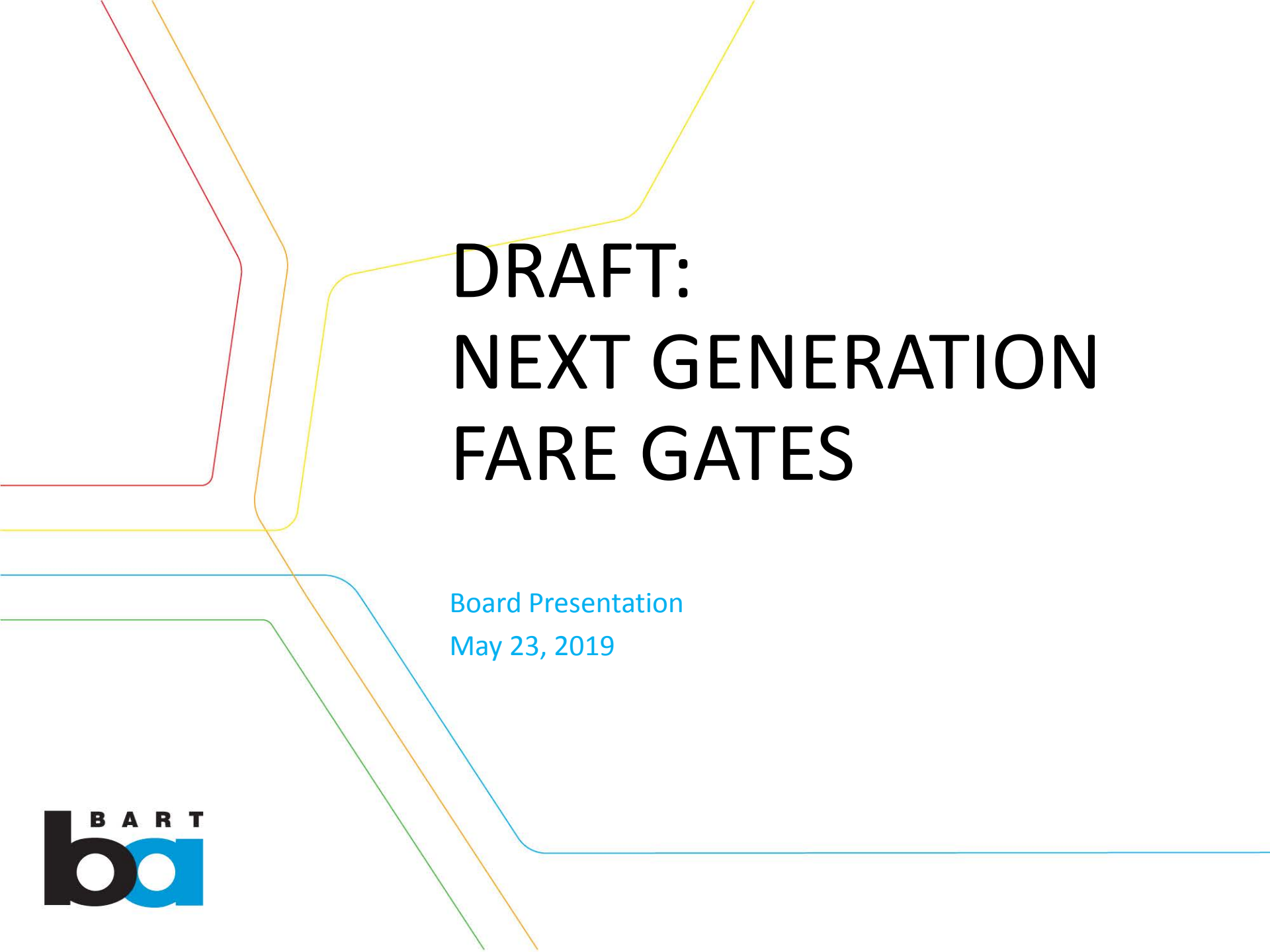
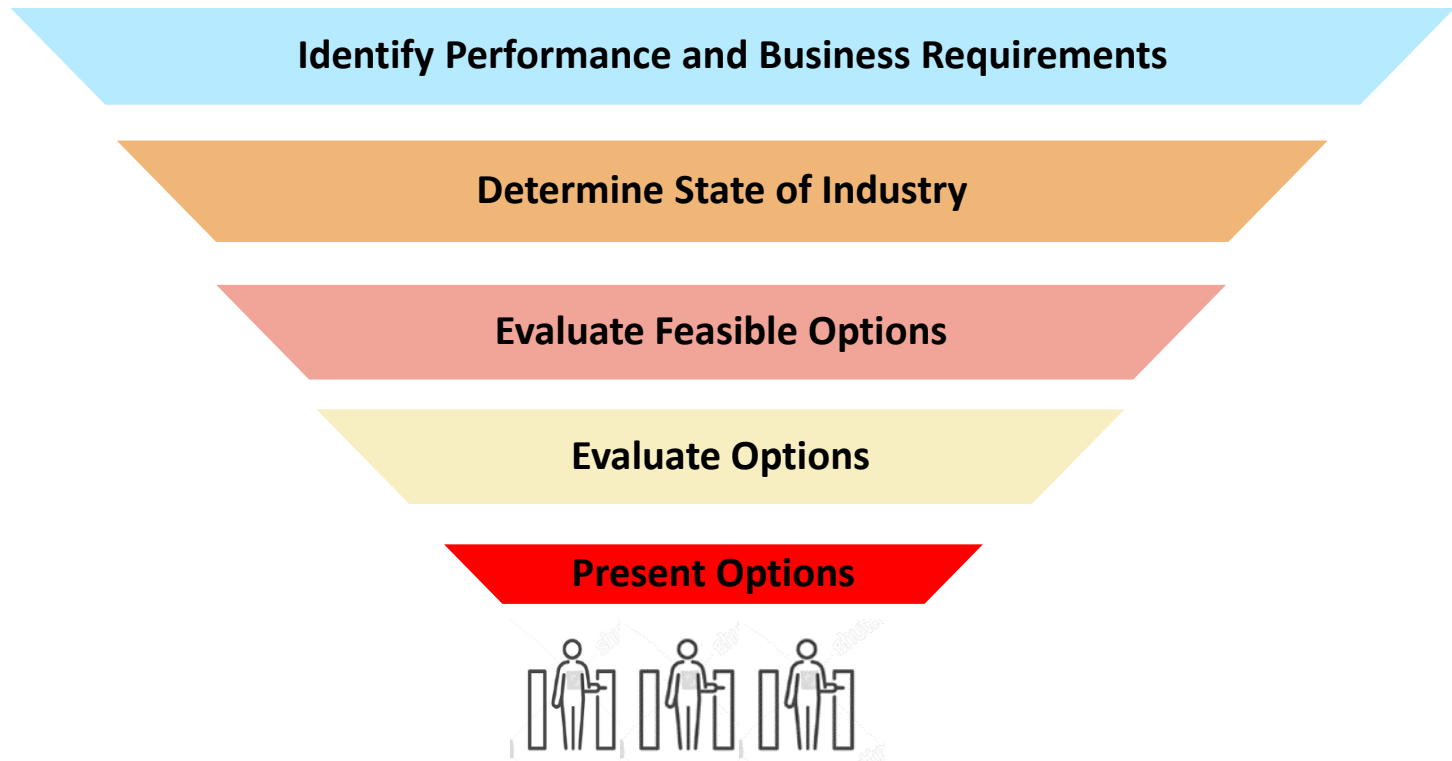


A decorative graphic consisting of several colored lines (red, orange, yellow, blue, green) that start from the left edge and extend towards the right, with some lines curving and others straight, creating a modern, abstract background.

DRAFT: NEXT GENERATION FARE GATES

Board Presentation
May 23, 2019

Tasks and Steps Completed



Performance & Business Criteria



- Reliability
- Maintainability
- Fare Evasion Reduction
- Improved Throughput
- Provide more Modern Appearance
- Off-the-Shelf Technology
- Implementation Schedule

State of Industry: Highlights

- New Fare Gates Provide
 - Existence of Multiple Potential Vendors
 - Reliability – Potentially Equal to or better than existing
 - Maintainability – Comparable to existing electrical ADA gates/Not as good as existing pneumatic
 - Improved fare evasion protection
 - Jumping - Yes
 - Pushing Through - Potentially
 - Tailgating – Potentially
 - Provide more modern appearance
 - Off-the-shelf technology may require one time customization to integrate with Clipper/BART systems



Option 1: Modification to Existing Fare Gate



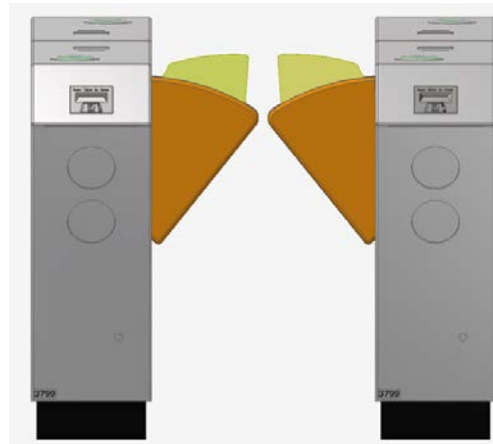
- Provided by Cubic Transportation Systems and installed in 2002-2003
- Mid-life refresh 2016-2017, to extend useful life by 15 years
- Accept Clipper Cards, BART-only Smart Cards, and magnetic strip tickets
- Integrated with BART's Data Acquisition System (DAS) back office
- 98% Availability
- Low maintenance



Option 1: Modification to Existing Fare Gate



Stacked and Cinched



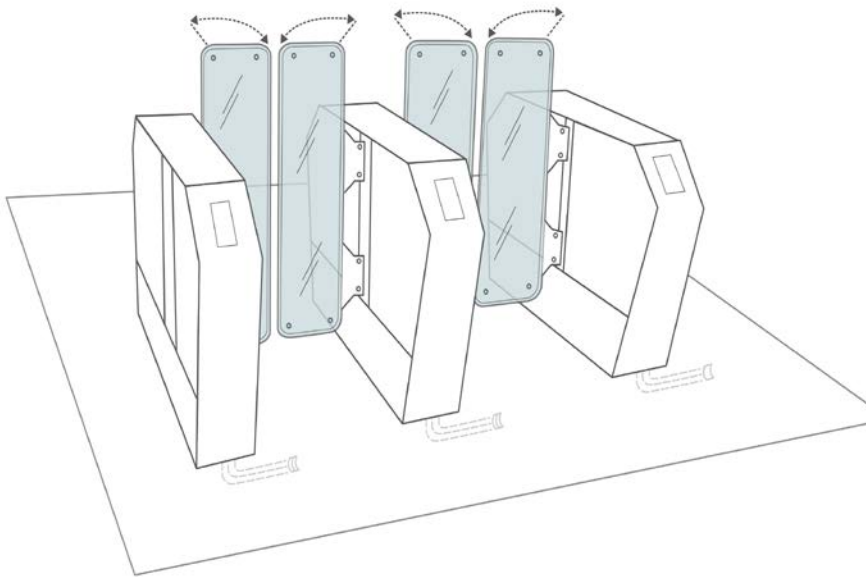
Pop-up Barrier

Pros & Cons

- Reliability – Equal to existing
- Maintainability – Equal to existing
- Fare Evasion Reduction
 - Jumping - Yes
 - Pushing Through - Yes
 - Tailgating - limited
- Throughput – 30 PPM
- Modern appearance – can be improved by using decorative leaves
- No new interface to Clipper/BART required

Option 2: New Swing Style Gate

2. SWING GATE CONCEPT

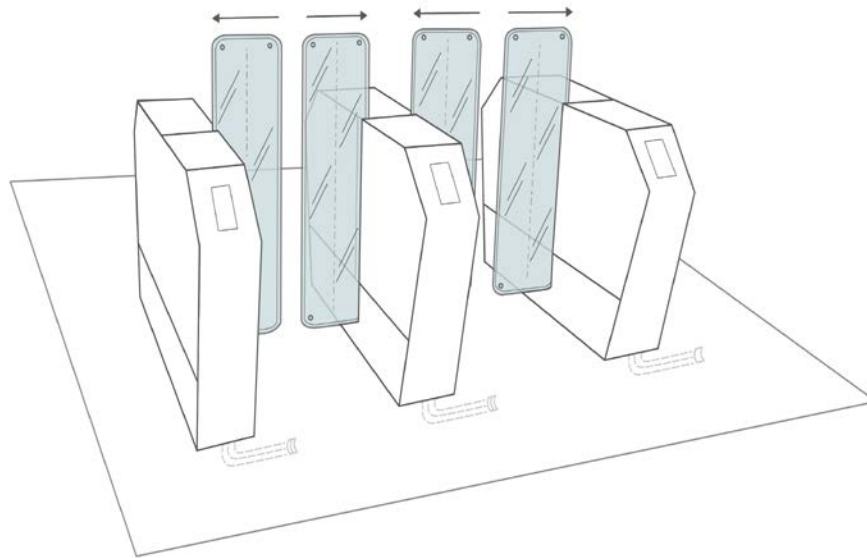


Pros & Cons

- Reliability – With customization maybe Comparable to existing
- Maintainability – Comparable to existing electrical ADA gates
- Effective against fare evasion
 - Jumping – Yes
 - Pushing Through – Yes
 - Tailgating – No
- Throughput – 30-PPM
- Modern Appearance - Yes
- Off-the-shelf gate technology – depending on vendor could require modification to integrate with Clipper/BART systems

Option 3: New Retractable Barrier

3. RETRACTABLE GATE CONCEPT



Pros & Cons

- Reliability – Slightly less than existing electrical ADA gates
- Maintainability – Comparable to existing electrical ADA gates
- Effective against fare evasion
 - Jumping – Yes
 - Pushing Through – Yes
 - Tailgating – Potentially limited
- Throughput – 30 PPM
- Modern look & feel
- Off-the-shelf gate technology – will require modification to integrate with Clipper and BART systems

Option 4: High Entry/Exit Gate



Pros and Cons

- Reliability – Very high
- Maintainability – Excellent
- Effective against fare evasion
 - Jumping – Yes
 - Pushing Through – Yes
 - Tailgating – Yes
- Throughput – 15 PPM
- Provides a retro look
- Off the shelf gate technology – depending on vendor could require modification to integrate with Clipper and BART systems
- No ADA gate option

Rough Order of Magnitude Costs

- Modifying existing fare gates - \$15-\$25M
 - Ongoing Maintenance - \$ 1.5-\$3M
- Installed new fare gates - \$115-\$135 M
 - Ongoing Maintenance – \$3-\$4 M per year

Pros & Cons

Category	Modified Gate	Swing Barrier	Retractable Barrier	High Entry/Exit (HEET)
Reliability	98%	Comparable to existing	Comparable to existing	Comparable to existing
Maintainability	No change	Less than existing	Less than existing	Less than existing
Fare Evasion	2 of 3	2 of 3	2 of 3	3 of 3(no ADA)
Improved Throughput	No Change	Comparable to existing	Comparable to existing	Reduced by 50%
Modern Appearance	Possible	Yes	Yes	No
Off the Shelf Technology	Yes	Maybe	No	Maybe
Implementation Schedule	1-2 years	6-7 years	6-7 years	6-7 years
Estimated Installation Costs	\$15-\$25 M	\$115-\$135 M	\$115-\$135 M	\$115-\$135

Moving Forward

Modification to the existing gate system:

- Cinch Modification
- ADA gate conversion from electric to pneumatic
- Stacked/Pop-up barrier (based on the pilots)

Desired feedback for Board:

- Identify the preferred option to be developed

Next steps:

- Identify funding
- Initiate Engineering Design