DRAFT:
NEXT GENERATION FARE GATES

Board Presentation

May 23, 2019

Tasks and Steps Completed

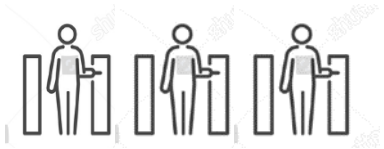
Identify Performance and Business Requirements

Determine State of Industry

Evaluate Feasible Options

Evaluate Options

Present Options



Performance & Business Criteria

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

State of Industry: Highlights

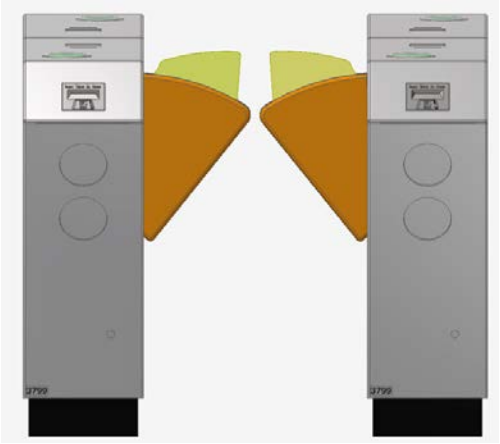
- New Fare Gates Provide
  - Existence of Multiple Potential Vendors
  - Reliability – Potentially Equal to or better than existing
  - Maintainability – Comparable to existing electrical ADA gates/Not as good as existing pneumatic
  - Improved fare evasion protection
    - Jumping - Yes
    - Pushing 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

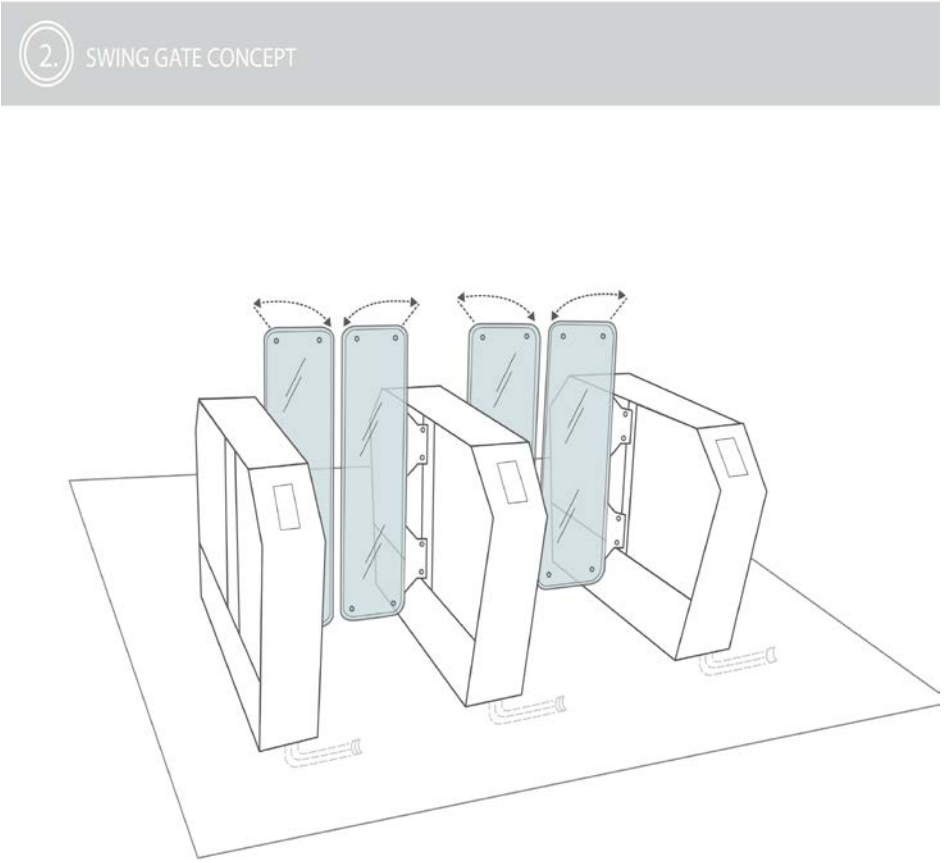


Pop-up Barrier

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

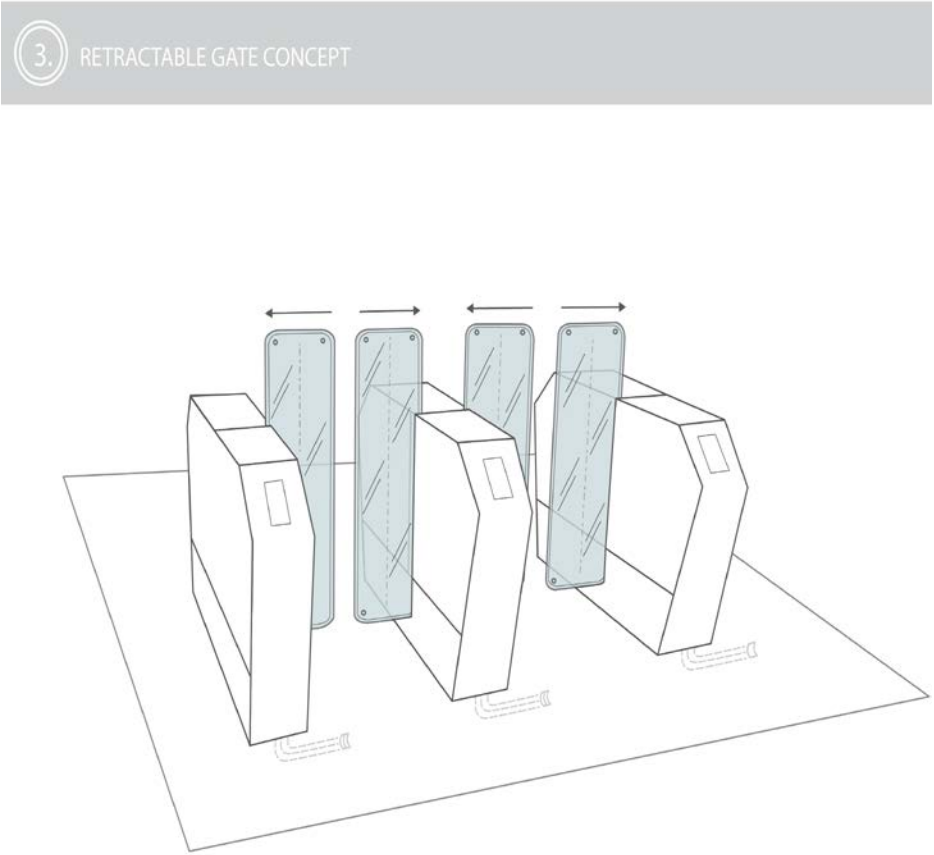
Option 2: New Swing Style Gate



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



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