Quarterly Service Performance Review
3rd Quarter, FY23 (January- March 2023)

Engineering & Operations Committee
June 22, 2023
Summary – Service Delivery

<table>
<thead>
<tr>
<th>Metric</th>
<th>FY23 Q3</th>
<th>Goal</th>
<th>Change from FY23 Q2</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>144295</td>
<td>184718</td>
<td>(1.30%)</td>
</tr>
<tr>
<td>Trains On-Time - Daily</td>
<td>56.2%</td>
<td>91.0%</td>
<td>(20.81%)</td>
</tr>
<tr>
<td>Customers On-Time - Daily</td>
<td>81.2%</td>
<td>94.0%</td>
<td>(2.73%)</td>
</tr>
<tr>
<td><strong>Peak</strong></td>
<td></td>
<td></td>
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<tr>
<td>Trains On-Time - Peak</td>
<td>52.7%</td>
<td></td>
<td>(23.74%)</td>
</tr>
<tr>
<td>Customers On-Time - Peak</td>
<td>74.2%</td>
<td></td>
<td>(12.23%)</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

18318 Delayed Trains Caused by Incidents

- External 80%
  - Societal 17%
  - Cancellations 8%
  - State of Good Repair 12%
- Internal 20%
  - Operations 20%
  - Vehicle 6%
  - Wayside 6%
  - Intrusion 34%
  - Police and Security 34%
  - Car Shortage 49%
  - Staffing Shortage 51%
  - Congestion 7%
  - Miscellaneous 6%
  - Passenger 3%
  - Weather 84%

Trains Delayed - Top Ten Single Incidents

- 03/21 Rain, 505
- 02/23 Rain, 473
- 03/28 Rain, 461
- 03/29 Rain, 451
- 03/10 Rain, 430
- 03/09 Rain, 420
- 03/06 Rain, 363
- 01/11 Rain, 349
- 02/24 Rain, 336
- 02/27 Rain, 334

Top ten incidents = 22.5% of delayed trains
Capacity – Ridership

- Ridership below budgeted goal
Missed Dispatches are scheduled trains that did not run OR partial runs that were not able to dispatch from origin.

Majority of missed dispatches are during weekday PM peak.

Weather was the primary cause, and is much lower in Q4.

Missed dispatches due to staffing shortage decreased dramatically in Q3.
Capacity – Passenger Loading

Passenger Load per Car for Top 5 Crowded Weekday Trains

Average Hourly Weekday Passenger Load per Car by Line

Legend
- Maximum of Top 5*
- 75th Percentile
- Median
- 25th Percentile
- Minimum of Top 5*

*Maximum & Minimum Values of Top 5 Crowded Trains with outliers removed

Typical Busiest Trains by Route
Punctuality – Trains On-Time

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

- **Weather**: 53%
- **Police and Security**: 11%
- **Passengers**: 4%
- **Intrusion**: 6%
- **Miscellaneous**: 4%
- **Car Shortage**: 4%
- **Wayside**: 9%
- **Staffing Shortage**: 4%

**Trains On-Time - Daily**

- 40%
- 50%
- 60%
- 70%
- 80%
- 90%
- 100%

**Trains On-Time - Peak**

- 40%
- 50%
- 60%
- 70%
- 80%
- 90%
- 100%

**Goal**

- 100%
- 90%
- 80%
- 70%
- 60%
- 50%
- 40%
Customer on-time performance was impacted by speed reductions due to weather.
Punctuality – Timed Train Meets

- 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*

---

**Northbound Meets at 19th Street**

```
<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
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<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
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</thead>
<tbody>
<tr>
<td>% Met N/B Weekday</td>
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<tr>
<td>Train On-Time</td>
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</tbody>
</table>
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**Southbound Meets at MacArthur**

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<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Met S/B Weekday</td>
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<tr>
<td>% Met S/B Weekend</td>
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<td></td>
</tr>
<tr>
<td>Train On-Time</td>
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<td></td>
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</tbody>
</table>
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### Summary – Railway Asset Availability

<table>
<thead>
<tr>
<th>Metric</th>
<th>FY23 Q3</th>
<th>Goal</th>
<th>Change from FY23 Q2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Station Equipment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elevators in Service - Station</td>
<td>98.3%</td>
<td>98%</td>
<td>-0.85%</td>
</tr>
<tr>
<td>Elevators in Service - Garage</td>
<td>98.9%</td>
<td>97%</td>
<td>-0.98%</td>
</tr>
<tr>
<td>Escalators in Service - Street</td>
<td>91.8%</td>
<td>93%</td>
<td>-4.92%</td>
</tr>
<tr>
<td>Escalators in Service - Platform</td>
<td>96.5%</td>
<td>96%</td>
<td>-1.88%</td>
</tr>
<tr>
<td>Automatic Fare Collection - Gates</td>
<td>98.8%</td>
<td>99%</td>
<td>0.02%</td>
</tr>
<tr>
<td>Automatic Fare Collection - Vendors</td>
<td>98.7%</td>
<td>95%</td>
<td>0.51%</td>
</tr>
<tr>
<td><strong>Revenue Vehicle</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle MTBSD - (Hours)</td>
<td>8184</td>
<td>6500</td>
<td>40.01%</td>
</tr>
<tr>
<td>4 AM - Car Availability</td>
<td>651</td>
<td>636</td>
<td>-4.22%</td>
</tr>
<tr>
<td>DMU - MDBF (Miles)</td>
<td>93392</td>
<td>20000</td>
<td>490.38%</td>
</tr>
<tr>
<td><strong>Wayside Equipment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Track</td>
<td>0.01</td>
<td>0.30</td>
<td>88.88%</td>
</tr>
<tr>
<td>Transportation</td>
<td>1.82</td>
<td>0.50</td>
<td>49.90%</td>
</tr>
<tr>
<td>Traction Power</td>
<td>0.83</td>
<td>1.00</td>
<td>27.40%</td>
</tr>
<tr>
<td>Wayside Train Control System</td>
<td>1.70</td>
<td>1.30</td>
<td>5.55%</td>
</tr>
<tr>
<td>Computer Control System</td>
<td>0.08</td>
<td>0.30</td>
<td>82.51%</td>
</tr>
</tbody>
</table>

**Goal Met**
- 79%

**Goal Not Met <5%**
- 14%

**Goal Not Met >5%**
- 7%
Railway Asset Availability – Detail

Breakdown of 3694 Trains Delayed by Incidents due to Railway Asset Unavailability

- Wayside, 44%
- Staffing Shortage, 20%
- Car Shortage, 19%
- Vehicle, 12%
- Operations, 4%

Trains Delayed – Three Worst Asset-Related Incidents by Department

<table>
<thead>
<tr>
<th>Department</th>
<th>Incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traction Power</td>
<td></td>
</tr>
<tr>
<td>01-26 3rd Rail Insulator Damage</td>
<td>80</td>
</tr>
<tr>
<td>01-21 Blown 3rd Rail Insulator</td>
<td>60</td>
</tr>
<tr>
<td>01-18 3rd Rail Misalignment</td>
<td>40</td>
</tr>
<tr>
<td>Vehicle</td>
<td></td>
</tr>
<tr>
<td>01-05 Car Shortage</td>
<td>100</td>
</tr>
<tr>
<td>01-06 Car Shortage</td>
<td>80</td>
</tr>
<tr>
<td>01-03 Car Shortage</td>
<td>60</td>
</tr>
<tr>
<td>Train Control</td>
<td></td>
</tr>
<tr>
<td>03-02 False Occupancy</td>
<td>100</td>
</tr>
<tr>
<td>01-12 Routing (Switch)</td>
<td>80</td>
</tr>
<tr>
<td>01-30 MUX</td>
<td>60</td>
</tr>
<tr>
<td>Operational Staff</td>
<td></td>
</tr>
<tr>
<td>01-05 Staffing Shortage</td>
<td>80</td>
</tr>
<tr>
<td>01-04 Staffing Shortage</td>
<td>60</td>
</tr>
<tr>
<td>01-02 Staffing Shortage</td>
<td>40</td>
</tr>
<tr>
<td>Computer</td>
<td></td>
</tr>
<tr>
<td>03-11 ICS Computer</td>
<td>20</td>
</tr>
<tr>
<td>02-21 ICS/FIP Comm. Link</td>
<td>10</td>
</tr>
<tr>
<td>01-30 Yard Computer</td>
<td>0</td>
</tr>
</tbody>
</table>

SAN FRANCISCO BAY AREA RAPID TRANSIT
Revenue Fleet – Reliability

- Fleet of The Future continues to outperform the legacy fleet
- January car availability impacted by wet weather and wheel flats
Wayside Equipment – Train Control Systems

Wayside Train Control System

- Two asset failures in January delayed a total of 94 trains
- An interlocking failure in March delayed 97 trains

Wayside Computer Control System

- Met goal
Wayside Equipment – Railway

Traction Power System
- Three incidents related to 3rd Rail equipment in January

Track System
- Met goal
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
Outlook – Transportation Staffing

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

• Station Agents
  • On pace to reach full-staffing this Summer
  • Continued but slowing pace of recruiting

• Rail Controllers
  • Five Rail Controllers in training

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

Station Elevator

- Goal met

Garage Elevator

- Goal met

*E-line Elevator and Escalator are included
Street Escalator

- Heavy rains impacted several street escalators
- Warm Springs and 16th St Station escalators were out of service for maintenance and repair

Platform Escalator

- Goal met
Gate Availability

- The availability goal changed from 99% to 98% due to an increase in maintenance work on aging gates
- Repaired damaged electrical conduits which caused delays in Q2

Vendor Availability

- Goal met
# Summary – Customer Experience

<table>
<thead>
<tr>
<th>Metric</th>
<th>FY23 Q3</th>
<th>Goal</th>
<th>Change from FY23 Q2</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>70.0%</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>10%</td>
<td>11.11%</td>
<td>▲</td>
</tr>
<tr>
<td>Fare Evasion</td>
<td>23.1%</td>
<td>6.33%</td>
<td>▲</td>
</tr>
</tbody>
</table>

▲ Gray arrows represent change from the previous quarter for metrics which do not have an established goal.
### Passenger Experience Survey (Scale Change)

**“Please rate the train car in which you are riding right now.”**

<table>
<thead>
<tr>
<th>New 5-point scale</th>
<th>Previous 4-point scale</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="New 5-point scale" /></td>
<td><img src="image" alt="Previous 4-point scale" /></td>
</tr>
</tbody>
</table>

- Switching from a 4- to a 5-point scale, adding a clear neutral choice for riders
- Anchored scale with balanced options for positive and negative ratings without assigning words that may or may not reflect how a rider feels
- Reporting mean score instead of top-2-box percentage, as this metric better reflects the results of a 5-point scale with a neutral midpoint.

### Customer Service Measure

#### Results with new 5-point scale

<table>
<thead>
<tr>
<th>Mean (Average) Reported</th>
<th>FY23 Q3</th>
<th>FY23 Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.9</td>
<td></td>
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</tbody>
</table>

#### Results from prior to FY23 Q3 with 4-point scale

<table>
<thead>
<tr>
<th>% of Passenger Ratings of “Excellent” or “Good”</th>
<th>FY22 Q3</th>
<th>FY22 Q4</th>
<th>FY23 Q1</th>
<th>FY23 Q2</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
Overall, customer service continue to report as top-2-box % since it was always 5-point scale.

In FY24, Customer Satisfaction will be expanded to show the key part of the rider experience: train, station, and parking.
Customer Service – Cases by Type

Breakdown of 4559 Inquiry Cases

Inquiry Cases – FY23 Q3

Compliment Cases – FY23 Q3
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%).
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

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

### Safety

<table>
<thead>
<tr>
<th>Metric</th>
<th>FY23 Q3</th>
<th>Goal</th>
<th>Change from FY23 Q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Incidents/Million Patrons</td>
<td>0.65</td>
<td>0.6</td>
<td>27.77%</td>
</tr>
<tr>
<td>Unscheduled Door Openings/Million Car Miles</td>
<td>0.39</td>
<td>0.2</td>
<td>(116.66%)</td>
</tr>
<tr>
<td>Rule Violations Summary/Million Car Miles</td>
<td>0.00</td>
<td>0.25</td>
<td>100%</td>
</tr>
<tr>
<td>Station Incidents/Million Patrons</td>
<td>1.48</td>
<td>2</td>
<td>(2.77%)</td>
</tr>
<tr>
<td>OSHA-Recordable Injuries/llnesses/Per OSHA</td>
<td>13.65</td>
<td>12</td>
<td>(19.10%)</td>
</tr>
<tr>
<td>Lost Time Injuries/Illnesses/Per OSHA</td>
<td>7.92</td>
<td>6.5</td>
<td>(16.98%)</td>
</tr>
</tbody>
</table>

### Security

<table>
<thead>
<tr>
<th>Metric</th>
<th>FY23 Q3</th>
<th>Goal</th>
<th>Change from FY23 Q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bike Thefts</td>
<td>14</td>
<td>50</td>
<td>50.00%</td>
</tr>
<tr>
<td>Auto Thefts/1,000 Parking Spaces</td>
<td>2.39</td>
<td>2.0</td>
<td>(21.03%)</td>
</tr>
<tr>
<td>Auto Burglaries/1,000 Parking Spaces</td>
<td>3.28</td>
<td>3.5</td>
<td>(57.98%)</td>
</tr>
<tr>
<td>BART Police Presence</td>
<td>9.6%</td>
<td>12%</td>
<td>7.44%</td>
</tr>
<tr>
<td>Crimes Against Persons/Million Riders</td>
<td>7.96</td>
<td>2</td>
<td>16.37%</td>
</tr>
</tbody>
</table>
Safety – Passenger

Station Incidents

- Breakdown of 16 Station Incidents
  - Escalator, 9
  - Platform, 3
  - Concourse, 2
  - Stairs, 1
  - Elevator, 1

Vehicle Incidents

- Breakdown of 7 Vehicle Incidents
  - On-Board, 3
  - Struck by Door, 2
  - Alighting, 1
  - Gap Fall, 1

![Station Incidents Graph]

- Results
- Goal

![Vehicle Incidents Graph]

- Results
- Goal

Incidents per Million Passengers
Lost Time due to Injuries

OSHA Recordable Injuries
Safety – Procedure Violations

Unscheduled Door Openings

- February 2023 – 3 Unscheduled Openings
  - 1 due to Train Operator Error
  - 2 due to Passenger use of Emergency Door Release
- March 2023 – 5 Unscheduled Openings
  - All due to Passenger use of Emergency Door Release

Rule Violations

- No rule violations in FY23 Q3
Security – Police Coverage

Police Presence

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

Police Response Time

- Goal met

Data acquired from PES Survey
Crime – Theft and Burglary

**Bike Theft**
- Goal changed to less than 50 bike thefts in Q2 of FY23
- Goal met

**Auto Theft**
- Goal changed to two auto thefts per 1,000 parking spaces in Q2 of FY23
- Goal not met

**Auto Burglary**
- Goal changed to 3.5 crimes per 1,000 parking spaces in Q2 of FY23
- Goal met

---

**Bike Theft**
- Results vs. Goal

**Auto Theft**
- Results vs. Goal

**Auto Burglary**
- Results vs. Goal
Crime – Against Persons

- **Electronic Robbery**
- **Robbery**
- **Electronic Theft**
- **Aggravated Assault**
- **Rape**
- **Homicide**

<table>
<thead>
<tr>
<th>Count of Incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY22 Q3</td>
</tr>
<tr>
<td>Electronic Robbery</td>
</tr>
</tbody>
</table>

**Crime Against Persons**

- **Crime Per Million Passenger Trip**
- **Goal**

<table>
<thead>
<tr>
<th>Crime Per Million Passenger Trip</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY22 Q3</td>
<td>FY22 Q4</td>
</tr>
</tbody>
</table>
Progressive Policing – Contacts & Referrals

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

**FY23 Q3 CIS Contacts by Type (15038)**
- Quality of Life Call, 5835
- Welfare Checks, 4195
- Outreach Contact, 2299
- Other, 2453

**FY23 Q3 Community Resource Referrals (238)**
- Other/Educational
- Medical Services
- Abode
- La Familia
- BMD
- Gubbio
- BACS
- CHF
- CORE
- Housing
- SF Volunteers
- SF Critic
- Treaty
- First Choice
- Life Move
- SF HR 360
- Warming Ctr
Bitfocus Application for Crisis Intervention Specialists

- Software installed; configuration underway
- Go-live scheduled for June 28th
- New Progressive Policing data for Q1 FY2024
Questions?