



# Next Generation Fare Gate Vendor Selection

April 2023



# Overview

- Vendor Selection Process
- DBE & Diversity
- Fare Gate Features
- West Oakland Pilot
- Deployment Schedule
- Motion



# Vendor Selection Process

- Request for Information (RFEI) – Sep 28, 2020
- RFEI Responses – Dec 11, 2020
- Board approved procurement method – Jan 13, 2022
- Request for Proposal (RFP) - May 31, 2022
- Proposals Due – Oct 11, 2022
- Request to reject all Proposals – Dec 1, 2022
- Re-advertise RFP – Dec 2, 2022
- Proposals Due – Jan 10, 2023
- Informational Update to the Board – Mar 23, 2023
- Request to authorize the General Manager to award Contract - Today

Evaluation panel comprised of:

- 9 BART Cross Department Staff

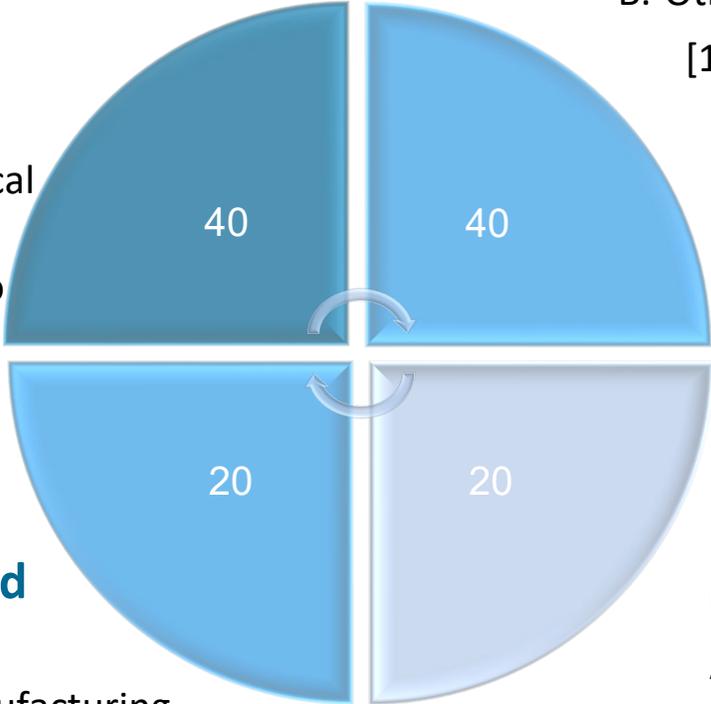
# Evaluation

## Technical Approach

- A. Ability to meet the project goals
- B. Extent the proposal meets and/or exceeds the Technical Specification requirements
- C. Extent of customization and new development required to meet the Technical Specifications
- D. The efficiency of the proposed approach to system integration
- E. Modularity and scalability of the solution

## Qualifications of the Firm and Proposer's Team

- A. Number of years in business manufacturing gates
- B. Strength of experience in fare gate manufacturing, system integration, training and equipment maintenance
- C. Strength of experience of the proposed team



## Price

- A. Lowest Price receives 20 points
- B. Others are based on a formula:  
 $[1 - (B - A) / A] \times C = \text{Final Cost Score}$  where:  
A – the lowest Proposer's Price  
B – Proposer's Price being scored  
C – the maximum number of cost points available

## Oral Interview

- A. Strength of the firm's understanding of BART's business needs
- B. Degree to which demonstrated features match BART's business needs
- C. Innovative feature available to BART

# Recommendation



“Sensors are cutting edge technology.”

“Monitoring tools are modern, slick and easy to use.”

## Evaluations Summary and Final Ranking

Proposer	Technical Approach	Team Qualifications	Price	Oral Interviews	Grand Total	Rank
Conduent Transport Solutions, Inc.	29	18	19.4	16.7	83.25	2
Cubic Transportation Systems, Inc.	26	18	20.0	14.3	77.89	3
STraffic America LLC	36	19	19.5	19.1	<b>93.21</b>	<b>1</b>

“Flexibility to reconfigure the gates.”

“Gates will be easy to maintain.”

“Test bench is comprehensive and organized.”



# Qualification Highlights

- Proposed solution met each BART requirement specifically, without exception
- Fare Gates in service for more than 3.94 billion rides annually (pre-COVID)
- 26 years of experience with sensor technology
- Fully open architecture and modular design
- Extensive integration experience with TR4 and legacy systems
- STraffic has deployed more than 16,000 fare gates



Beijing Mass Transit Railway  
Operation Corporation Limited  
北京市地铁运营有限公司



# The STraffic DBE & Diversity Team



## e<sup>2</sup> Engineering Training

- DBE certified training firm specializing in Intelligent Transportation Systems (ITS)
- Richard Easley, President: 35+ years experience in 34 states, DC, 22 countries



## VST Engineering

### Maintenance & Deployment Support, QA/QC Support

- DBE certified firm in the Bay Area
- 30 years collective experience delivering capital projects from conceptual design through implementation



## Pride Resource Partners LLC

### Contract Compliance, Scheduling, Supervisory Oversight

- Project & construction management organization, headquartered in CA
- Understands complex dynamics of critical infrastructure projects
- LGBT-owned & operated DBE; certified by the National LGBT Chamber of Commerce, Small Business certified by the CA DGS

Partnerships enhance STraffic's team experience and fulfill BART's project goals

# Community Engagement Commitment

- 2,000 Hours of Internship Opportunities in Partnership with Bay Area Community Based Organizations

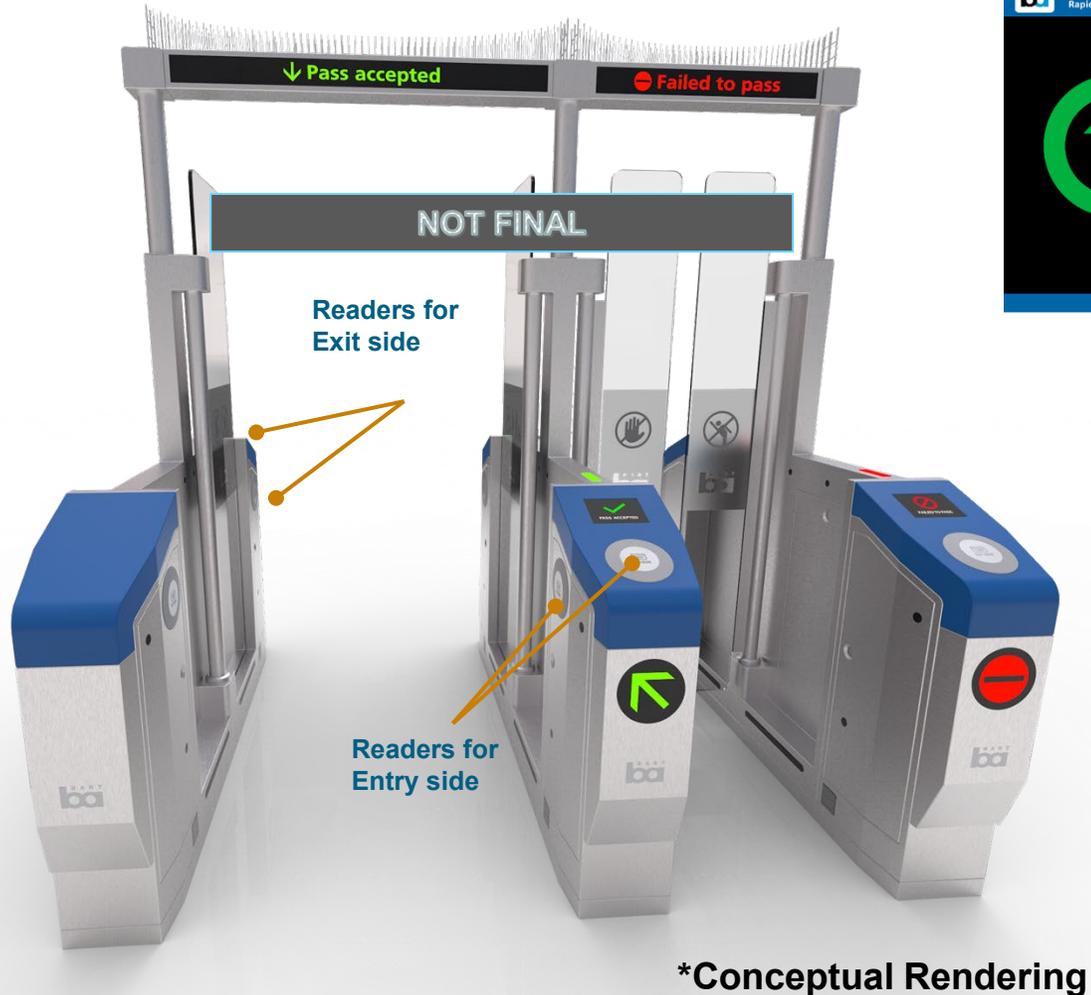


# Improved Customer Experience: Accessibility

- STraffic has worked extensively with the ADA community and incorporated learnings into fare gate designs.
  - Equipped with top and side-mounted readers
  - Sensor technology for safe access of persons and service animals
  - Aisle lighting, messaging, and color-coding options



# Improved Customer Experience: Customer Interface



Six (6) Readers per Aisle Possible

# Approach to Fare Evasion Management

## DETER

### Physical Features

### Fare Gate Performance



\*Conceptual Rendering

## DETECT

### Sensors

✓ Infrared



✓ 3D Sensor



### Audit Registers

✓ Gate Performance

Monitoring

## RESPOND

Fare Gate  
Activation

Alarms

Fare Gate  
Performance

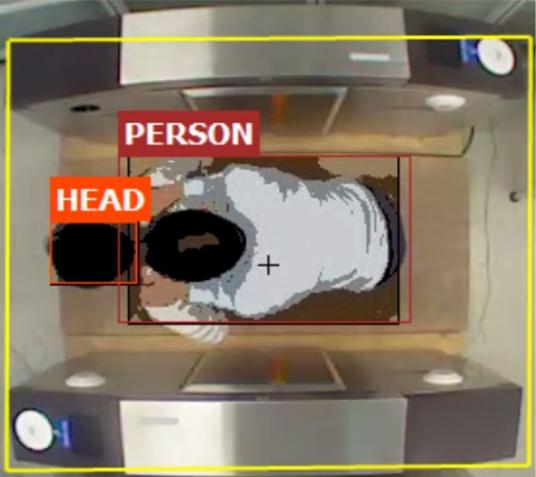
Reporting



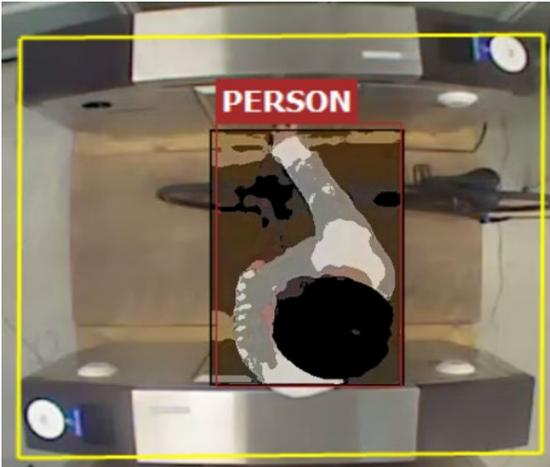
Data Supports Monitoring, Analytics and  
Ongoing Response

# Detect - Advanced Sensor Technology

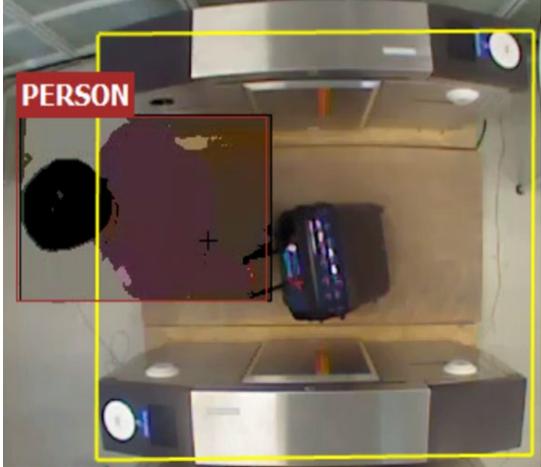
- ✓ Infrared
- ✓ 3D Sensor
- ✓ Camera



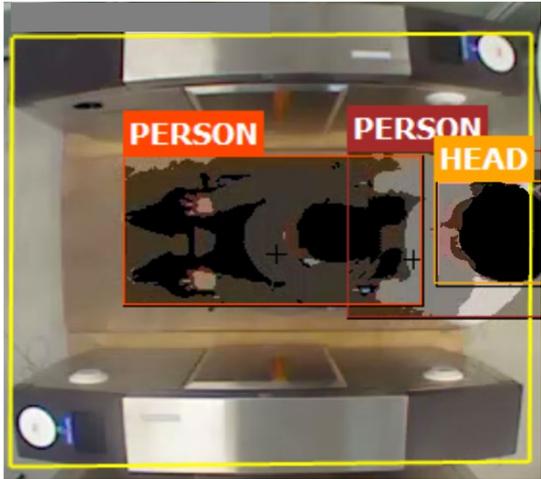
Piggybacking



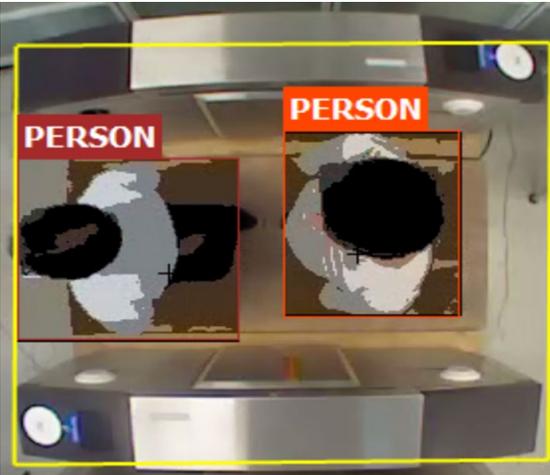
Bicycle



Luggage



Wheelchair (2 persons)

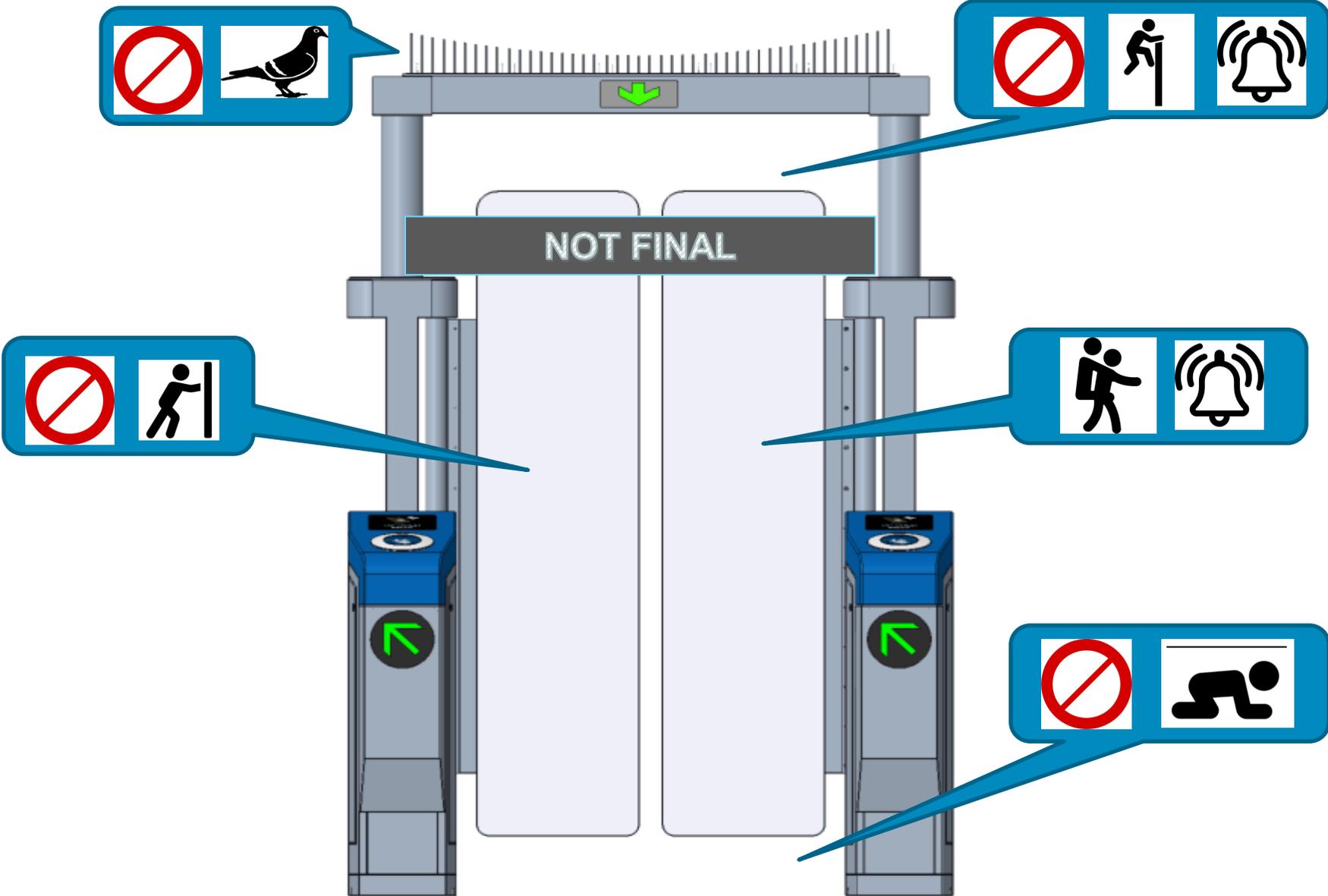


Tailgating



No facial recognition

# Deter



# Respond - Monitoring/Metrics

- Graphical User Interface for point-and-click, real-time control over fare gate.

The screenshot shows a web-based monitoring interface for BART fare gates. The interface includes a top navigation bar with 'Maintenance', 'Settings', and user information. The main content area is divided into several sections:

- Operation and Direction Modes:** A panel on the left showing modes like 'Connected-ST', 'Degraded mode', 'TMO off', 'Low-usage', and 'ADA 92%'. Below this are directional indicators for 'Passable' and 'Non-Passable'.
- Fare Gate Module Status:** A central panel showing two fare gate diagrams labeled 'PRIMARY' and 'SECONDARY'. A red circle on the PRIMARY gate indicates it is 'Out of Service', and an orange circle indicates 'Door Open'. A 'Reboot' button is visible.
- Real Time Fare Gate Operating Status:** A panel at the bottom left showing a 'FREE SIDE' indicator with a green arrow and an 'Entry' button.
- Real Time Fare Evasion Event Log:** A table on the right listing events with columns for Time, Code, Event Name, and Argument. Below the table, an 'Availability' metric is shown as 92.28%.

Callouts provide further details:

- Fare Gate Module Status:** \*Red - Out of Service, \*Orange - Door Open
- Real Time Fare Evasion Event Log:** Points to the event table.
- Service Availability for this Fare Gate:** Points to the 92.28% availability metric.

Time	Code	Event Name	Argument
03-30-2023, 17:11:22	025	Trying to open barriers detected on Exit	No argument
03-30-2023, 17:10:59	012	Barrier not closed	Clear
03-30-2023, 17:10:57	104	ADA barrier 2	Barrier operation fail
03-30-2023, 17:10:57	012	Barrier not closed	Detected
03-30-2023, 17:10:57	103	ADA barrier 1	Barrier operation fail
03-30-2023, 17:10:49	023	Tailgating detected on Exit	No argument
03-30-2023, 17:10:25	014	Trying to open barriers detected on Entry	No argument
03-30-2023, 16:59:17	005	Illegal entry detected	No argument

Availability: 92.28 %

# Improved Maintenance: Change Any Component

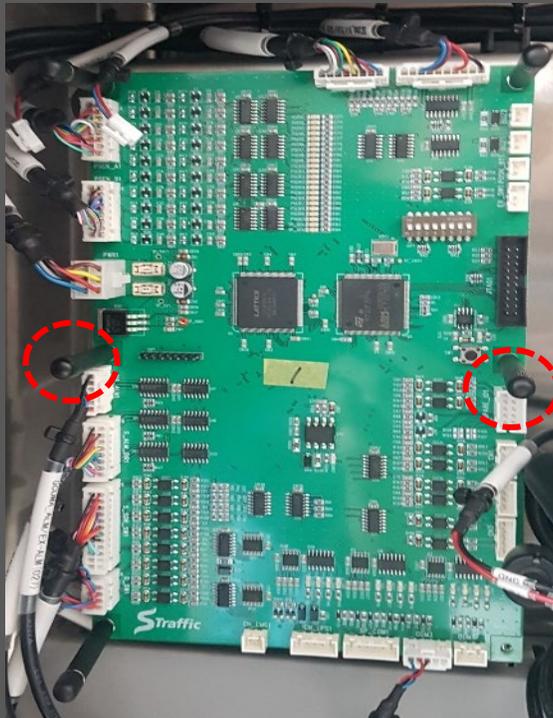
**<15 min** 

## No Tools Required

- Cabling
- Board Replacement

## Modular Design

- Plug and Play Replacement



## Self Diagnostic Tools

Bay Area Rapid Transit

Barrier power fault	<input type="radio"/>	Barrier not closed	<input type="radio"/>
Barrier signal fault	<input checked="" type="checkbox"/>	FG termination	<input checked="" type="checkbox"/>
Disk capacity over 90%	<input checked="" type="checkbox"/>	PPT connection failure	<input checked="" type="checkbox"/>
Safety sensor fault	<input checked="" type="checkbox"/>	GCU connection failure	<input type="radio"/>
UPS event	<input checked="" type="checkbox"/>	Parameter download	<input checked="" type="checkbox"/>
Not operation time	<input checked="" type="checkbox"/>		
OOS setting	<input checked="" type="checkbox"/>		
Parameter Activation	<input checked="" type="checkbox"/>		

**Close**

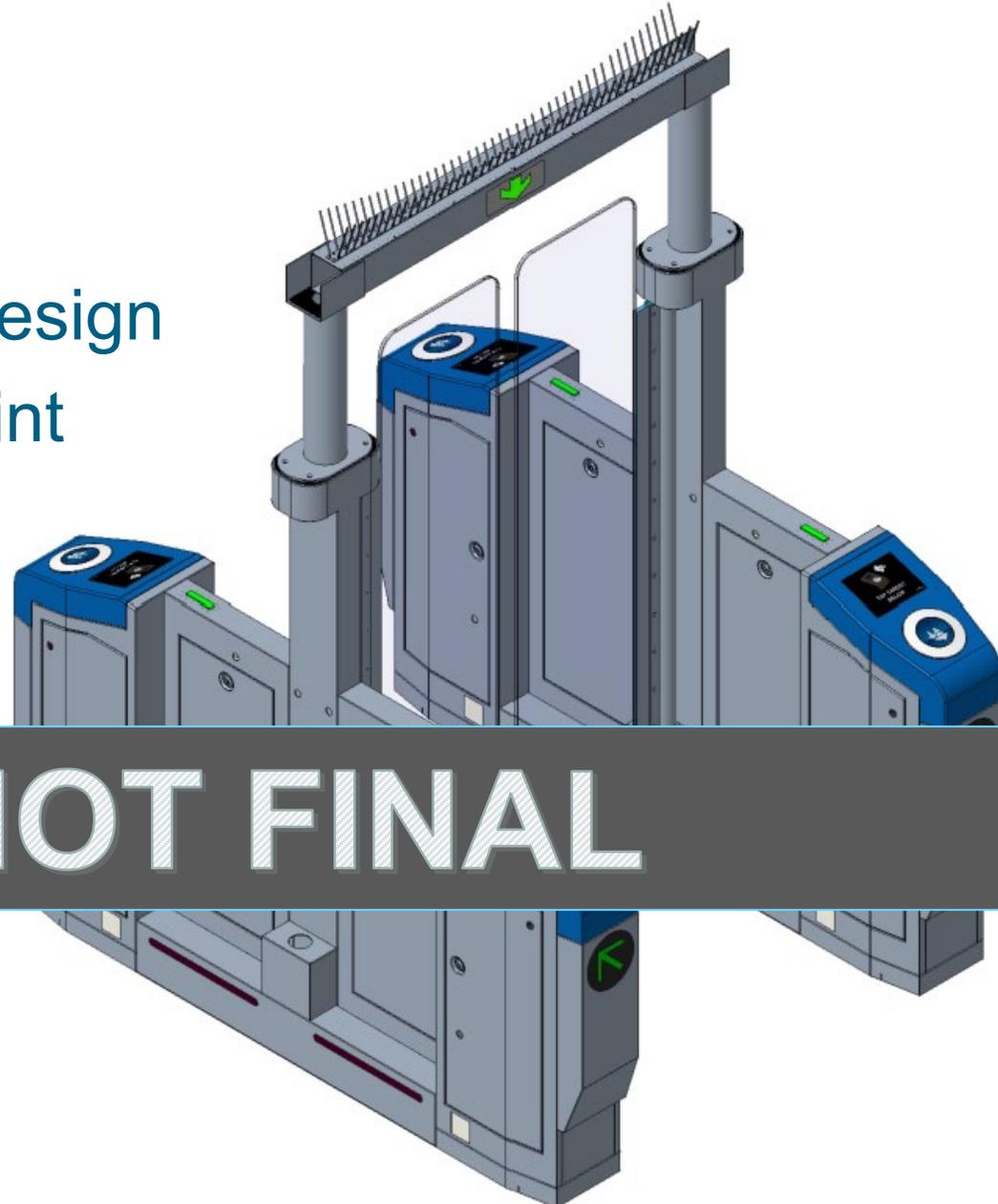
09:14:32

# Improved Troubleshooting—Comprehensive Test Bench



# Improved Installation:

- Modular Overhead Bridge Design
- Gate Fits on Existing Footprint



**NOT FINAL**

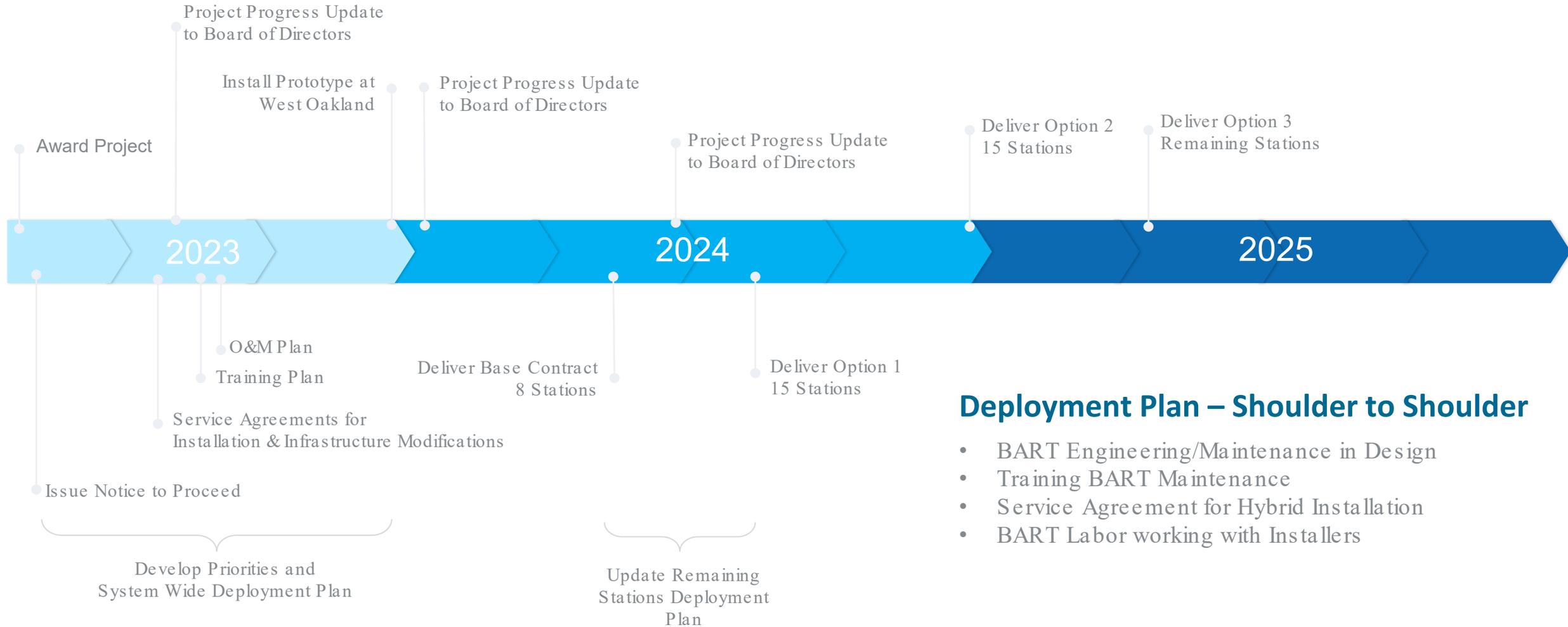
\*Conceptual Rendering

# Pilot West Oakland

- Single Array
- Geographically Close to Maintenance and Engineering Staff
- Investment in West Oakland



# Next Generation Initial Deployment Schedule



## Deployment Plan – Shoulder to Shoulder

- BART Engineering/Maintenance in Design
- Training BART Maintenance
- Service Agreement for Hybrid Installation
- BART Labor working with Installers

# Board Motion

- The Board finds that STraffic America, LLC has submitted the proposal in response to RFP No. 47CJ-230A that is the most advantageous to the District based on the highest evaluation score received (which considers the proposer's technical proposal, price proposal, and other factors).
- To that end, the General Manager is authorized to award Contract No. 47CJ-230A to STraffic America, LLC in the base contract amount of \$11,271,900 (including all applicable taxes) for the procurement of Next Generation Fare Gates, upon certification by the Controller-Treasurer that funding is available, pursuant to notification to be issued by the General Manager, and subject to the District's protest procedures and the Federal Transit Administration's requirements related to protests.
- The General Manager is further authorized to exercise any and all options for a total amount not-to-exceed \$47,160,000 (base price plus option prices) (including all applicable taxes) upon certification by the Controller-Treasurer that funding is available.

Aileen Hernandez  
Albert Louie  
Albert Schmitt  
Alex Caburnay  
Alex Walker  
Amanda Cruz  
Amanda Palmquist  
Anaïs Mailinge  
Antoin Vo  
Bradley Harris

Bruce King  
Calvin Yee  
Carlbert Fuertes  
Celestine Do  
Charlie Greer  
Dave Taylor  
David Garcia  
David Pultz  
David Wen  
Donna Lee

Emily Chou  
Evan Brown  
Fernando Flores  
Harmanjot Singh  
John Yen  
Jonathan Castaneda  
Kenneth Tolbert  
Lacy Vong  
Man Hong Lam  
Markus Ngo

Michael Hill  
Mitra Moheb  
Molly Golson  
Phaethon Brown  
Priya Mathur  
Qing Liu  
Ray Painter  
Raymond Pascual  
Richard Fuentes  
Rob Jaques

Robert Day  
Robert Franklin  
Shannon Dodge  
Shelehia Meisner  
Steven Dietrich  
Sunni Gunawardena  
Tony Zielonka  
Weldon Chen  
Wendy Wheeler

# Thank you!