CALACT 2026 Spring Conference

Facility Upgrades for Zero-Emission Buses: What It Takes to Deliver

LA Metro Division 9 Case Study

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Agenda

1. Why ZEB facility upgrades are difficult to deliver
2. LA Metro Division 9 case study
3. Project delivery structure and key interfaces
4. Lessons learned from delivery
5. Actions transit agencies can take now

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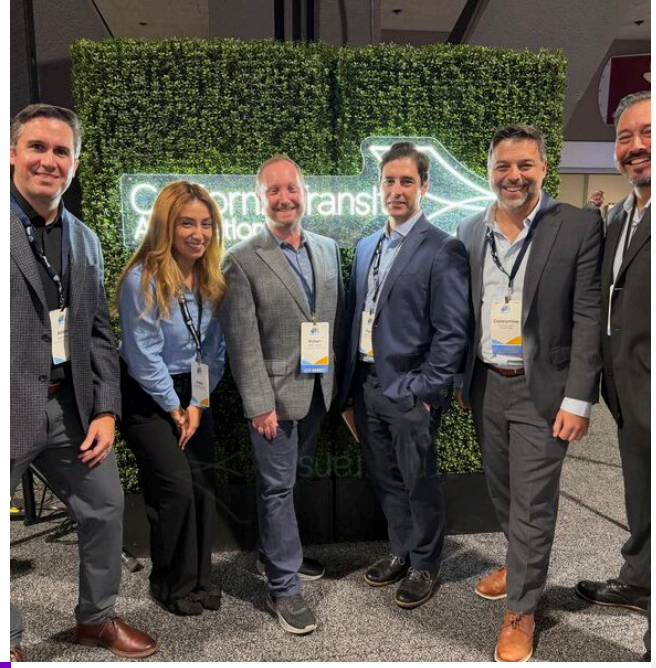
Accenture Clean Mobility Delivery Experience

Helping agencies move from ZEB planning to actual delivery.



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ENR Top 50 Program Management Firms

$100M

Electrification projects delivered

250 +

Transit, energy, and utility specialists

$20B

Managed in active transportation programs

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Why ZEB Facility Upgrades Are Difficult to Deliver

- Construction often occurs in active operating yards with little tolerance for disruption
- Utility, designer, contractor, OEM, and charging-vendor timelines do not naturally align
- Long-lead equipment and energization sequencing can drive the critical path
- Charging systems create new operational and maintenance interfaces
- Small design or installation tolerances can create major day-to-day operating issues
- Commissioning is more complex than in a traditional facility upgrade

Case Study: LA Metro Division 9 Depot Electrification

- LA Metro’s first full depot electrification project
- Delivered using a design-bid-build model
- Construction performed in an active yard supporting existing CNG operations
- Utility support provided through SCE’s Charge Ready Transport program
- Supports a fleet of 100 BYD K9M 40-foot battery electric buses
- Substantial on-base charging infrastructure achieved in March 2026

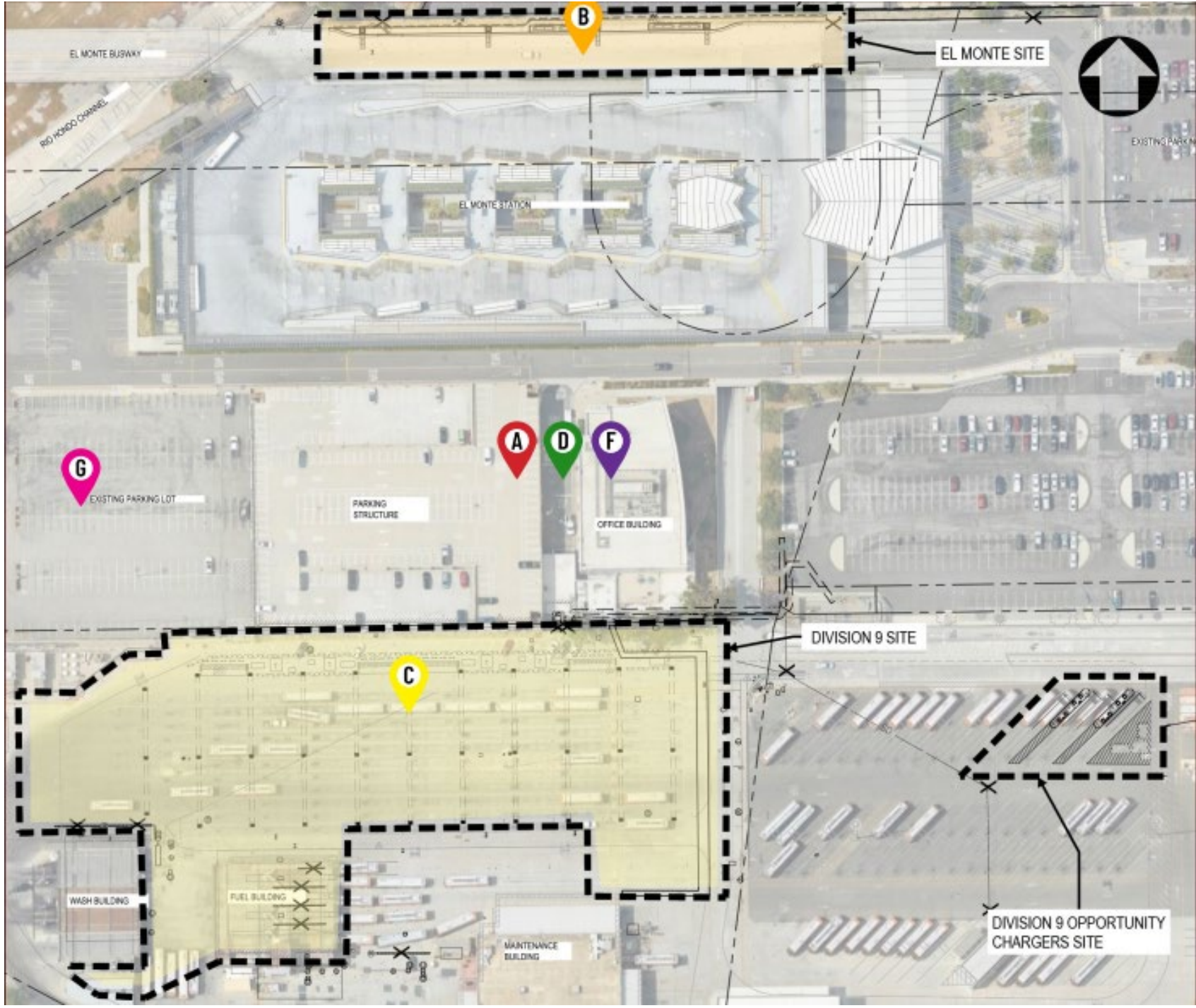
Division 9 Project Overview

Three Project Areas

1. Opportunity charging: 4 x 360 kW chargers
2. En route charging: 4 x 450 kW chargers
3. Overnight depot charging: 116 pantographs (3:1) and 4 plug-in chargers at 180 kW

Significant coordination was required across design, construction, utility infrastructure, and charging-system installation

Metro



Metro
Metro Local
5 MPH

What Made Division 9 Especially Challenging

Metro

SCE UTILITY DISTRIBUTION	SCE CHARGE READY TRANSPORT	CONTRACTOR	HELIOX / INSTALLATION CONTRACTOR
	Customer civil improvements: equipment pads, trenching to disconnects	Civil/structural improvements: underground, CIDH piles	Verify civil/structural improvements: charger pads, housekeeping pads, mast foundations
To-the-Meter (TTM) utility civil: trenching, structures, ductbanks	Customer electrical equipment & improvements: switchboards, charger disconnects, wiring	Civil/structural improvements: overhead gantry system	Supply equipment: chargers, pantographs and masts
TTM electrical: conductors, transformers, switches, capacitors, splicing, test		Electrical improvements: wiring to chargers, site lighters	Installation of masts, pantographs and chargers, wiring between masts and chargers
Service energization			Charger Commissioning

- Active operating yard with limited tolerance for disruption
- Metro's first full depot electrification effort
- Multiple charging applications on one site
- Several separate delivery and contract interfaces
- Tight installation tolerances with operational consequences

Project Delivery Structure

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Metro

Vehicle OEM

HDR

Engineer of Record

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CM Support Services

BYD

ICON WEST
CONTRACTORS / ENGINEERS

General Contractor

heliox

Charger Provider

CLE ELECTRIC, INC.

Electrical Subcontractor

Metro Program Management, supported by Accenture CMSS, coordinated multiple owner, utility, design, construction, OEM, and charging-vendor interfaces

Key Delivery Lessons from Division 9

1. Vendor maturity matters
Charging-vendor documents continued to evolve during delivery, and vendor drawings did not always align with the Engineer of Record's design set.

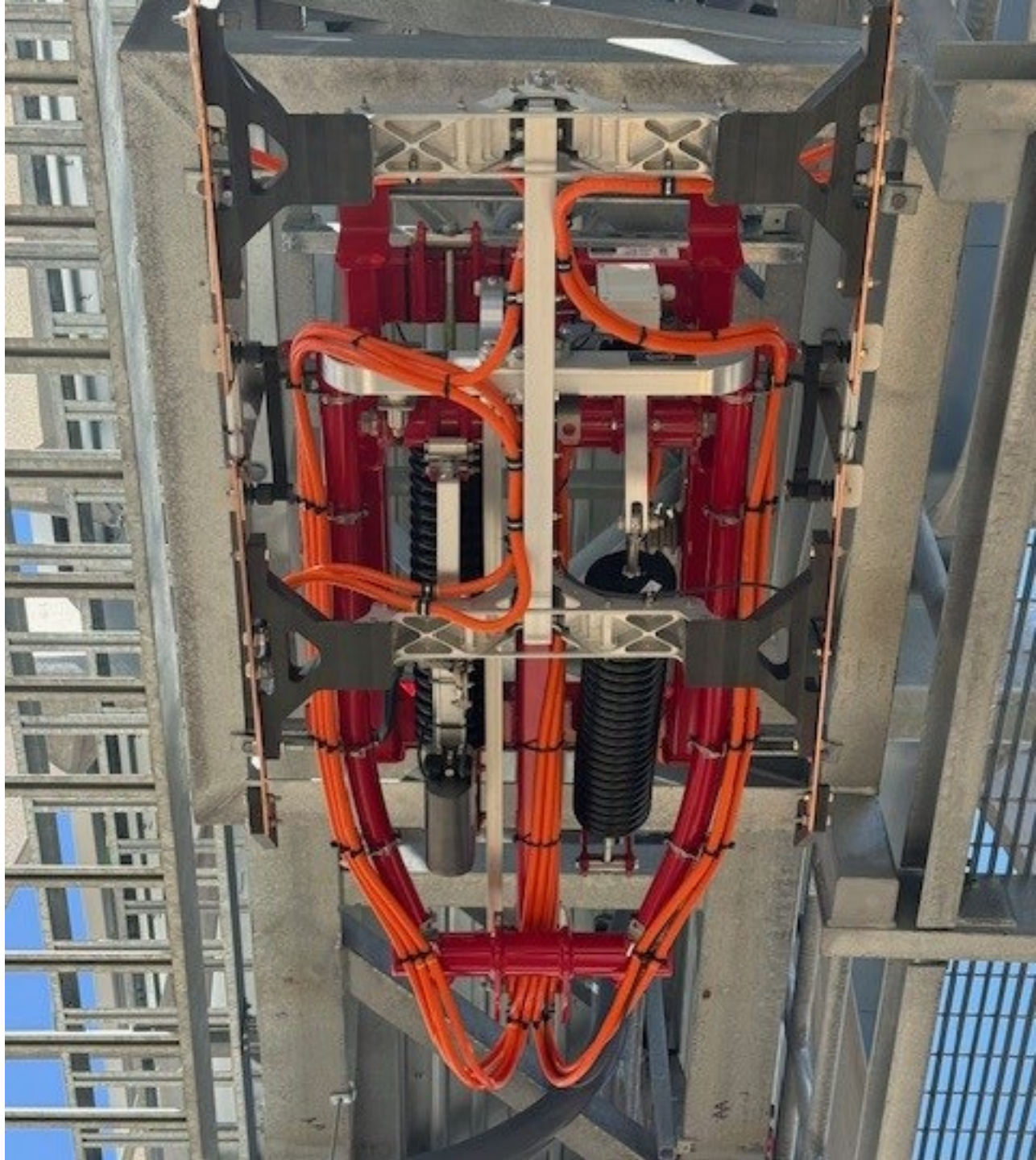
2. Long-lead equipment drives the schedule
Chargers, utility equipment, and energization dependencies affected the critical path.

3. Operational tolerances are not minor details
Pantograph alignment and bus positioning directly affected operations and required early field validation.

4. Constructability review must happen earlier
Cable routing, structure heights, phasing, and shop-drawing expectations should be pressure-tested before installation begins.

What Transit Agencies Should Do Next

- Talk to agencies and delivery partners that have already been through similar projects
- Conduct industry outreach before issuing the RFQ or RFP
- Define clear roles across Capital, Operations, Maintenance, the utility, the contractor, and the charging vendor
- Treat third-party utility work as a separate but tightly governed interface
- Build time for constructability reviews, mockups, and operational testing before installation begins



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