Next Generation Fare Gates Update
Update of Efforts (since June 11, 2020)

✓ Board Presentation – June 11
✓ Develop/Publish RFEI
✓ Field Test Richmond ADA Fare Gate (AFG)
✓ Order material
✓ Design Regular Fare Gate (RFG)
✓ Revised Funding/Cash Flow to Fiscal Year (FY)
Field Test of Richmond ADA Fare Gate (AFG)

Design Iterations, Modifications, Challenges

- Installed May 30, 2020
- Software changes for Door Alignment
- Design Change for Bolt Wear
- Lengthen Panel to reduce crawling under

Effectiveness

<table>
<thead>
<tr>
<th>Forced Opening Incidents</th>
<th>Weekly Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before Retrofit</td>
</tr>
<tr>
<td>(AFG) Prototype</td>
<td>478</td>
</tr>
<tr>
<td>Non-AFGs</td>
<td>30</td>
</tr>
<tr>
<td><em>Richmond Station Totals</em></td>
<td>508</td>
</tr>
</tbody>
</table>

Weekly averages as of October 16, 2020
Request For Expression of Interest (RFEI) Timeline

✓ Diverse 16-member Steering Committee
✓ Ensures the business and technical needs for District Departments are identified and met within the RFEI.
✓ The RFEI Package:
  • Preliminary requirements
  • Developed questions to engage the industry:
    • innovative solutions on design features, functionality, and implementation
  • 10 Publications & 12 Leading Fare Gate Suppliers

Published & Advertised: September 28, 2020
Deadline for Submitting Questions: October 28, 2020
Deadline for Response Submissions: December 4, 2020
Today
RFEI Response

Industry Publications
Mass Transit
Metro Magazine
Wired
Mass Transit Network
Progressive Railroading
Railway Age
Intelligent Transport
ITS International
Global Mass Transit
International Light Rail Magazine

Suppliers/Vendors Outreach
Targeted Vendors:
Conduent
Cubic
Gunnebo
Mikroelektronika
Scheidt & Bachmann
STTraffic
Thales

Other interested Vendors:
Indra
Nippon Signal
Omron
Shanghai Huaming Intelligent Terminal Equipment CO., LTD
ST Electronics (Singapore Technologies Electronics Limited)

Non Vendor Requests Received
EASIER (dba for Automatic Systems, SA)
Optex America
Solari Corp
Acumen
Virginkar & Associates
Rebel Group
RFEI Questions Received

- Total of 118 questions received from 3 interested parties.
- All the questions and answers were posted on the website

“How is off-the-shelf being defined in this RFEI?”

“Do you strictly prefer pneumatic solution or are you open to discuss another solution(s)?”

“Is prior securing of full funding for all phases of the faregate project a prerequisite for issuance of an RFP?”

“Does BART have a Maintenance Management System in place?”

“Can BART please provide a detailed engineering drawing or template for the location of conduit and other physical infrastructure”

“Would BART consider a project proposal with a sequence and timeline that would accelerate implementation...?”

https://bart.gov/about/projects/fare-gate
## High Priority Gates - Coliseum Station

<table>
<thead>
<tr>
<th></th>
<th>Before Installation</th>
<th>Post Installation</th>
<th>The new AFG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entries</td>
<td>1049</td>
<td>1175</td>
<td>57</td>
</tr>
<tr>
<td>Exits</td>
<td>1058</td>
<td>1105</td>
<td>47</td>
</tr>
</tbody>
</table>

*Average daily count, week of 9/28/20*

Installed by Internal BART Forces September 25
High Priority Gates - Concord Station

<table>
<thead>
<tr>
<th>Concord Station Totals *</th>
<th>Before Installation</th>
<th>Post Installation</th>
<th>The new AFG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entries</td>
<td>888</td>
<td>915</td>
<td>27</td>
</tr>
<tr>
<td>Exits</td>
<td>857</td>
<td>879</td>
<td>22</td>
</tr>
</tbody>
</table>

*Average daily count, week of 11/2/20

Installed by Internal BART Forces October 30
Elevator Enclosures - Highest Priority Stations

Completed Stations
• Coliseum
• Concord
• 12th Street
• South Hayward
• Berkeley
• Montgomery - Dec 2020*

Remaining Stations
• El Cerrito Del Norte
• Embarcadero
• Powell
• 19th Street
• Walnut Creek
• North Berkeley
• El Cerrito Plaza
• Rockridge
• Orinda
• Civic Center

In progress/Scheduled Station
• Bay Fair
• Balboa Park

* Fare Gate has been installed, needs conversion to new style.
Progress on a Regular Fare Gate (RFG) Prototype

Conceptual Prototype Coming November 2020
Why Fruitvale Station for the prototype:

• It has a single fare gate array in view of the station agent
• No structural/electrical modifications needed
• It is in close proximity for response from both engineering and maintenance
Next phase: Design and Installation of an Array

Activities:
• Finalize requirement, design, prototype, coding, and testing
• Obtain array design approval from stakeholders
• Procurement, production, and delivery
• Field installation

Challenges:
• Material procurement and lead times.
• Necessary infrastructure improvements
TriReader 4 and Clipper 2 Updates

- TR4 - Cubic’s next generation card validator
  - Required to implement open payments
  - PCI and EMV compliant
- Acquisition, integration and installation of the TR4 on BART equipment funded by Clipper
- Will be integrated into new faregates
- Legacy gate installation requires specific physical mounting for EMV compliance and open payment acceptance
Open Payment Update

- Open payments – use of contactless credit/debit cards for fare payment at a transit point-of-entry/exit (gates)
- MTC to exercise open payment option
- Clipper® positioned to begin processing open payments as early as 2022
- Contactless cards use near-field communication (NFC) to transmit payments at faregates
- Contactless cards have a unique symbol on the front or back
Project and Funding Needs Timeline (LATEST)

**PROJECT TIMELINE**

- **2020**
  - May: Develop/Publish RFEI
  - Jun: Staff Review/Decision RFEI Responses
  - Jul: Publish RFP
  - Aug: Award / Install Gates System Wide

- **2021**
  - May: Field Test - Richmond
  - Jun: Installation – Coliseum & Concord
  - Jul: Continue Installation at High Priority Stations
  - Aug: Install Gates

- **2022**
  - May: Design/Build Prototype Install/Field Test
  - Jun: Monitor Prototype

- **2023**
  - May: Staff Review/Decision
  - Jun: RFEI Responses
  - Jul: Installation
  - Aug: Field Test – Coliseum & Concord

- **2024**
  - May: Staff Review/Decision
  - Jun: RFEI Responses
  - Jul: Installation
  - Aug: Field Test – Coliseum & Concord

- **2025-2026**

**FUNDING TIMELINE**

- **FY 2021**
  - $19M
  - BART, $1M
  - Counties, $16M
  - RR, $10M
  - 5307, $8M
  - 21%

- **FY 2022**
  - $23M
  - BART, $7M
  - Counties, $33M
  - 26%

- **FY 2023**
  - $39M
  - BART, $6M
  - Counties, $6M
  - 43%

- **FY 2024**
  - $9M
  - BART, $3M
  - Counties, $6M
  - 10%

- **TOTAL FUNDING NEED**
  - $90M

- **% and $ breakdown by funding source**
  - BART: $10M
  - Counties: $33M
  - RR: $10M
  - 5307: $8M

- **% of $90m, by year**
  - FY 2021: 21%
  - FY 2022: 26%
  - FY 2023: 43%
  - FY 2024: 10%

"Phased installation based on availability of funding"
Funding
Funding Framework

• Total Project Cost: $90M
• Funding strategy
  • BART District Counties: ~50%/50% share County/BART
  • Non-BART District Counties: 100% county share
• Work with County Transportation Agencies (CTAs) and SFO Airport to identify funds
• Advance manufacturing and installation of fare gates in phases tied to county funding availability/timing
Funding Progress

• Identified $35M BART sources, including planned future funds & grant opps
• Actively engaged BART District County Transportation Agencies (CTA) to fund county share in advance of and following June 11 Board meeting
• Following CTAs’ grants and sales tax funding processes – many delayed due to potential COVID-19 impacts to sales tax revenue receipts/forecasts
• ACTC – submitting documentation in early December in support of Measure BB programming request
• SFCTA
  – October, submitted project info in preparation for planned Prop K reauthorization – currently targeting November 2021 ballot
  – August, submitted application for Prop AA funding for the Next Generation accessible fare gates in SF & DC Stations – not successful
• CCTA
  – Planning STIP reprogramming request in Fall 2021
  – Will work to include in Measure J reauthorization
## Target Funding Plan

Next Generation Fare Gates Systemwide = $90M

<table>
<thead>
<tr>
<th>County/Segment</th>
<th>Total # of Fare Gates</th>
<th>% of Total</th>
<th>Total Cost ($M)</th>
<th>Estimated County/SFO Contribution ($M)</th>
<th>Estimated BART Contribution ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alameda (ex. 580 Corr.)</td>
<td>243</td>
<td>34%</td>
<td>30.59</td>
<td>15.29</td>
<td>15.29</td>
</tr>
<tr>
<td>580 Corridor</td>
<td>34</td>
<td>5%</td>
<td>4.28</td>
<td>4.28</td>
<td>0.00</td>
</tr>
<tr>
<td>Contra Costa</td>
<td>117</td>
<td>16%</td>
<td>14.73</td>
<td>7.36</td>
<td>7.36</td>
</tr>
<tr>
<td>San Francisco</td>
<td>199</td>
<td>28%</td>
<td>25.05</td>
<td>12.52</td>
<td>12.52</td>
</tr>
<tr>
<td>San Mateo (ex. SFO)</td>
<td>57</td>
<td>8%</td>
<td>7.17</td>
<td>7.17</td>
<td>0.00</td>
</tr>
<tr>
<td>SFO</td>
<td>25</td>
<td>3%</td>
<td>3.15</td>
<td>3.15</td>
<td>0.00</td>
</tr>
<tr>
<td>Santa Clara</td>
<td>40</td>
<td>6%</td>
<td>5.03</td>
<td>5.03</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>715</strong></td>
<td></td>
<td><strong>90.00</strong></td>
<td><strong>54.82</strong></td>
<td><strong>35.18</strong></td>
</tr>
</tbody>
</table>
Fund Sources – BART $35.18 million

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount ($M)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTA Section 5307</td>
<td>7.00</td>
<td>MTC-administered TCP Program</td>
</tr>
<tr>
<td>Measure RR</td>
<td>10.00</td>
<td>Access Program Funds</td>
</tr>
<tr>
<td>Capital Allocations/Other Grants</td>
<td>7.18</td>
<td>Future Year Funds</td>
</tr>
<tr>
<td>M&amp;E Project Deferrals</td>
<td>11.00</td>
<td>Part of overall M&amp;E Project Reprioritization Process</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35.18</strong></td>
<td></td>
</tr>
</tbody>
</table>

- Continuing systematic review of capital projects and project closeouts to identify funding opportunities
- May be some future opportunities with parking revenue program in later years
- Pursuing additional grant opportunities
- Advocate for federal Infrastructure Investment Stimulus
## Potential Sources – BART District Counties

<table>
<thead>
<tr>
<th>Source</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alameda County</strong></td>
<td></td>
</tr>
<tr>
<td>Measure BB</td>
<td>Subject to ACTC Approval</td>
</tr>
<tr>
<td>RM2</td>
<td>Savings from WSX; subject to MTC Approval</td>
</tr>
<tr>
<td>Measure B</td>
<td>Savings from WSX; subject to ACTC Approval</td>
</tr>
<tr>
<td><strong>Total - Alameda County</strong></td>
<td>$ 19.57 million</td>
</tr>
<tr>
<td><strong>Contra Costa County</strong></td>
<td></td>
</tr>
<tr>
<td>State Transportation Improvement Pr</td>
<td>Subject to support by RTPCs, CCTA, MTC, and CTC</td>
</tr>
<tr>
<td>Measure J</td>
<td>Station Modernization; subject to CCTA Approval</td>
</tr>
<tr>
<td>Future Sales Tax Measure</td>
<td>Reauthorization of Measure J, timing TBD</td>
</tr>
<tr>
<td><strong>Total - Contra Costa County</strong></td>
<td>$ 7.36 million</td>
</tr>
<tr>
<td><strong>San Francisco County</strong></td>
<td></td>
</tr>
<tr>
<td>Proposition K</td>
<td>Subject to voter approval of Prop K Reauthorization and SFCTA Approval of reprogramming of existing Prop K funds</td>
</tr>
<tr>
<td><strong>Total - San Francisco County</strong></td>
<td>$ 12.52 million</td>
</tr>
<tr>
<td><strong>Total - Three BART District Counties</strong></td>
<td>$ 39.46 million</td>
</tr>
</tbody>
</table>
# Potential Sources – Non-BART District Counties

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount ($M)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Mateo County - Measure W</td>
<td>7.17</td>
<td>First Call for Projects in FY21; extremely competitive program</td>
</tr>
<tr>
<td>SFO Airport Funds</td>
<td>3.15</td>
<td>Potential to leverage SFO Funds</td>
</tr>
<tr>
<td>Santa Clara VTA</td>
<td>5.03</td>
<td>O&amp;M Agreement</td>
</tr>
<tr>
<td><strong>Total Non-BART District Counties</strong></td>
<td><strong>15.36</strong></td>
<td></td>
</tr>
</tbody>
</table>
Next Steps

• Responses to RFEI December 4
• Evaluate RFEI Responses
• Monitor Fruitvale prototype in the field
• Install AFGs at high priority stations
• Continue with array design
• Submit reprogramming request to CTAs for county funding contributions
• Pursue Grant Opportunities
Thank you