:** Informational Report

**Agenda Number:** 27.

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**OPERATIONS, SAFETY, AND CUSTOMER EXPERIENCE COMMITTEE  
MAY 16, 2019**

**SUBJECT: PHASED ART ASSET MANAGEMENT PROGRAM UPDATE**

**ACTION: RECEIVE AND FILE**

**RECOMMENDATION**

RECEIVE AND FILE Annual Report on the Phased Art Asset Management Program.

**ISSUE**

At its May 2017 meeting, the Board directed staff to initiate a phased approach to Art Asset Management for existing and new lines. This report provides the requested annual report on these activities.

**DISCUSSION**

Metro's facility-integrated artworks are unique assets requiring special attention and care to ensure their state of good repair and aesthetic integrity. To address this need, and as directed in the May 2017 Board adopted action, staff has initiated ongoing annual care of the artworks along the oldest lines in the system, the Blue and Red Lines, and is applying lessons learned to new projects. Community members and artists continue to be engaged in the process.

**Blue Line**

Annual inspections, condition assessments, and regular ongoing care and maintenance of Blue Line artwork are underway. Five artwork repairs have been completed, and three artwork refurbishment projects have been initiated. In addition, artworks are being integrated into the New Blue project and new digital artworks by local artists will be featured on rotating display at each station when the line reopens later this year. All work is being closely coordinated with the New Blue closures and activities.

**Red Line**

Annual inspections, condition assessments, and regular ongoing care and maintenance of Red Line artwork has also been initiated this year. Efforts have begun to address the line's backlog of deferred artwork maintenance and repairs. Consultants, including artists, conservators, fabricators and other specialized technicians, will assist with this work to ensure these unique assets achieve and retain a state of good repair moving forward.

**NEXT STEPS**

Staff will continue to pursue the adopted phased art asset management program and will work to ensure the aesthetic integrity of the Blue and Red Line art assets as resourced. Staff will work cross-departmentally to apply lessons learned and to ensure that professional care and management of artworks is included in future operational plans and will continue to provide an annual report as directed by the Board.

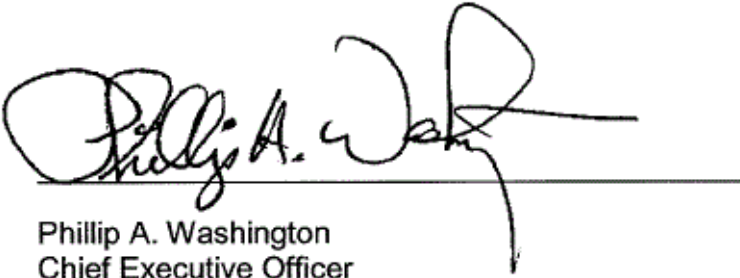
**ATTACHMENTS**

Attachment A - Annual Report on Phased Art Asset Management

Attachment B - Phased Art Asset Management Presentation

Prepared by: Maya Emsden, Deputy Executive Officer (213) 922-2720

Reviewed by: Yvette Rapose, Interim Chief Communications Officer, (213) 418-3154



Phillip A. Washington  
Chief Executive Officer

FY19 Metro Public Art Collection: Art Asset Management Report

May 16, 2019

Metro Blue Line						
Station	Artist / Artwork Title / Components	Year Installed	Annual Maintenance Requirements	Condition	FY19 Progress	FY20 Action Plan
Blue Line Tunnel	<i>Thomas Eatherton</i>  <i>Unity</i>  LED light sculpture installations	1991	Conduct detailed annual artwork inspection and cleaning. Document conditions.	Not functioning as intended. Electronic artwork requires refurbishment of 82 lightworks.	Funds secured to design develop solution to renovate non-functioning fiber-optic artwork with new, more efficient LED replacements. Work is underway.	Install efficient LED replacement units and vitrine covers restoring artwork as part of New Blue project.
Wardlow	<i>Jacqueline Dreager</i>  <i>Great Gathering Place</i>  Fiberglass, bronze and steel sculptures; Concrete and steel stools; Glass medallion with imagery	1992	Conduct detailed annual artwork inspection and cleaning. Document conditions. Biennial application of gel-coat and wax at fiberglass and bronze elements. Specialized or minor repairs when needed.	Fiberglass artwork sculptural elements reflect deterioration in keeping with UV exposure and age. Bronze and concrete artwork elements are in good condition.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report. Cleaned and re-coated fiberglass and bronze artwork components, implemented minor repairs to two artwork components.	Perform annual artwork inspections. Document artwork and update condition and corrective action report.
7th Street / Metro Center	<i>Joyce Kozloff</i>  <i>The Movies: Fantasies and Spectacles</i>  Ceramic tile murals	1993	Conduct detailed annual artwork inspection and cleaning. Document conditions. Biennial application of sealant along grout. Specialized or minor repairs when needed.	Low-fire ceramic tile artwork is damaged, reflecting vibration and graffiti etchings.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal grout.
7th Street / Metro Center	<i>Roberto Gil de Montes</i>  <i>Heaven to Earth</i>  Ceramic tile murals	1993	Conduct detailed annual artwork inspection and cleaning. Document conditions. Biennial application of sealant along grout. Specialized or minor repairs when needed.	Ceramic artwork tile is damaged, one small section is missing.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal grout.
Pico	<i>Robin Brailsford</i>  <i>Time and Presence</i>  Painted steel canopy panels	1993	Conduct detailed annual artwork inspection and cleaning. Document conditions. Biennial application of coatings. Specialized or minor repairs when needed.	Paint at artwork panels has faded.	Performed annual artwork inspections. Working closely with Facilities Maintenance Painters to coordinate re-painting of the artwork canopy panels in FY20 as part of New Blue project.	Perform annual artwork inspections. Document artwork and update condition and corrective action report.
San Pedro Street	<i>Sandra Rowe</i>  <i>Hope, Dream, Path, Focus, Belief</i>  Patinated, etched, pigmented waxed bronze panels; stainless steel kinetic sculptures	1993	Conduct detailed annual artwork inspection and cleaning. Document conditions. Biennial application of coatings. Specialized or minor repairs when needed.	Paint at artwork panels has faded. Kinetic elements are damaged.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Clean and re-coat panels, repair kinetic elements as part of New Blue project.
Grand / LATTC	<i>Mark Lere</i>  <i>Who, What, Where?</i>  Etched and paint filled granite tile paving; etched and paint filled concrete	1994	Completely removed as a result of Metro Blue Line Refurbishment Project. Capital Project underway to replace artwork.	Original artwork completely removed during Metro Blue Line Refurbishment Project.	Design development and engineering revised to incorporate New Blue impacts.	Manage Artist contract to fabricate and install replacement artwork. Scheduled completion FY20.

Metro Blue Line						
Station	Artist / Artwork Title / Components	Year Installed	Annual Maintenance Requirements	Condition	FY19 Progress	FY20 Action Plan
Vernon	<i>Horace Washington</i>  <i>A Tribute to Industry</i>  Bronze and powder coated steel stools; galvanized steel benches; stainless steel and painted steel sculpture; ceramic tile	1994	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial application of sealant. Specialized or minor repairs when needed.	Powder coatings and galvanizing at artwork elements require re-coating.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report. Powder coated stools will be refurbished offsite in June 2019 as part of New Blue project.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Reinstall powder-coated elements, re-coat galvanized steel benches onsite during New Blue project closures.
103rd Street / Watts Towers	<i>Roberto Salas</i>  <i>Blue Line Totems in Red</i>  Painted steel columns; ceramic tile	1994	Partially removed as a result of Blue Line refurbishment Project. CP in place with Artist to replace artwork. Conduct detailed annual artwork inspection, documentation and cleaning.	Original artwork partially removed during Metro Blue Line Refurbishment Project.	Engineering and design development completed. Manage Artist contract to fabricate and install replacement artwork. Scheduled completion FY20.	Manage Artist contract to fabricate and install replacement artwork. Scheduled completion FY20. Complete re-painting of station and artwork elements as part of New Blue project.
Pacific Coast Highway	<i>Joe Lewis</i>  <i>Twelve Principals</i>  Ceramic tile medallions	1994	Conduct detailed annual artwork inspection and cleaning. Document conditions. Biennial application of sealant along grout. Specialized or minor repairs when needed.	Artwork medallions require refurbishments and cleaning.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report. Refurbishments scheduled for May 2019 as part of New Blue project.	Perform annual artwork inspections. Document artwork and update condition and corrective action report.
Anaheim Street	Terry Braunstein  <i>Local Odysseys</i>  Porcelain enamel medallions	1994	Conduct detailed annual artwork inspection and cleaning. Document conditions. Specialized or minor repairs when needed.	Artwork elements are in good condition.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report.
Slauson	East Los Streetscapers  <i>South Central Suite</i>  Porcelain enamel panels; ceramic tile and pigmented concrete and ceramic tile murals	1995	Conduct detailed annual artwork inspection and cleaning. Document conditions. Biennial application of sealant along grout. Specialized or minor repairs when needed.	Porcelain enamel panels require minor repairs. Two porcelain enamel panels are to be refabricated. Ceramic tile artwork is in good condition.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report. Implemented repairs at ceramic tile, cleaned and sealed grout. Currently working to replace a section of the terra cotta relief and replace attachment system at all porcelain enamel panels before re-installation.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Work with original artist to reproduce two missing porcelain enamel panels.
Compton	Eva Cockcroft  <i>Past, Present and Future</i>  Ceramic tile panels; ceramic tile columns	1995	Conduct detailed annual artwork inspection and cleaning. Document conditions. Biennial application of sealant along grout. Specialized or minor repairs when needed.	Ceramic tile artwork is in good condition.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report. Implemented significant specialized repairs throughout, cleaned and sealed grout as part of New Blue project.	Perform annual artwork inspections. Document artwork and update condition and corrective action report.
5th Street	Jim Isermann  <i>Failed Ideals</i>  Stain glass medallions	1995	Partially removed as a result of Blue Line refurbishment Project. CP in place with Artist to replace artwork.	Artwork partially removed during Metro Blue Line Refurbishment Project.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report. Capital budget in place to restore impacted artworks.	Initiate design development and engineering of artwork relocation. Confirm integration of original artwork at new location with Metro Engineering and Construction. Work closely with the original artist throughout scope. Scheduled completion FY20.



Metro Blue Line						
Station	Artist / Artwork Title / Components	Year Installed	Annual Maintenance Requirements	Condition	FY19 Progress	FY20 Action Plan
1st Street	Paul Tzanetopoulos  <i>Breezy and Delightful</i>  Porcelain enamel kinetic medallions	1995	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial application of coatings and sealant. Specialized or minor repairs when needed.	Artwork medallions require cleaning.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Clean medallions panels and replace kinetic elements as part of New Blue project.
Downtown Long Beach	Patrick Mohr  <i>Angel Train</i>  Anodized aluminum sculptures	1995	Conduct detailed annual artwork inspection and cleaning. Document conditions. Biennial application of sealant and wax. Specialized or minor repairs when needed.	Artwork requires cleaning and application of wax sealant.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Clean and apply sealant and wax.
Pacific Ave	June Edmonds  <i>We Know Who We Are</i>  Glass mosaic medallions	1995	Conduct detailed annual artwork inspection and cleaning. Document conditions. Biennial application of sealant along grout. Specialized or minor repairs when needed.	Artwork medallions require cleaning.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Clean and apply sealant to grout.
Artesia	Lynn Aldrich  <i>Blue Line Oasis</i>  Stainless steel and ceramic sculpture; glass mosaic tile, painted steel wishing well; glass mosaic panels	1996	Conduct detailed annual artwork inspection and cleaning. Document conditions. Biennial application of sealant along grout. Specialized or minor repairs when needed.	Ceramic tile artwork should be monitored for graffiti and further surface loss of low-fire glaze.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report. Implemented significant repairs at glass mosaic elements, reproduce and install ceramic tile for kiosk, clean and apply sealant to grout as part of New Blue project.	Perform annual artwork inspections. Document artwork and update condition and corrective action report.
Washington	Elliot Pinkney  <i>Running for the Blue Line</i>  Painted steel panels; painted columns	1997	Conduct detailed annual artwork inspection and cleaning. Document conditions. Biennial application of coatings. Specialized or minor repairs when needed.	Paint has failed at artwork panels. Painted artwork columns throughout station require repainting.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Repaint artwork columns throughout station in keeping with artist's original design.
Del Amo	Colin Gray  <i>Del Amo Wheel</i>  Glass fiber reinforced concrete sculpture	1999	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial application of coatings and sealant. Specialized or minor repairs when needed.	Glass fiber reinforced concrete wheel has been restored in keeping with original conditions.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report. Implemented significant repairs at glass fiber reinforced concrete sculpture, cleaned and applied sealant and grout as part of New Blue project.	Perform annual artwork inspections. Document artwork and update condition and corrective action report.
7th Street / Metro Center	Rotating Artist  <i>Rotating Photo Installations</i>  Anodized aluminum, plexiglass, duratrans film	2001	Conduct detailed annual artwork inspection, documentation and cleaning. Annual cleaning and replacement of bulbs at the time of artwork rotation.	Electronic components are outdated and not functioning as intended. Replacement housing has been purchased, requires installation.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Replace lighting housings.

Metro Blue Line						
Station	Artist / Artwork Title / Components	Year Installed	Annual Maintenance Requirements	Condition	FY19 Progress	FY20 Action Plan
7th Street / Metro Center	K. Kobayashi, N. Korten & M. Perlas  <i>Plantings</i>  Pigmented concrete benches; cast aluminum, painted steel, gobos and electrical components	2002	Conduct detailed annual artwork inspection and cleaning. Document conditions. Specialized cleaning of gobos and electrical components, replacement of lighting. Biennial application of sealant. Minor repairs when needed.	All projection units are broken. Electrical is outdated and not functioning as intended. Expo Rail Line impacts altered artwork location.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement replacement of electronic components, minor repairs and full cleaning.
Willowbrook / Rosa Parks	<i>Michael Massenburg, Robin Strayhorn</i>  <i>Pathways To Freedom</i>  Glass mosaic, ceramic tile and concrete benches	2002	Conduct detailed annual artwork inspection and cleaning. Document conditions. Biennial application of sealant along grout. Specialized or minor repairs when needed.	Benches are in good condition. Monitor for future graffiti.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report. Implemented repairs, cleaned and applied sealant.	Perform annual artwork inspections. Document artwork and update condition and corrective action report.
Firestone	Ricardo Mendoza  <i>The Will to Progress</i>  Ceramic tile mural panels	2004	Conduct detailed annual artwork inspection and cleaning. Document conditions. Biennial application of sealant along grout. Specialized or minor repairs when needed.	Ceramic artwork tile is damaged.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement repairs to tile, clean and seal grout.
Florence	Ricardo Duffy  <i>A Florence Moment</i>  Ceramic tile murals	2005	Conduct detailed annual artwork inspection and cleaning. Document conditions. Biennial application of sealant along grout. Specialized or minor repairs when needed.	Repairs are currently underway at ceramic artwork tile.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report. Repairs currently underway.	Perform annual artwork inspections. Document artwork and update condition and corrective action report.
Willow	Merge Conceptual Design  <i>Out of Sight</i>  Glass canopy with laminated imagery, GFRC bench	2006	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial application of sealant. Specialized or minor repairs when needed.	Artwork is in good condition.	Performed annual artwork inspections. Documented artwork and produced detailed condition and corrective action report. Implement minor repairs, clean and seal bench.	Perform annual artwork inspections. Document artwork and update condition and corrective action report.
Willowbrook / Rosa Parks	Judy Baca  <i>Metate Bench</i>  GFRC benches with ceramic tile	2008	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial application of sealant. Specialized or minor repairs when needed.	Three benches damaged by contractor during removal (WRP Project).	Documented artwork and produced detailed condition and corrective action report. Obtain estimates for repairs.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement repairs, clean and seal.

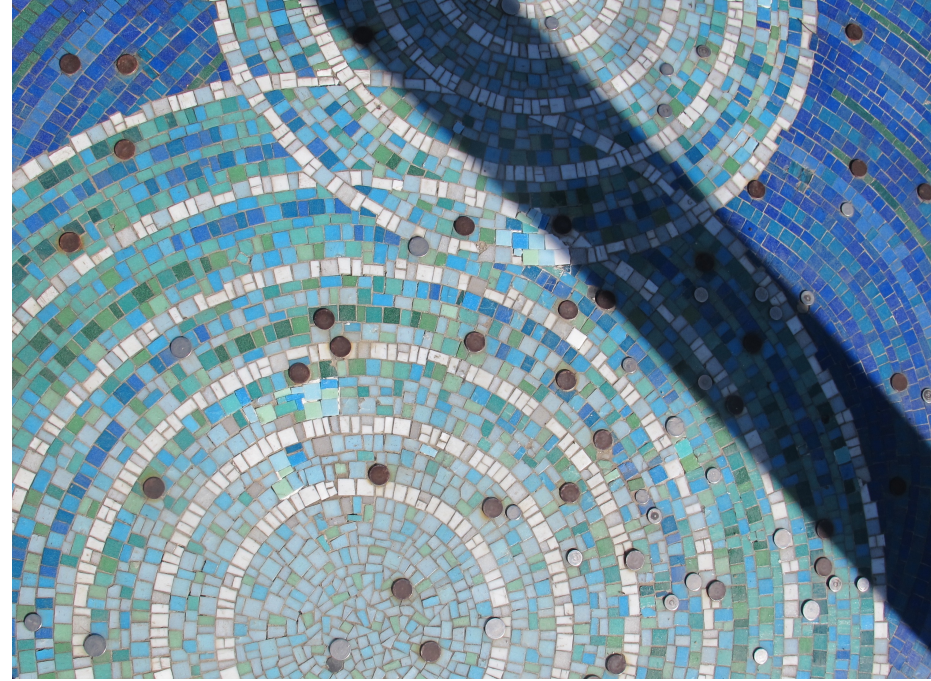
Metro Red Line						
Station	Artist / Artwork Title / Components	Year Installed	Annual Maintenance Requirements	Condition	FY19 Progress	FY20 Action Plan
Union Station	Christopher Sproat  <i>Union Chairs</i>  Granite benches	1993	Conduct detailed annual artwork inspection and develop condition report. Document conditions and develop Maintenance Requirements. Specialized or minor repairs when needed.	Graffiti damage. Lighting components are not functioning as intended. Artwork is in need of detailed artwork inspection, specialized cleaning and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Union Station	Terry Schoonhoven  <i>Traveler</i>  Ceramic tile mural	1993	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial application of coatings and sealant. Specialized or minor repairs when needed.	Artwork is in need of detailed artwork inspection, specialized cleaning and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Union Station	Cynthia Carlson  <i>LA: City of Angels</i>  Hand painted mural with reliefs	1993	Conduct detailed annual artwork inspection and cleaning. Document conditions. Biennial application of gel-coat and wax at fiberglass and bronze elements. Specialized or minor repairs when needed.	Artwork is in need of detailed artwork inspection, specialized cleaning and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Civic Center / Grand Park	Johnathan Borofsky  <i>I Dreamed I Could Fly</i>  Hand painted fiberglass sculpture; audio playback system; spotlights	1993	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial application of coatings and software update at audio component. Specialized or minor repairs when needed.	Artwork is in need of detailed artwork inspection, specialized cleaning and lighting replacement. Audio component requires software update.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Pershing Square	Stephen Antonakos  <i>Neons for Pershing Square</i>  Neon sculptures	1993	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial replacement of Neon Transformers. Specialized or minor repairs when needed.	One neon component is broken. Artwork is in need of detailed artwork inspection, neon repairs, transformer replacement and specialized cleaning.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Westlake / MacArthur Park	Francisco Letelier  <i>El Sol/La Luna</i>  Ceramic tile murals	1993	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial application of coatings and sealant. Specialized or minor repairs when needed.	Water intrusion at station at walls impacting Artwork mural. Artwork is in need of detailed artwork inspection, specialized cleaning and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Westlake / MacArthur Park	Therman Statom  <i>Into the Light</i>  Glass skylight; acrylic, aluminum, stainless steel and painted steel sculptures; ceramic tile	1993	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial replacement of lighting. Specialized or minor repairs when needed.	Artwork is in need of detailed artwork inspection, specialized cleaning and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.

Metro Red Line						
Station	Artist / Artwork Title / Components	Year Installed	Annual Maintenance Requirements	Condition	FY19 Progress	FY20 Action Plan
Vermont / Santa Monica	Robert Millar  <i>Untitled</i>  Text painted on walls throughout; aluminum and polycarbonate panels; colored lighting	1993	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial application of coatings and sealant. Specialized or minor repairs when needed.	Lighting component (entrance lighting) is outdated and requires complete renovation. Artwork is in need of detailed artwork inspection, specialized cleaning and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Union Station: Gateway Transit Center	May Sun and Richard Wyatt	1995	Inspections will result in the development of a Maintenance Plan identifying environmental and deferred maintenance impacts and Action Plan. Resources are needed to conduct detailed artwork inspection and condition report.	Water issues at soffit and pipe. Will require resources to perform artwork inspections and condition report. Based on professional conservator report identifying recommendations, implement specialized cleaning, repairs and conservation.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report. Complete restoration beginning June 2019.	Complete restoration. Perform annual artwork inspections. Document artwork and update condition and corrective action report.
Wilshire / Vermont	Peter Shire  <i>Los Angeles Seen</i>  Painted steel and stainless steel sculptures	1996	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial application of coatings and sealant. Specialized or minor repairs when needed.	Kinetic motorized component not working. Artwork is in need of detailed artwork inspection, specialized cleaning and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Vermont / Beverly	George Stone  <i>Untitled</i>  Class fiber reinforced concrete sculptural rock formations	1999	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial application of coatings and sealant. Specialized or minor repairs when needed.	Graffiti damage. Artwork is in need of detailed artwork inspection, specialized cleaning, sealant and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Vermont / Sunset	Michael Davis  <i>Ecliptic/Illume</i>  Porcelain, stainless steel, illumination	1999	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial application of coatings and sealant. Specialized or minor repairs when needed.	Graffiti damage. Lighting components are not functioning as intended. Artwork is in need of detailed artwork inspection, specialized cleaning and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Hollywood / Western	May Sun  <i>Untitled</i>  Painted aluminum and polycarbonate sculptures; lighting; terrazzo and copper paving murals; etched granite; patinated bronze; ceramic tile throughout	1999	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial replacement of lighting and application of coatings and sealant. Specialized or minor repairs when needed.	Graffiti damage. Lighting components are not functioning as intended. Artwork is in need of detailed artwork inspection, specialized cleaning and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Hollywood / Vine	Gilbert "Magu" Lujan  <i>Hooray for Hollywood</i>  Painted fiberglass and pigmented concrete benches, hand painted ceramic	1999	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial replacement of lighting and application of coatings and sealant. Specialized or minor repairs when needed.	All platform sculptural elements damaged and removed. Ceramic tile artworks located throughout are in need of detailed artwork inspection, specialized cleaning and sealant.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.

Metro Red Line						
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Hollywood / Highland	Sheila Klein <i>Underground Girl</i>  Painted aluminum fixtures, electrical; aluminum and stainless sculpture	2000	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial replacement of lighting and application of coatings and sealant. Specialized or minor repairs when needed.	Electronic components are not functioning as intended. Artwork is in need of detailed artwork inspection, specialized cleaning and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Universal City / Studio City	Margaret Garcia <i>Tree of Califas</i>  Carved ceramic tile; stainless steel, painted steel and granite benches; laminated imagery	2000	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial application of coatings and sealant. Specialized or minor repairs when needed.	Graffiti damage. Artwork is in need of detailed artwork inspection, specialized cleaning and repairs.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
North Hollywood	Anne Marie Karlsen <i>Kaleidoscope Dreams</i>  Ceramic tile	2000	Conduct detailed annual artwork inspection, documentation and cleaning. Biennial replacement of lighting and application of coatings and sealant. Specialized or minor repairs when needed.	Graffiti damage. Artwork is in need of detailed artwork inspection, specialized cleaning and repairs.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
7th Street / Metro Center	Rotating Artist <i>Rotating Photo Installations</i>  Anodized aluminum, plexiglass, duratrans film	2001	Conduct detailed annual artwork inspection, documentation and cleaning. Annual cleaning and replacement of bulbs at the time of artwork rotation.	Electronic components are outdated and not functioning as intended. Replacement housing has been purchased, requires installation.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Install new housings.
Vermont / Beverly	Rotating Artist <i>Rotating Photo Installations</i>  Anodized aluminum, plexiglass, duratrans film	2001	Conduct detailed annual artwork inspection, documentation and cleaning. Annual cleaning and replacement of bulbs at the time of artwork rotation.	Electronic components are outdated and not functioning as intended. Replacement housing has been purchased, requires installation.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Install new housings.
Hollywood / Highland	Rotating Artist <i>Rotating Photo Installations</i>  Anodized aluminum, plexiglass, duratrans film	2001	Conduct detailed annual artwork inspection, documentation and cleaning. Annual cleaning and replacement of bulbs at the time of artwork rotation.	Electronic components are outdated and not functioning as intended. Replacement housing has been purchased, requires installation.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Install new housings.
Wilshire / Normandie	Rotating Artist <i>Rotating Photo Installations</i>  Anodized aluminum, plexiglass, duratrans film	2001	Conduct detailed annual artwork inspection, documentation and cleaning. Annual cleaning and replacement of bulbs at the time of artwork rotation.	Electronic components are outdated and not functioning as intended. Replacement housing has been purchased, requires installation.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Install new housings.
Universal City / Studio City	Rotating Artist <i>Rotating Photo Installations</i>  Anodized aluminum, plexiglass, duratrans film	2001	Conduct detailed annual artwork inspection, documentation and cleaning. Annual cleaning and replacement of bulbs at the time of artwork rotation.	Electronic components are outdated and not functioning as intended. Replacement housing has been purchased, requires installation.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Install new housings.

Metro Red Line						
Station	Artist / Artwork Title / Components	Year Installed	Annual Maintenance Requirements	Condition	FY19 Progress	FY20 Action Plan
7th Street / Metro Center	K. Kobayashi, N. Korten & M. Perlas  <i>Plantings</i>  Pigmented concrete benches; cast aluminum, painted steel, gobos and electrical components	2002	Conduct detailed annual artwork inspection, documentation and cleaning. Annual cleaning and replacement of bulbs at the time of artwork rotation.	Electronic components are outdated and not functioning as intended. Artwork is in need of detailed artwork inspection, specialized cleaning and housing replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Civic Center / Grand Park	Peter Requam  <i>Civic Center Benches</i>  Granite benches	2004	Conduct detailed annual artwork inspection and develop condition report. Document conditions and develop Maintenance Requirements. Specialized or minor repairs when needed.	Graffiti damage present. Artwork is in need of detailed artwork inspection, specialized cleaning, sealant and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Civic Center / Grand Park	Samm Kuncze  <i>In the Living Rock</i>  Glass mosaic and granite murals	2004	Conduct detailed annual artwork inspection and develop condition report. Document conditions and develop Maintenance Requirements. Specialized or minor repairs when needed.	Graffiti damage present. Artwork is in need of detailed artwork inspection, specialized cleaning, sealant and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Vermont / Santa Monica	George Legrady  <i>Kinetic Flow</i>  Porcelain enamel mural	2006	Conduct detailed annual artwork inspection and develop condition report. Document conditions and develop Maintenance Requirements. Specialized or minor repairs when needed.	Graffiti damage present. Artwork is in need of detailed artwork inspection, specialized cleaning, sealant and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Civic Center Station	Faith Ringgold  <i>People Portraits: in Creativity, Performing, Sports &amp; Fashion</i> Glass mosaic panels	2010	Conduct detailed annual artwork inspection and develop condition report. Document conditions and develop Maintenance Requirements. Specialized or minor repairs when needed.	Artwork is in need of detailed artwork inspection, specialized cleaning, sealant and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Westlake / MacArthur Park	Sonia Romero  <i>MacArthur Park, Urban Oasis</i>  Hand carved porcelain mosaic panels	2010	Conduct detailed annual artwork inspection and develop condition report. Document conditions and develop Maintenance Requirements. Specialized or minor repairs when needed.	Water intrusion at station at walls impacting Artwork mural. Artwork is in need of detailed artwork inspection, specialized cleaning, sealant and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Vermont / Beverly	Tyree Guyton  <i>People in Motion</i>  Glass mosaic mural	2010	Conduct detailed annual artwork inspection and develop condition report. Document conditions and develop Maintenance Requirements. Specialized or minor repairs when needed.	Artwork is in need of detailed artwork inspection, specialized cleaning, sealant and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.

Metro Red Line						
Station	Artist / Artwork Title / Components	Year Installed	Annual Maintenance Requirements	Condition	FY19 Progress	FY20 Action Plan
Universal City / Studio City	Stephen Johnson  <i>Untitled</i>  Glass mosaic mural	2010	Conduct detailed annual artwork inspection and develop condition report. Document conditions and develop Maintenance Requirements. Specialized or minor repairs when needed.	Artwork is in need of detailed artwork inspection, specialized cleaning, sealant and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Wilshire / Normandie	Frank Romero  <i>Festival of Masks Parade</i>  Painted aluminum mural	1996	Conduct detailed annual artwork inspection and develop condition report. Document conditions and develop Maintenance Requirements. Specialized or minor repairs when needed.	Artwork is in need of detailed artwork inspection, specialized cleaning, sealant and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Wilshire / Western	Richard Wyatt  <i>People Coming People Going</i>  Ceramic tile murals	1996	Conduct detailed annual artwork inspection and develop condition report. Document conditions and develop Maintenance Requirements. Specialized or minor repairs when needed.	Artwork is in need of detailed artwork inspection, specialized cleaning, sealant and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Wilshire / Western	Pae White  <i>The Beppins</i>  Pigmented concrete stools; seeded lithocrete paving	2003	Conduct detailed annual artwork inspection and develop condition report. Document conditions and develop Maintenance Requirements. Specialized or minor repairs when needed.	Artwork is in need of detailed artwork inspection, specialized cleaning, sealant and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.
Wilshire / Vermont	Bob Zoell  <i>No Title</i>  Ceramic tile murals	2004	Conduct detailed annual artwork inspection and develop condition report. Document conditions and develop Maintenance Requirements. Specialized or minor repairs when needed.	Broken tile and graffiti etchings throughout. Artwork is in need of detailed artwork inspection, specialized cleaning, sealant and lighting replacement.	Performed first detailed annual artwork inspection and document. Developed a condition and corrective action report.	Perform annual artwork inspections. Document artwork and update condition and corrective action report. Implement minor repairs, clean and seal.



# Phased Art Asset Management Annual Report

*Operations, Safety, & Customer Experience Committee*

*May 16, 2019*



Lynn Aldrich  
*Blue Line Oasis*  
1996



# Board Directive

- A. Provide Annual Report
- B. Dedicate resources
- C. Include in future refurbishment projects
- D. Budget as new artworks completed
- E. Create maintenance plan for each artwork
- F. Develop phased approach

# Phased Approach

## Existing Lines:

- Line by line as each reaches 25 years

## New Lines:

- Apply lessons learned
- Include art asset management in start up plans

FY18	FY19	FY21
Blue	Blue	Blue
	Red	Red
		Green
		Crenshaw/LAX

# Progress

## Blue Line:

- Regular ongoing care underway
- Completed 28 annual inspections and condition assessments
- Completed 5 artwork repairs
- Initiated 3 major artwork refurbishments
- Digital artworks will launch with NewBlue

## Red Line:

- Regular ongoing care underway
- Completed 30 annual inspections and condition assessments

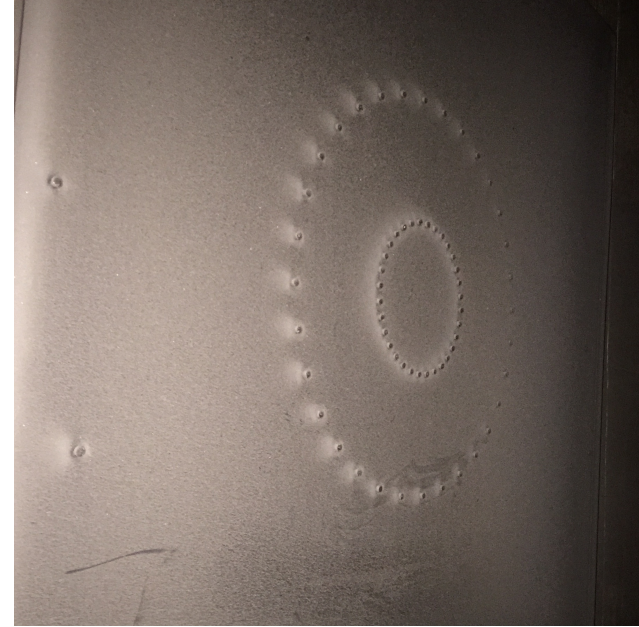
# Blue Line: Wardlow Station – Artwork Repairs



Jacqueline Dreager  
*Great Gathering Place*  
1992



# Blue Line: Tunnel Artwork Refurbishment initiated



Thomas Eatherton  
*Unity*  
1991

# New Blue: Digital Artworks (all stations)

1 **A** Downtown LA 3 min

2 **A** Long Beach 5 min



**More People Than You Know** Eryn Akili Parker Ross (LP)  
*Legacy, 2019*

**M** Metro

Maps Arrivals Alerts



Intersection



# Red Line: Westlake/MacArthur Park Station – Assessments



Francisco Letelier  
*El Sol, La Luna*  
1993



Thank you.

**Board Report**

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**File #:** 2019-0266, **File Type:** Informational Report**Agenda Number:** 39.

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**OPERATIONS, SAFETY, AND CUSTOMER EXPERIENCE COMMITTEE  
MAY 16, 2019****SUBJECT: COUNTDOWN CLOCKS - ARRIVAL PREDICTION INFORMATION****ACTION: RECEIVE AND FILE****RECOMMENDATION**

RECEIVE AND FILE the status report on efforts underway to improve the reliability and accuracy of arrival prediction information and enhance the customer experience on Metro's Bus and Rail fleet.

**ISSUE**

Providing accurate arrival information is a challenge to all transit agencies. When service is running as scheduled, predicted arrival information is very good. However, service disruptions are each uniquely different and schedule recovery must be addressed on a case-by-case basis, making accurate arrival predictions much more difficult. Metro staff have developed and begun implementing a program for improving predictive arrival accuracy to provide a better customer experience.

**BACKGROUND**

The public has come to rely on and expect a high level of technology-driven assistance for mobility services such as transportation networking companies, or TNCs (e.g. Uber and Lyft), where they can track their rides on their smart devices. The same expectations are being imposed on transit providers with equal vigor. Metro's challenge is to integrate solutions that can both immediately improve the customer experience and continue to evolve as technology advances in artificial intelligence, 5G bandwidth speed improvements, and autonomous vehicle development.

Transit agencies have taken different approaches to presenting arrival information to the customer. The following are the general options available. Metro has opted for option 1.

1. Arrival predictions - This approach adjusts arrival information to address real-time conditions. This option requires frequent data updates so that delays or changes caused by service disruptions are accounted for in the predictions.
2. Scheduled time arrivals - This option provides arrival information based on the service schedule. It does not adjust for service disruptions or variations.
3. Headway information - This option eliminates the prediction calculation and simply provides



the time between the next scheduled bus or train (e.g. train arrives every 6 minutes or 12 minutes). It does not adjust for service disruptions and is primarily a time-based display.

Predicting arrival information appears to be a straight-forward endeavor. When service is operating as planned, the predicted arrival information is very good. However, service disruptions impact schedules on a regular basis, and because each situation is unique, the strategies for recovery are difficult to address in a prediction algorithm. In addition, recovery strategies are different for bus and rail.

#### Countdown Clock Architecture:

At its most basic level, the architecture of an effective arrival prediction system consists of three elements:

1. Vehicle location
2. Data
3. Information Sharing

Vehicle location can be determined through global positioning systems (GPS) for above-ground operations like bus and, in the case of light rail and subway, track circuitry that indicates the presence of a vehicle based on a short circuit of a low voltage current in the track.

Prediction logic aggregates the data and accounts for the location of a vehicle relative to a stop or station and the speed at which the vehicle is traveling. This logic produces calculations based on real-time conditions and adjusts for any disruptions. The resultant information is transmitted as an application program interface (API) for use in customer-facing digital communications.

The API is used to generate customer information that is shared through any variety of platforms, such as digital displays, public announcements, mobile applications, or websites. Part of an enterprise-wide transit passenger information system (TPIS), countdown clocks refer specifically to the digital screens displaying bus or rail arrival time information.

#### Bus:

Buses operate somewhat independently in that a disruption to a single bus trip does not necessarily impact other buses. Operationally, recovering a disruption to the bus schedule can be done more easily due to the large network of streets and arterials that buses can use as alternate routes when needed.

In March 2017, the Metro Board approved the \$7.8 million Connected Bus capital project to support the implementation of cellular technology on Metro's bus fleet. Connecting Metro buses through the public cellular network improves vehicle location information and improve the prediction accuracy of bus arrival times. This is accomplished by increasing the poll rate of vehicle locations every 10 seconds versus the previous rate of every three minutes.

## Rail:

Rail service is disrupted daily due to such things as platform disturbances, in-vehicle patron emergencies, construction impacts, and track and signal maintenance. Some of these are momentary and others are more severe. Unlike bus, rail vehicles cannot deviate from the route to avoid a disruption ahead. For this reason, disruptions, however minor, can affect an entire corridor, and in extreme cases, adjacent corridors.

The existing track circuitry that provides rail vehicle location does not generate the level of real-time information needed to improve arrival predictions. In addition, a portion of the rail system is underground, making GPS technology more challenging to adopt as a systemwide strategy. As a result, Metro is exploring potential strategies to integrate gyro and speed data to improve vehicle location in the tunnels.

Metro has undertaken various proofs-of-concept to evaluate options that are available to improve real-time vehicle location information for rail. While it is desirable to identify one solution that can address both subway tunnel communications as well as street-running light rail, Metro is also willing to consider separate technologies for street-running (LRV- light rail vehicles) and subway (HRV- heavy rail vehicles) operating conditions.

Through the proofs-of-concept, Metro is validating a proposed technology solution that aims to improve tunnel communication on the heavy rail that will also provide a complementary solution for the light rail. The Discussion section below describes the status and progress of these efforts.

## **DISCUSSION**

Metro is using a multi-pronged approach to improve arrival prediction information. The three main elements of this approach and the corresponding elements are described below and depicted in Attachment A:

1. Vehicle Location Improvements
  - a. Increase the poll rate of vehicle location data
  - b. Develop prediction logic that will improve accuracy based on service disruption updates
2. Data Improvements
  - a. Review and update standard operating procedures to improve data quality for service disruptions.
  - b. Evaluate the feasibility of integrating crowd sourcing information into prediction algorithms to further improve arrival accuracy.
3. Information Sharing Improvements
  - a. Install arrival information displays at rail platforms where they do not currently exist (New Blue).
  - b. Improve the electronic sign maintenance and reliability so that arrival information is always available.

Status:

Metro has convened a task force that is working on all the efforts identified above. The following is an update on some of these efforts:

Connected Bus Capital Project:

New buses will already be equipped with the connected bus technology. For this reason, buses that are slated for retirement within the next two years will be upgraded as part of the replacement plan. For the remaining fleet, the installation of cellular devices on the vehicles is being done in phases. As of March 2019, Metro has installed this technology on 1500 of 2348 vehicles (64% of bus fleet), and the current schedule projects full implementation by December 2019.

Predicted Arrival Information for Rail:

A proof of concept to obtain more accurate rail vehicle location updates operating in the tunnel environment is underway. This technology is expected to provide enhanced functionality for future scalability and will be evaluated for possible fleetwide implementation on both the light and heavy rail fleet.

Standard Operating Procedures for Rail Operations are being reviewed and updated to handle service disruptions more consistently and effectively. These procedures will help define ad-hoc service conditions that must be integrated into the prediction logic definition.

Digital Displays:

In the short term, Metro's priority is to ensure that all rail electronic message signs are connected to the network to display arrival information. A software update has also been developed to integrate these signs into the rail network. The following schedule is planned.

- Blue Line Arrival Information: FY19, Q4
- Gold and Green Line Arrival Information: FY20, Q1
- Expo Line Arrival Information: FY20, Q2

In the long term, Metro Marketing's Digital Advertising Program will install new signs on the rail system to display train arrival information. A proof of concept is being developed at 7<sup>th</sup>/Metro. Depending on the outcome and feasibility of this proof of concept, an enterprise wide implementation plan will be developed that will improve the reliability and availability of arrival information at all rail stations.

**FINANCIAL IMPACT**

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Funding for all proofs-of-concept and operational investigations to improve arrival prediction information is included in the FY19 operating budget of all affected cost centers.

The source of funds for future capital project funding to improve arrival prediction information will come from Federal and local funds. Use of these funding sources maximizes established funding provisions and guidelines.

#### Impact to Budget

The source of funds for future capital project funding to implement a proposed solution for improved arrival prediction information will come from Federal and local funds. Use of these funding sources maximizes established funding provisions and guidelines.

### **IMPLEMENTATION OF STRATEGIC PLAN GOALS**

Improved Customer Information supports **Metro Vision 2028 Strategic Goal 2: Deliver outstanding trip experiences for all users of the transportation system.**

### **NEXT STEPS**

Staff will continue to implement the initiatives defined above and continue to evaluate other technology applications as they become available to improve predicted arrival information for the customers.

1. Staff will incorporate these initiatives into the Customer Service and Experience Plan going forward.
2. Staff will submit a request to the Board to approve a Capital Project (Life of Project) for the implementation of a Connected Rail project that will enhance the arrival predictions on rail.

### **ATTACHMENTS**

Attachment A - Elements of the Arrival Prediction System

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Phillip A. Washington  
Chief Executive Officer

Attachment A  
Elements of the Arrival Prediction System

