



▶ Next Generation Fare Gates Update

January 11, 2024 | BART Board of Directors Meeting





Highlights

- West Oakland Prototype Installation
- Our Journey
- New Mechanical Locking Mechanism Enhancement
- Project Estimate – Earned Value Management
- Timeline
- Next 8 Stations

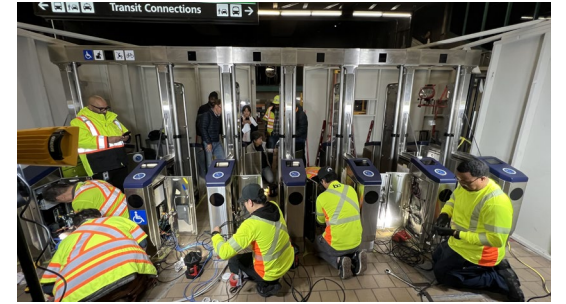
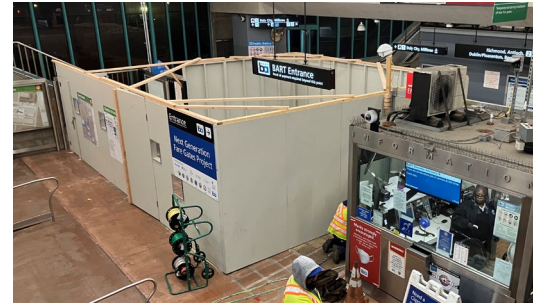
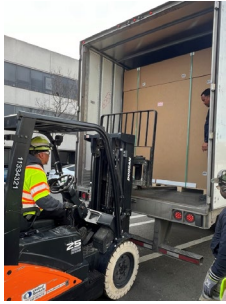
West Oakland Prototype Installation

Time-lapse Video

West Oakland Prototype Installation

2 Installations | 2 Different Locations

Simultaneous delivery, installation, and testing in the Lab & West Oakland station



Sun, Dec 10

Lab: Gate delivery & installation

Mon, Dec 11

Warehouse: Inspections completed

Tue, Dec 12

West Oakland: Temporary gates activated & Legacy gates taken out-of-service

Wed, Dec 13

West Oakland: Legacy gates removed & power cables installed

Thurs, Dec 14

West Oakland: Gate delivery & installation

Fri, Dec 15

Lab: Testing completed
West Oakland: Software upload & troubleshooting

Sat, Dec 16

West Oakland: Computer installed in gates

← **Lab:** Network/Software Troubleshooting & Testing →

Sun, Dec 17

Mon, Dec 18

Tue, Dec 19

Wed, Dec 20

Thurs, Dec 21

Fri, Dec 22

Sat, Dec 23

← **West Oakland & Lab:** Comprehensive Testing & Troubleshooting →

Transportation training

FCC certification

Begin Stress Testing

Sun, Dec 24

Mon, Dec 25

Tue, Dec 26

Wed, Dec 27

Thurs, Dec 28

← Stress Testing, ADA Zone Enhancements, Additional Training →

West Oakland Soft Opening
Final cleaning/barrier removed



West Oakland Prototype Installation

- Each Gate in the Array Subject to **260+** Tests
 - **125** Fare Collection Lab Tests
 - **90** Vendor Tests
 - **44** Commissioning Specific Tests
- Monitor & Control System Back Office Configuration
- Audible Feedback for Visually Impaired Customers
- Station Agent Access to Monitor Control System
- AI Sensor Programming for Safety Zone
- Station Agent Training



West Oakland Prototype Installation



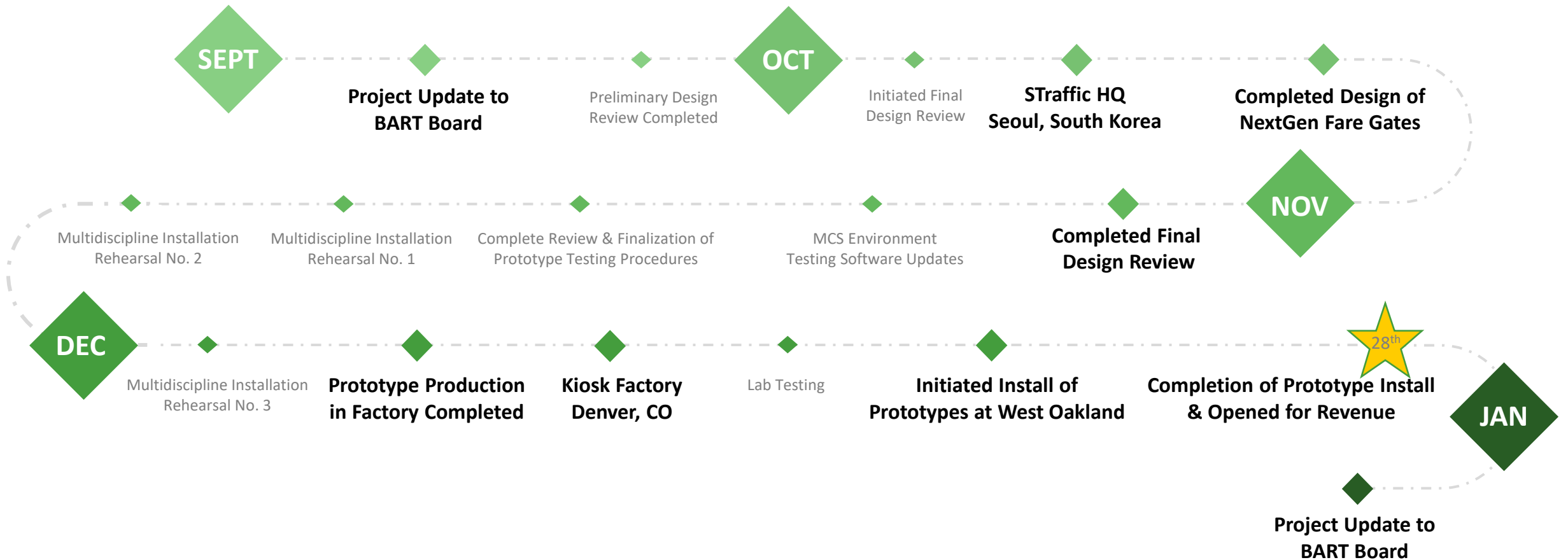
Factors Leading to Successful Deployment

- BART & S-Traffic – True Alliance
- Devoted Union Engagement
- Critical and collaborative problem solving
- Development of innovative solutions
- Day-by-day and hourly schedules
- Local & State elected official briefings
- In-station outreach & neighborhood business canvassing



Our Journey

Since our last Project Update:



Our Journey



In collaboration with our Union Partners:

- AFSCME
- SEIU BPC
- ATU
- BPMA
- SEIU BC
- BPOA

What we've accomplished:

- 100+ Daily check-in's
- 26+ Training sessions
- 35 Site implementation meetings
(incl. District-wide stakeholder engagement & BATF)
- 28+ Lab & site visits
- 10 Risk assessment workshops
- 3 Installation rehearsals



Kiosk Factory, Denver CO



Production Acceptance Inspection, Denver CO



STraffic/BART Partnering Session, BART HQ



Accessibility Surface Change, West Oakland



STraffic Lab, South Korea



Impact Testing, South Korea



New Mechanical Locking Mechanism Enhancement



- Current design relies on a software aided brake
- Physical mechanical lock:
 - Under development by STraffic
 - Compact, fits within the current console profile
 - Resists greater push-through
- Without power, the doors will remain open, and the mechanical lock will remain disengaged
- New innovative design

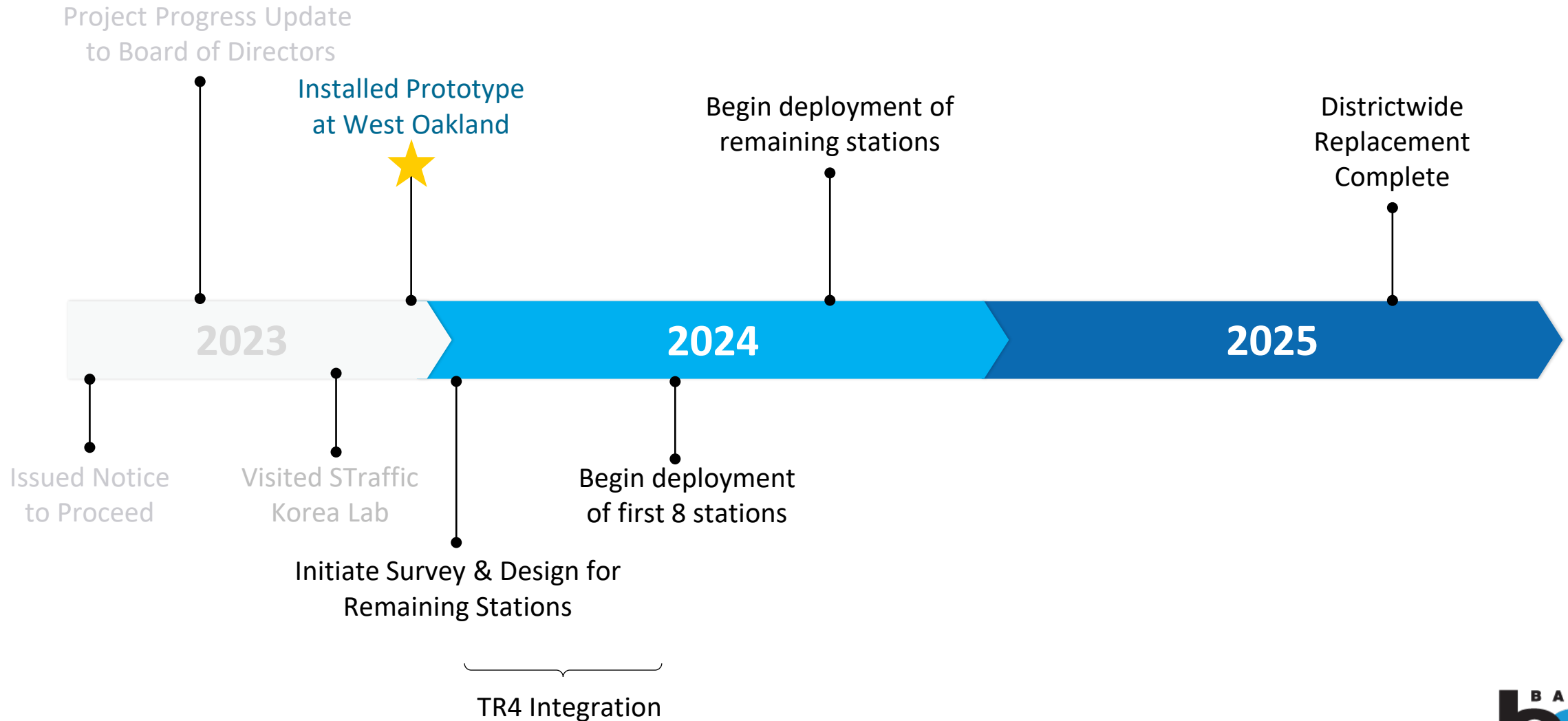
Project Estimate - Earned Value Management

Activity	Initial Estimate for Planning (June 2020)	Estimate at Vendor Award (May 2023)	Actual Costs to Date (Jan 2024)	Physical Percent Complete	Planned Value (PV)	Earned Value (EV)	Schedule Performance Index (SPI)	Cost Performance Index (CPI)
Prototype Dev/Testing	\$2.5M	\$3M	\$2.96M	100%	\$3M	\$3M	1.00	1.01
Design	\$11M	\$3M	\$1.86M	60%	\$2M	\$1.8M	0.90	0.97
Procurement/Legal	\$2M							
Materials/Hardware (incl. Vendor Contract)	\$24M	\$64M	\$5.1M	7.9%	\$5.2M	\$5.06M	0.97	0.99
Installation/Construction	\$33.5M	\$12M	\$0.6M	8%	\$1M	\$0.96M	0.96	1.60
Software Integration	\$9M							
Project Management	\$8M	\$8M	\$1.97M	25%	\$2M	\$2M	1.00	1.01
TOTAL	\$90M	\$90M	\$12.48M	14%	\$13.2M	\$12.82M	0.97	1.03

Earned Value Management:

- Industry standard tool used at BART to objectively assess project progress
- Snapshot in Time
- CPI Compares Earned Value with Actual Cost
- Compares Earned Value with Planned Cost
- CPI/SPI should hover around 1.0 (< 0.90 or > 1.10 will elicit further scrutiny)

Timeline



Next 8 Stations



Civic Center



Montgomery



Powell Street



24th Street



SFO



Fruitvale



Richmond



Antioch

Alternate Stations

16th Street

Embarcadero

12th Street

Rockridge

Downtown Berkeley

Dublin/Pleasanton

Coliseum

Warm Springs

#1 Project in the District

Thank You

Automated Fare Collection – AFC
BART Police Department
Buildings Maintenance
Comm Engineering
Comm Maintenance
Computer Systems Engineering – CSE
Communications/Government Community Relations
Customer Access/Accessibility Task Force
Electrical Engineering
Electrical Maintenance
Fare Collection Engineering – FCE
Funding Strategy

Operations/Training
Project Delivery Team
STraffic America, LLC
Transportation
AFSCME
ATU
SEIU BC
SEIU BPC
BPMA
BPOA
BART Board of Directors

