Quarterly Service Performance Review
4th Quarter, FY23 (April- June 2023)

Engineering & Operations Committee
August 24, 2023
## KPI Grouping

### Service Performance

#### Service Delivery

**Capacity**
- Weekday - Average Ridership
- Dispatches Operated
- Passenger Loading

**Punctuality**
- On-time – Customer
  - Daily / Peak
- On-time – Train
  - Daily / Peak
- Timed Train Meets - K-Line

### Railway Asset Availability

#### Wayside
- Wayside - Train Control Systems
- Wayside Train Control System
- Control System
- Wayside - Railway Systems
  - Track
  - Traction Power

#### Revenue Fleet
- Revenue Fleet - Fleet Reliability
  - 4 AM - Car Availability
  - Vehicle MTBSD - (Hours)

#### Operations
- Transportation Staffing

#### Stations
- Availability – Elevators
- Availability – Escalators
- Availability – Fare Collection

### Customer Experience

#### Customer Service
- Customer Service
- Overall Customer Satisfaction
- Station Agent Customer Service
- Complaints

#### Environment
- Environment – Stations
  - Outside
  - Inside
- Environment – Trains
  - Cleanliness
  - Temperature
- Environment – Code of Conduct
  - Gender Based Harassment
  - Fare Evasion

### Safety and Security

#### Safety
- Safety – Passenger
  - Station Incidents
  - Vehicle Incidents
- Safety – Employee
  - Lost Time Injuries
  - OSHA Recordable Injuries
- Safety – Violations
  - Unscheduled Door Openings
  - OSHA Recordable Injuries

#### Security
- Police Coverage
  - BPD Presence
  - BPD Response Time
- Crime – Against Person
  - Bike Thefts
  - Auto Burglaries
  - Auto Thefts
  - Progressive Policing
Summary – Service Delivery

<table>
<thead>
<tr>
<th>Metric</th>
<th>FY23 Q4</th>
<th>Goal</th>
<th>Change from FY23 Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All-Day</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weekday - Average Ridership</td>
<td>154,467</td>
<td>204,980</td>
<td>7.04%</td>
</tr>
<tr>
<td>Trains On-Time - Daily</td>
<td>77.0%</td>
<td>91.0%</td>
<td>37.00%</td>
</tr>
<tr>
<td>Customers On-Time - Daily</td>
<td>91.0%</td>
<td>94.0%</td>
<td>12.11%</td>
</tr>
<tr>
<td><strong>Peak</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trains On-Time - Peak</td>
<td>77.2%</td>
<td>46.48%</td>
<td></td>
</tr>
<tr>
<td>Customers On-Time - Peak</td>
<td>91.1%</td>
<td>22.69%</td>
<td></td>
</tr>
</tbody>
</table>

Gray arrows represent change from the previous quarter for metrics which do not have an established goal.
Service Delivery – Delay Incident Detail

10660 Delayed Trains Caused by Incidents

- External 78%
  - Cancellations 4%
  - Societal 39%
- Internal 22%
  - State of Good Repair 18%
  - Other 39%
  - Miscellaneous
  - Passenger
  - Weather

12% Operations
65% Vehicle
28% Wayside
72% Intrusion
31% Police and Security
69% Car Shortage
69% Staffing Shortage
15% Congestion
41% Miscellaneous
19% Passenger
25% Weather

Trains Delayed - Top Ten Single Incidents

- 5/2/2023, Weather, 404
- 5/3/2023, Weather, 382
- 4/7/2023, Weather, 347
- 5/8/2023, Weather, 192
- 6/7/2023, Intrusion, 153
- 4/9/2023, Intrusion, 129
- 6/20/2023, PG&E Outage, 127
- 6/6/2023, Weather, 111
- 4/26/2023, BPD, 108
- 6/13/2023, PG&E Outage, 108

Top ten incidents = 19.23% of delayed trains

Trains Delayed by Month

- Jul: 3446
- Aug: 3483
- Sep: 3300
- Oct: 3070
- Nov: 2470
- Dec: 6461
- Jan: 6333
- Feb: 4621
- Mar: 7364
- Apr: 3180
- May: 3135
- Jun: 4345

Q1 Q2 Q3 Q4

Societal 39%

Other 39%

Passenger

Congestion

Operations

Intrusion

Police and Security
Capacity – Ridership

• Ridership below budgeted goal
Capacity – Dispatches Operated

- Missed Dispatches are scheduled trains that did not run OR partial runs that were not able to dispatch from origin
- Missed dispatches due to staffing shortage continue to decrease

% of Scheduled Dispatches Missed by Cause

Scheduled Runs Dispatched from Origin

Hourly Scheduled Runs Dispatched from Origin
Capacity – Passenger Loading

Passenger Load per Car for Top 5 Crowded Weekday Trains

Average Hourly Weekday Passenger Load per Car by Line

*Maximum & Minimum Values of Top 5 Crowded Trains with outliers removed
Punctuality – Trains On-Time

**Trains On-Time - Daily**

**Estimate of Late Trains by Incident Cause (EOL)**

- **Police and Security, 28%**
- **Wayside, 11%**
- **Passenger, 10%**
- **Vehicle, 4%**
- **Congestion, 8%**
- **Intrusion, 11%**
- **Miscellaneous, 6%**

**Trains On-Time - Peak**
Punctuality – Customer On-Time

Customer On-Time - Daily

Customer On-Time - Peak
A meet is considered successful when there is at least 20 seconds of overlap time for both trains at the timed transfer point.

Timed Train Meets on the K-Line between the Yellow and Orange lines occur as follows:

- Northbound trains meet at 19th Street
- Southbound trains meet at MacArthur

### Punctuality – Timed Train Meets

#### Southbound Meets at MacArthur

#### Northbound Meets at 19th Street
Summary – Railway Asset Availability

<table>
<thead>
<tr>
<th>Metric</th>
<th>FY23 Q4</th>
<th>Goal</th>
<th>Change from FY23 Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wayside Equipment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Track</td>
<td>0.11</td>
<td>0.30</td>
<td>(1000.00%)</td>
</tr>
<tr>
<td>Traction Power</td>
<td>0.62</td>
<td>1.00</td>
<td>24.89%</td>
</tr>
<tr>
<td>Wayside Train Control System</td>
<td>0.95</td>
<td>1.30</td>
<td>44.11%</td>
</tr>
<tr>
<td>Computer Control System</td>
<td>0.30</td>
<td>0.30</td>
<td>(256.00%)</td>
</tr>
<tr>
<td>Transportation</td>
<td>1.02</td>
<td>0.50</td>
<td>44.05%</td>
</tr>
<tr>
<td>Vehicle MTBSD - (Hours)</td>
<td>8844</td>
<td>6500</td>
<td>8.06%</td>
</tr>
<tr>
<td>4 AM - Car Availability</td>
<td>696</td>
<td>629</td>
<td>6.74%</td>
</tr>
<tr>
<td>DMU - MDBF (Miles)</td>
<td>31003</td>
<td>20000</td>
<td>(66.80%)</td>
</tr>
<tr>
<td>Revenue Vehicle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Escalators in Service - Station</td>
<td>98.7%</td>
<td>98.0%</td>
<td>0.41%</td>
</tr>
<tr>
<td>Escalators in Service - Garage</td>
<td>99.8%</td>
<td>97.0%</td>
<td>0.98%</td>
</tr>
<tr>
<td>Elevators in Service - Street</td>
<td>95.6%</td>
<td>93.0%</td>
<td>4.19%</td>
</tr>
<tr>
<td>Elevators in Service - Platform</td>
<td>97.2%</td>
<td>96.0%</td>
<td>0.65%</td>
</tr>
<tr>
<td>Automatic Fare Collection - Gates</td>
<td>99.4%</td>
<td>98.0%</td>
<td>0.58%</td>
</tr>
<tr>
<td>Automatic Fare Collection - Vendors</td>
<td>99.2%</td>
<td>95.0%</td>
<td>0.57%</td>
</tr>
</tbody>
</table>

- Goal Met
- Goal Not Met <5%
- Goal Not Met >5%
Breakdown of 1851 Trains Delayed due to Railway Asset Unavailability

- Wayside, 65%
- Vehicle, 23%
- Operations, 12%
Breakdown of 1028 Delayed Trains Attributed to Wayside Equipment

- **Train Control System**
  - F.O, 257
  - Routing, 234

- **Traction Power System**
  - Coverboard, 173
  - Third Rail, 154

- **Computer Control System**
  - Computers, 76
  - Data Comm, 76

- **Track System**
  - Track, 58

**Track System**

- **Wayside Train Control System**

- **Traction Power System**

- **Wayside Computer Control System**
Revenue Fleet – Reliability

Breakdown of Delayed Trains by Vehicle System

- ATO/VATC, 106
- Propulsion, 72
- Aux. Elec., 51
- Wheels, 18
- Brake, 56
- Door, 49

Mean Time Between Service Delays

- Results
- Goal

Fleet Type

- Mean Time Between Service Delays
  - FOTF
  - Legacy

Worst Three Systems For Delays

- ATO/VATC
- Propulsion
- Brake

Car Availability at 4 AM

- Results
- Goal

Mean Time Between Service Delays

- Results
- Goal

Breakdown of Delayed Trains by Vehicle System

- ATO/VATC, 106
- Propulsion, 72
- Aux. Elec., 51
- Wheels, 18
- Brake, 56
- Door, 49
Operations - Transportation

- Train delays due to staff shortages have declined significantly as recruitment of Train Operators continues.
- Recruiting of Train Operators, Rail Controllers, and Foreworkers remains the highest priority for Operations.

Operations

- Delayed Trains per 100 Train Trips

Graph showing delayed trains per 100 train trips from April to June, with a decline from May to June.
Outlook – Transportation Staffing

• Train Operators
  • On pace to reach full-staffing in late 2023
  • Three classes underway – on-going into Fall

• Station Agents
  • Will reach full-staffing as current classes graduate
  • Continued but slowing pace of recruiting

• Rail Controllers
  • Five Rail Controllers in training during this quarter

• Foreworkers
  • Hiring is a priority for 2023/2024
  • Twenty Foreworkers in training
Station Equipment – Elevator Availability

Station Elevator
- Goal met

Garage Elevator
- Goal met

*E-line Elevator and Escalator are included*
Station Equipment – Escalator Availability

Street Escalator
• Goal met

Platform Escalator
• Goal met
Gate Availability

- Goal met

Vendor Availability

- Goal met
## Summary – Customer Experience

<table>
<thead>
<tr>
<th>Metric</th>
<th>FY23 Q4</th>
<th>Goal</th>
<th>Change from FY23 Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Customer Experience</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Customer Satisfaction</td>
<td>73%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Station Agent Customer Service</td>
<td>3.9</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Complaints per 100,000 Passenger Trips</td>
<td>23.1</td>
<td>1.12%</td>
<td>▲</td>
</tr>
<tr>
<td><strong>Train Environment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Train Temperature</td>
<td>4.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Train Interior Cleanliness</td>
<td>3.7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Station Environment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environment Outside Stations</td>
<td>3.5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Environment Inside Stations</td>
<td>3.5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Code of Conduct</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender Based Harassment</td>
<td>9%</td>
<td>10%</td>
<td>-</td>
</tr>
<tr>
<td>Fare Evasion</td>
<td>25.1%</td>
<td>8.39%</td>
<td>-</td>
</tr>
</tbody>
</table>

▲ Gray arrows represent change from the previous quarter for metrics which do not have an established goal.
Customer Service - Experience

Overall Customer Satisfaction

*Overall, how satisfied are you with the services provided by BART?*

Station Agent Customer Service

*Customer service from Station Agent (if used today)*

**Updated 5-Point Scale**

<table>
<thead>
<tr>
<th>FY23 Q3</th>
<th>FY23 Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.9</td>
</tr>
</tbody>
</table>

**Old scale used prior to FY23 Q3**

- 60%
- 65%
- 70%
- 75%
- 80%
- 85%
- 90%

<table>
<thead>
<tr>
<th>FY22 Q4</th>
<th>FY23 Q1</th>
<th>FY23 Q2</th>
<th>FY23 Q3</th>
<th>FY23 Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Top-2-box</td>
<td>% of Top-2-box</td>
<td>% of Top-2-box</td>
<td>% of Top-2-box</td>
<td>% of Top-2-box</td>
</tr>
<tr>
<td>70%</td>
<td>75%</td>
<td>70%</td>
<td>75%</td>
<td>70%</td>
</tr>
</tbody>
</table>

**% of Passenger Ratings of “Excellent” or “Good” 4-Point Scale**

<table>
<thead>
<tr>
<th>FY22 Q3</th>
<th>FY22 Q4</th>
<th>FY23 Q1</th>
<th>FY23 Q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>90%</td>
<td>90%</td>
<td>85%</td>
<td>80%</td>
</tr>
</tbody>
</table>
Customer Service – Cases by Type

Breakdown of 5144 Inquiry Cases

Inquiry, 2193
Comment, 175
Compliment

Compliment Cases – FY23 Q4

Personnel - S/A  Personnel - Other  Personnel - T/O  Station Facilities  Compliments Misc.

Inquiry Cases – FY23 Q4

Apps  Parking  General  Clipper  Transit Information
Customer Service – Complaint Cases

Breakdown of 2615 Complaint Cases

Customer Complaints

FY23 Q4 Trending Customer Complaints
Environment – Stations

Environment Outside Station

- This is a composite score which incorporates the appearance of BART landscaping, walkways, and entry plaza (67%), and the cleanliness of the parking lot (33%).

Environment Inside Station

- This is a composite score which incorporates the appearance of the platform (40%), concourse (25%), escalator (10%), stairwells (7.5%), elevator (10%), and restroom (7.5%).

Data acquired from PES Survey
Customer Rating – Interior Cleanliness

- This is a composite score which incorporates the appearance of the train interior (60%), and the appearance of any graffiti on the train (40%).

Customer Rating - Temperature

- Mean (Average) Updated 5-Point Scale

- Data acquired from PES Survey
Environment – Code of Conduct

Gender Based Harassment

Have you experienced gender-based sexual harassment at BART in the last six months?

Fare Evasion

Did you see anyone enter or exit the Station without paying their fare today?

Data acquired from PES Survey
Summary – Safety and Security

<table>
<thead>
<tr>
<th>Metric</th>
<th>FY23 Q4</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Safety</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle Incidents/Million Patrons</td>
<td>0.42</td>
<td>0.6</td>
<td>35.38% ▲</td>
</tr>
<tr>
<td>Unscheduled Door Openings/Million Car Miles</td>
<td>0.45</td>
<td>0.2</td>
<td>(2.27%) ▼</td>
</tr>
<tr>
<td>Rule Violations Summary/Million Car Miles</td>
<td>0.27</td>
<td>0.25</td>
<td>▼</td>
</tr>
<tr>
<td>Station Incidents/Million Patrons</td>
<td>1.41</td>
<td>2</td>
<td>4.72% ▲</td>
</tr>
<tr>
<td>OSHA-Recordable Injuries/Illnesses/Per OSHA</td>
<td>12.81</td>
<td>12</td>
<td>6.15% ▲</td>
</tr>
<tr>
<td>Lost Time Injuries/Illnesses/Per OSHA</td>
<td>7.81</td>
<td>6.5</td>
<td>1.38% ▲</td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Police Response Time per Emergency Incident</td>
<td>3.96</td>
<td>5</td>
<td>(7.02%) ▼</td>
</tr>
<tr>
<td>Bike Thefts</td>
<td>30</td>
<td>50</td>
<td>(114.28%) ▼</td>
</tr>
<tr>
<td>Auto Thefts/1,000 Parking Spaces</td>
<td>4.09</td>
<td>2</td>
<td>(71.30%) ▼</td>
</tr>
<tr>
<td>Auto Burglaries/1,000 Parking Spaces</td>
<td>4.32</td>
<td>3.5</td>
<td>(31.64%) ▼</td>
</tr>
<tr>
<td>BART Police Presence</td>
<td>9.1%</td>
<td>12%</td>
<td>(5.69%) ▼</td>
</tr>
<tr>
<td>Crimes Against Persons/Million Riders</td>
<td>9.15</td>
<td>2</td>
<td>(14.97%) ▼</td>
</tr>
</tbody>
</table>
Safety – Passenger

Station Incidents

Breakdown of 17 Station Incidents

- Escalator, 11
- Platform, 1
- Conc.., 1
- Other, 1
- Stairs, 3

Vehicle Incidents

Breakdown of 5 Vehicle Incidents

- On-Board, 3
- Struck by Door, 2

Station Incidents

- Incidents per Million Passengers
- FY22 Q4: Goal 1.2, Result 1.2
- FY23 Q1: Goal 1.2, Result 1.2
- FY23 Q2: Goal 1.2, Result 1.2
- FY23 Q3: Goal 1.2, Result 1.2
- FY23 Q4: Goal 1.2, Result 1.2

Vehicle Incidents

- Incidents per Million Passengers
- FY22 Q4: Goal 0.9, Result 0.9
- FY23 Q1: Goal 0.9, Result 0.9
- FY23 Q2: Goal 0.9, Result 0.9
- FY23 Q3: Goal 0.9, Result 0.9
- FY23 Q4: Goal 0.9, Result 0.9
Lost Time due to Injuries

- Trauma, 35
- Strain, 16
- Contusion, 7
- Other, 15
- 5
- 2

OSHA Recordable Injuries

- Trauma, 38
- Strain, 27
- Contusion, 15
- Other, 37
- Sprain, 6

Safety – Employee
Safety – Procedure Violations

Unscheduled Door Openings

- 10 Unscheduled Door Openings in FY23 Q4
  - 8 due to Passenger Action
  - 1 Human Error by Train Operator
  - 1 Equipment Failure

Rule Violations

- 6 Rule Violations for FY23 Q4
Security – Police Coverage

Police Presence

• Continued uniformed visibility, daytime and nighttime staffing at Civic Center

Police Response Time

• Goal met

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**BART Police Presence**

Did you see BART Police in the station today?
Did you see BART Police outside the station today?
Did you see BART Police on this train?

**BART Police Response Time**

Data acquired from PES Survey
Crime – Theft and Burglary

Bike Theft
- Goal met

Auto Theft
- Goal not met

Auto Burglary
- Goal not met
Crime – Against Persons

Bar chart showing the count of incidents for different types of crime against persons for FY22 Q4 to FY23 Q4:
- Robbery
- Electronic Robbery
- Electronic Theft
- Aggravated Assault
- Rape
- Homicide

Graph showing the crime per million passenger trip and the goal for Crime Against Persons.
Progressive Policing Data – July 2023

Progressive Policing Contacts are recorded by Crisis Intervention Specialist (CIS) Staff based on their daily interactions

**Bitfocus Application**
- Software went live on July 1\(^{st}\)
- Real-time field data instead of manual reports

**Additional Data Points**
- 310 Refused services
- 452 Informational resources provided
Questions?