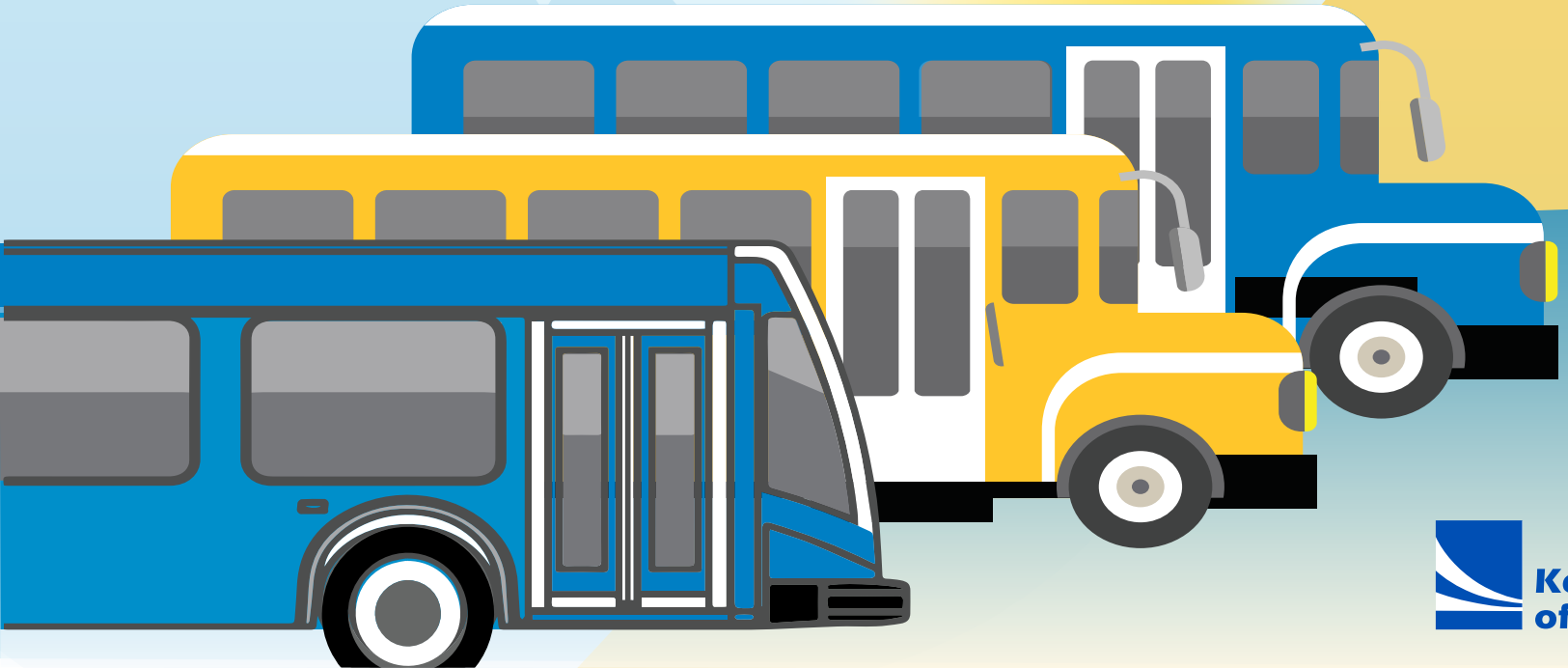
2023 TRANSIT SYMPOSIUM

TRANSITions
TRANSITions
TRANSITions



Kern Council of Governments

2023

TRANSITions TRANSITions TRANSITions

AGENDA

10:00am to 10:30am

Welcome Treat in Vendor Room
(be sure to visit our vehicle vendors outside)

10:30am to 10:45am

Welcome
Linda Urata | Regional Planner, Kern Council of Governments (Kern COG)
Opening Remarks
Cindy Parra | Board Member Kern COG and Chairwoman, Golden Empire Transit

10:45am – 11:45am

Innovative Clean Transit Update
Shirin Barfjani and Jing Guo, California Air Resources Board
- **Heavy Duty Voucher Incentive Program (HVIP)** update for transit
- **Low Carbon Fuel Standard (LCFC)** update for Hydrogen Fuel Cell
- **New regulations that potentially could affect transit and municipalities**
  - Heavy Duty • Inspection & Maintenance • Proposed Advanced Clean Fleets
  - Innovative Clean Transit Update • Rollout plan • Reporting
  - 2026 phase-in for small transits
  - Phase II (Comp Review)

11:45am-1:00pm

Lunch • Vendor Time • One Panel
Transitioning Your Fleet, A Transit Operator's Perspective
Transitioning Small Transit
Angie Dow | Executive Director, Kings County Area Transit
Transitioning as a New Transit Manager
Alexa Kolosky | Public Works Manager, Kern Transit
Transitioning to On Demand Service
Ricardo Perez | Transit Planner, Golden Empire Transit

1:00pm to 1:45pm

Resiliency Planning for Transitioning Fleets
Richard Tree | Executive Director, Tulare County Regional Transit Agency
Transitioning School District Fleets to Zero Emissions
Jane Culkin | West Coast Manager, Market Development, Highland Fleets
Transition Benefits for Transit
Bob Snoddy | Regional Planner, Kern COG

1:45pm to 2:00pm

Prizes and Closing Remarks - Kern COG

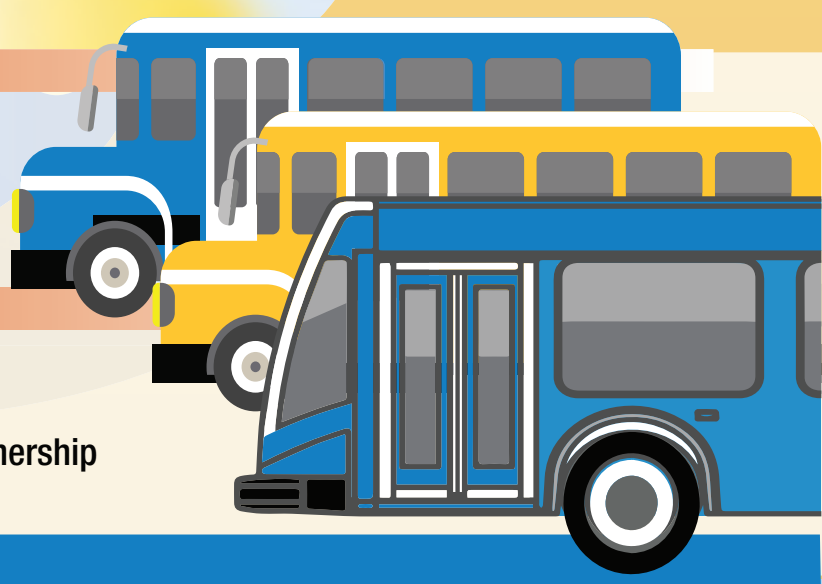
Kern Council of Governments

VEHICLES:

BYD K9 Transit Bus • Tesla
Lightning eMotors Passenger Van
New Flyer Hydrogen XHE40 • Chevy Bolt

VENDORS:

Kern COG • Golden Empire Transit
San Joaquin Valley Air Pollution Control District
San Joaquin Valley Clean Cities Coalition-EV Partnership
Bakersfield College • Miocar • EVEN Recharge



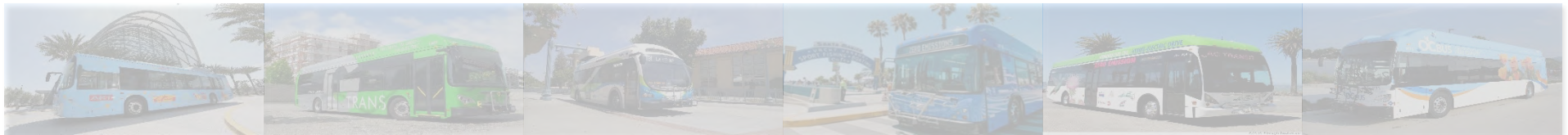
CALIFORNIA
AIR RESOURCES BOARD

Innovative Clean Transit (ICT) Program Update

2023 TRANSITions Transit Symposium

March 30, 2023

Shirin Barfjani (Air Pollution Specialist)
Jing Guo (Air Resources Engineer)



Innovative Clean Transit Reporting Tool (ICTRT)

- All transit agencies regardless of size must report
- ICTRT is open from February 1st through April 28th this year
- ICTRT Guidance Document in Q&A format to illustrate and explain functions of each module
- More information available at Reporting Tool & Data
- Send questions to ICT@arb.ca.gov

Rollout Plans

- Rollout Plans for small transit agencies are due June 30, 2023
  - Rollout Plan Guidance Document explains the requirements
  - Final Rollout Plans are posted on the ICT-Rollout Plans page
- Must include all buses with the gross vehicle weight rating greater than 14,000 lbs.
  - Demand response cutaways are included
- A Rollout Plan must include all 8 elements identified in the regulation to be considered complete and get approved

Required Rollout Plan Components

- Goal of full transition to zero-emission buses (ZEB) by 2040, considering minimum useful life of buses
- Planned bus purchase schedule
- Planned conversion (conventional buses to ZEBs) schedule, if any
- Identification of ZEB technologies planning to deploy
  - Battery vs fuel cell electric buses or both
- Infrastructure build out schedule, location, type, and service capacity
- Workforce training (planner, technician, driver, etc.)
- Description of how planned ZEBs would serve disadvantaged communities
- Identification of potential funding sources

HVIP Funding for FY 22-23

- Expanded flexibilities for transit agencies
- $70 M set aside for transit buses
  - As of March 9, 2023, $45M remaining from FY 21-22
- Additional 15% voucher amount for small public fleets with 10 or fewer medium- and heavy-duty vehicles
- Additional 15% voucher amount for fleets in DAC
  - A small fleet in DAC can use both of plus ups above (15% small fleet + 15% DAC)
- All transit agencies, regardless of the size, are eligible for HVIP

Flexibilities for Transit Agencies

- Allow a letter of intent in lieu of a purchase order
- Allow 36 months for transit bus voucher redemptions
- Consider all transit agencies to be exceeding regulatory requirements and eligible for HVIP funding if the total number of ZEB purchased in the State exceeds the ICT requirements
- Promote use of HVIP as local match
- Additional details are listed in the Implementation Manual (to be released in Spring 2023)

HVIP Funding Stackability

- Can be stacked with other State incentive programs
  - When stacking, HVIP will only fund the remaining cost up to the maximum voucher amount after the other incentives have been applied at their maximum allowable amounts
- Can be stacked with Carl Moyer if follows the Carl Moyer Guideline (e.g. vehicle scrappage)
- Cannot be stacked with Volkswagen Mitigation Trust

Low Carbon Fuel Standard Regulation

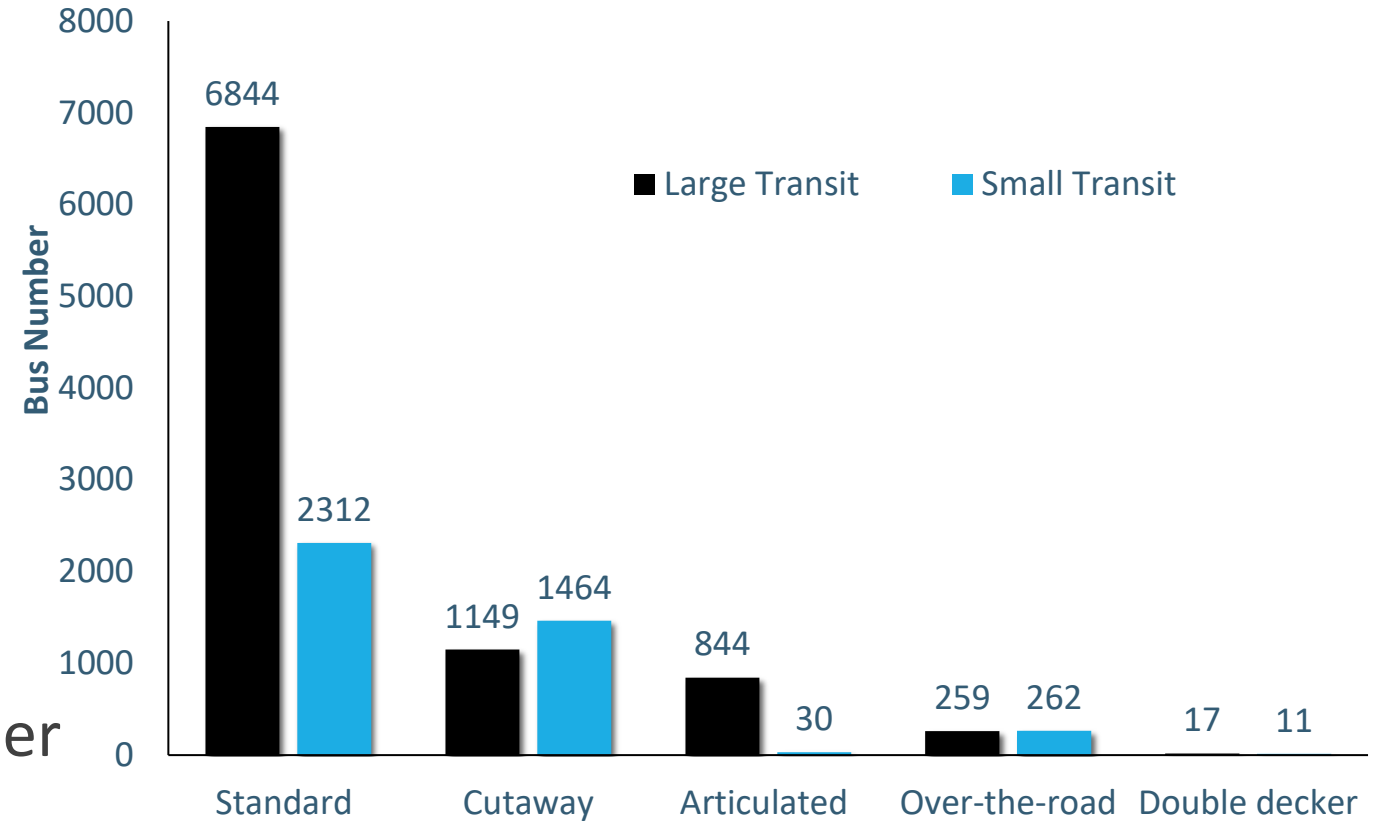
- Designed to encourage the use of cleaner low-carbon transportation fuels
- On-going rule amendment process to align with the Governor's and CARB climate goals, increase low-carbon fuel supply, improve regulatory clarity, and leverage new federal programs/funding
- Hydrogen anticipated to be a mandatory fuel starting in 2025
- Register to the program and report low-carbon fuel in the LCFS Reporting Tool to generate credits
- Credits can be monetized to help offset the total cost of ZEB ownership
- More details provided at CalACT 2023 Spring Conference on April 17th
  - Another workshop can be organized in Central Valley if there is an interest

Comprehensive Review on Program Readiness

- ZEB Comprehensive Review to evaluate the program readiness
  - Inform heavy-duty zero-emission policy and funding strategies
  - Identify status of ZEB technology
  - Ensure transit service not adversely impacted
- Contracted with NREL for a third-party assessment

California Transit Bus Composition

- About 200 transit agencies
  - 21 large transit agencies accounting for 70% of total buses
- Approximately 13,000 buses
  - 70% are standard buses
  - 2021 data shows 510 ZEBs deployed and 424 ZEBs on order



Phase 1 Comprehensive Review Results

- The report shows California large transits are ready for 2023 ZEB purchase requirement on standard 40’ buses
- Continued efforts are needed for 100% ZEB transition
  - Lower capital costs and provide financial support
  - Improve ZEB reliability and optimize ZEB performance
  - Enhance deployment flexibility and scalability
  - Establish a reliable supply chain and develop a highly skilled workforce

Phase 2 Comprehensive Review

- Include other types of buses (cutaway, over-the-road, double decker, and articulated buses) and an update to the 40’ standard buses
- 2026 ZEB purchase requirement
  - Large transit: 50%
  - Small transit: 25%
- Anticipate to share the report in 2025

Challenges for Other Types of Buses

- Zero-emission technologies for other types of buses are not as mature as standard transit buses
- Limited Altoona tested buses for other types of buses
- Uncertain daily range especially for demand response
- Limited data available
  - Call for help on the data collection and transit survey

Heavy-Duty Inspection and Maintenance (HD I/M) Regulation—Vehicle Applicability

- All non-gasoline heavy-duty vehicles operating in California with a GVWR >14,000 lbs.
  - All diesel, alternative fuel, and hybrid vehicles
- All California, out-of-state, and out-of-country registered vehicles that operate within California
- Single vehicle fleets are also subject to this regulation

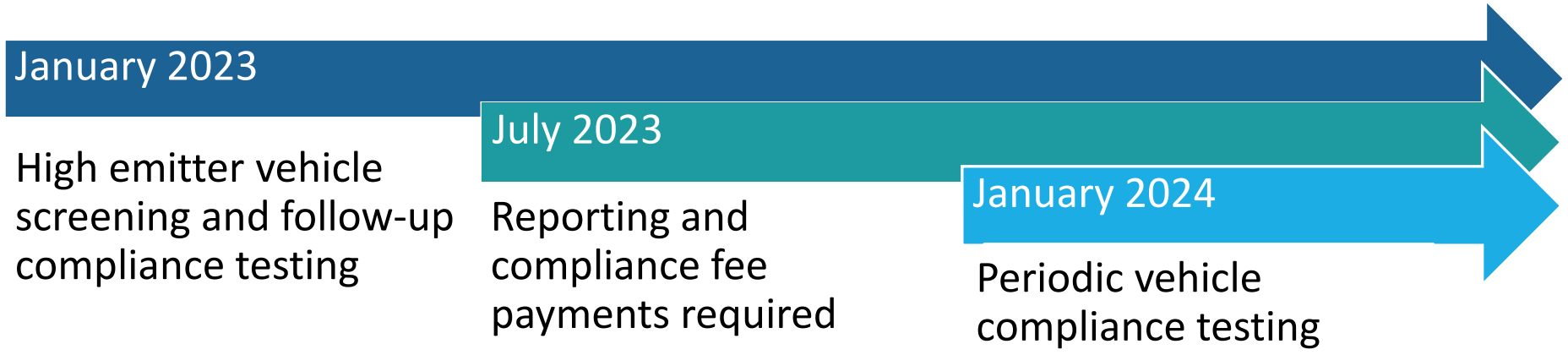





Entities Subject to HD I/M

- Vehicle owners and drivers of non-gasoline vehicles with a GVWR >14,000 lbs. that travel in California
- Testers that perform compliance tests
- Freight contractors and brokers that do business in California
- Applicable freight facilities located in California that allow vehicles subject to the HD I/M program onto their properties
- On-board diagnostics test device vendors that produce and sell testing instrumentation used to perform compliance tests on HD I/M vehicles

Vehicle Owner Requirements



- Existing Periodic Smoke Inspection Program requirements apply until HD I/M periodic compliance testing begins in 2024
- Official start dates depend on the rollout of the HD I/M program database and CARB will provide notice prior to effective dates

Proposed Advanced Clean Fleet (ACF) Regulation

- Aim to accelerate medium and heavy duty zero-emission vehicle purchases toward meeting a full transition to ZEVs by 2045
- Transit buses subject to the ICT regulation (GVWR> 14,000 lbs.) are exempt in ACF
- Other transit vehicles (buses with a GVWR ≤ 14,000 lbs. and other vehicles like tow trucks, snow plow) are exempt until January 1, 2030 with a 100% of ZEV purchase requirements starting in 2030
- Second hearing with the 15-day changes is scheduled on April 27 and 28, 2023

Contacts and Links

- Innovative Clean Transit Reporting Tool (https://ictrt.carb.arb.ca.gov)
  - ICT program email (ICT@arb.ca.gov)
  - Shirin Barfjani, Lead Staff (Shirin.Barfjani@arb.ca.gov)
  - Jing Guo (Jing.Guo@arb.ca.gov)
- LCFS program page
  - Jordan Ramalingam, Manager of Alternative Fuels Section Jordan.Ramalingam@arb.ca.gov
- Funding information (https://ww2.arb.ca.gov/our-work/programs/low-carbon-transportation-investments-and-air-quality-improvement-program/low-1)
- HVIP (https://californiahvip.org)
- Funding Finder Tool (https://fundingfindertool.org)
- ACF (https://ww2.arb.ca.gov/our-work/programs/advanced-clean-fleets)
- HD I/M (https://ww2.arb.ca.gov/our-work/programs/heavy-duty-inspection-and-maintenance-program)
  - HD I/M webinar (https://ww2.arb.ca.gov/sites/default/files/truckstop/azregs/training.html)

TRANSITION TO ON-DEMAND SERVICE

TRANSITions Symposium
MARCH 30, 2023

GET bus
GOLDEN EMPIRE TRANSIT DISTRICT

MISSION STATEMENT

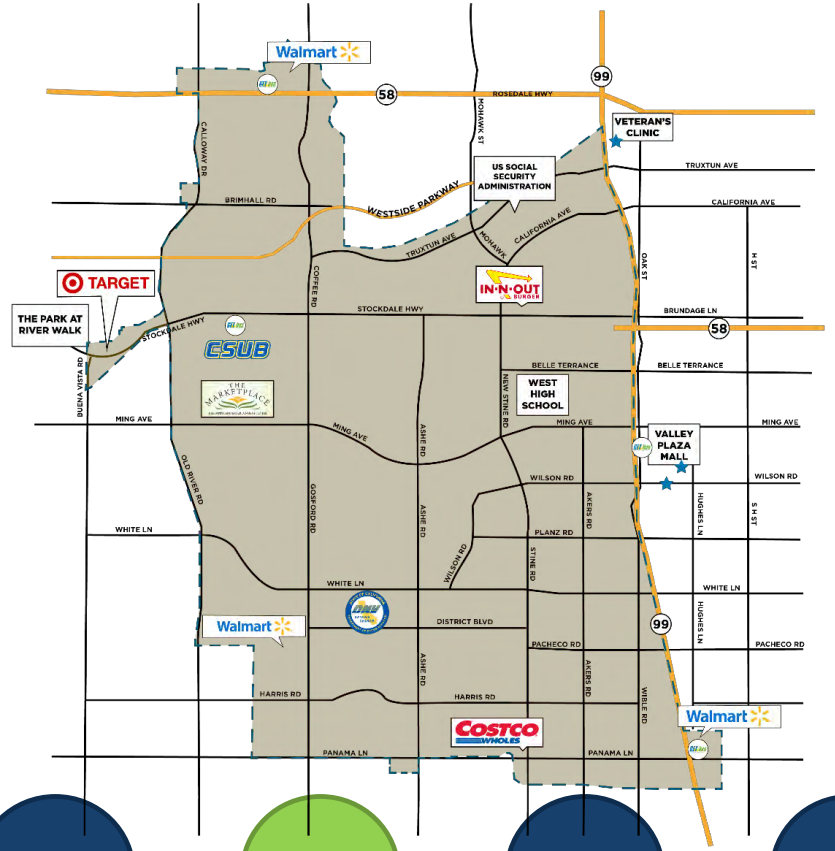
We make life better by connecting people to places one ride at a time.

2018: STANTEC CONDUCTS PEER REVIEW

- **Study of Best Practices Regarding Alternatives to Traditional Fixed Route Transit Service**
- **Target areas include**
  - Areas with low population density
  - Areas with low-performing fixed route transit service
  - RT 47 and southern portion of RT 61
- **Microtransit was introduced as an option**

2018 — 2019 — 2020 — 2021 — 2022 — 2023 — 2024 — 2025

2019: 'RYDE' PILOT LAUNCHED



RYDE

- **Pilot from April 2019 – December 2020**
- **Zone Profile**
  - 23 square miles of the general SW area
  - Diverse demographics (income, race/ethnicity)
  - Shopping, schools and universities, doctors offices, entertainment, etc.
- **Rides within the zone are $3.50**
- **Hours of Operation**
  - Mon - Fri 6 am - 11 pm
  - Sat & Sun 7 am - 7 pm

2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025

2020: ON-DEMAND REBRAND

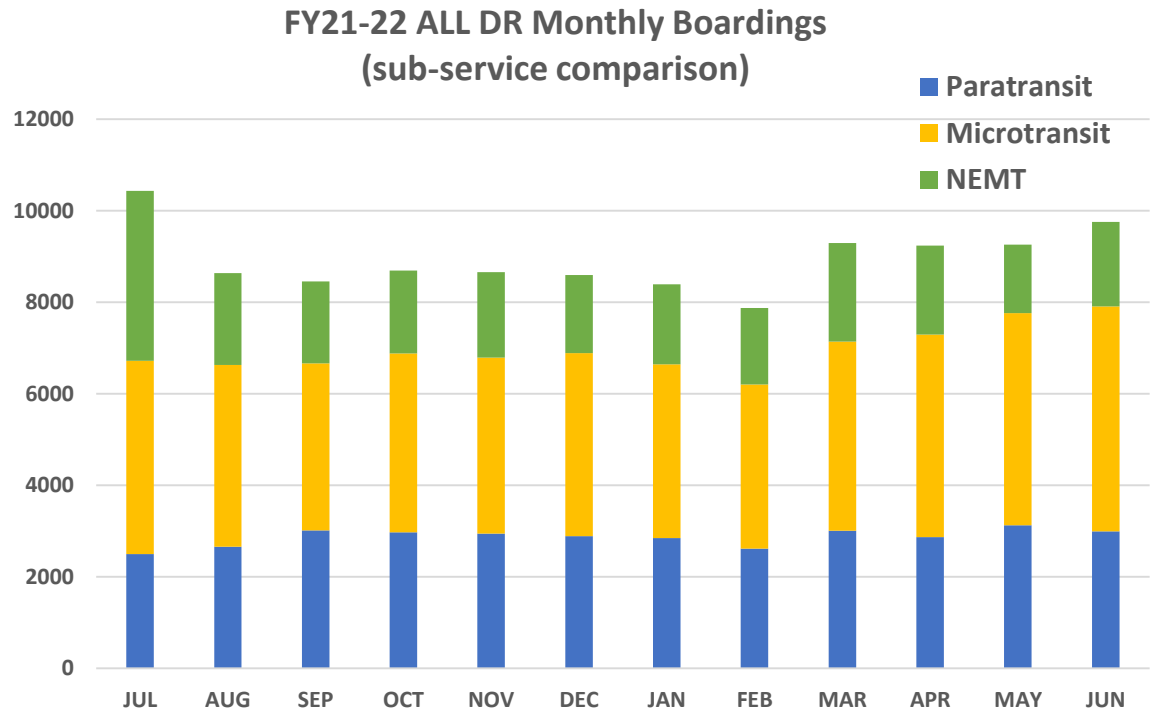
ON-DEMAND
POWERED BY GET

- **On-Demand Service**
  - Paratransit, Microtransit, Non-Emergency Medical Transport (NEMT)
- **Zone Profile**
  - Extended to include Downtown Core
- **Distance Base Fares introduced**

2018 — 2019 — 2020 — 2021 — 2022 — 2023 — 2024 — 2025

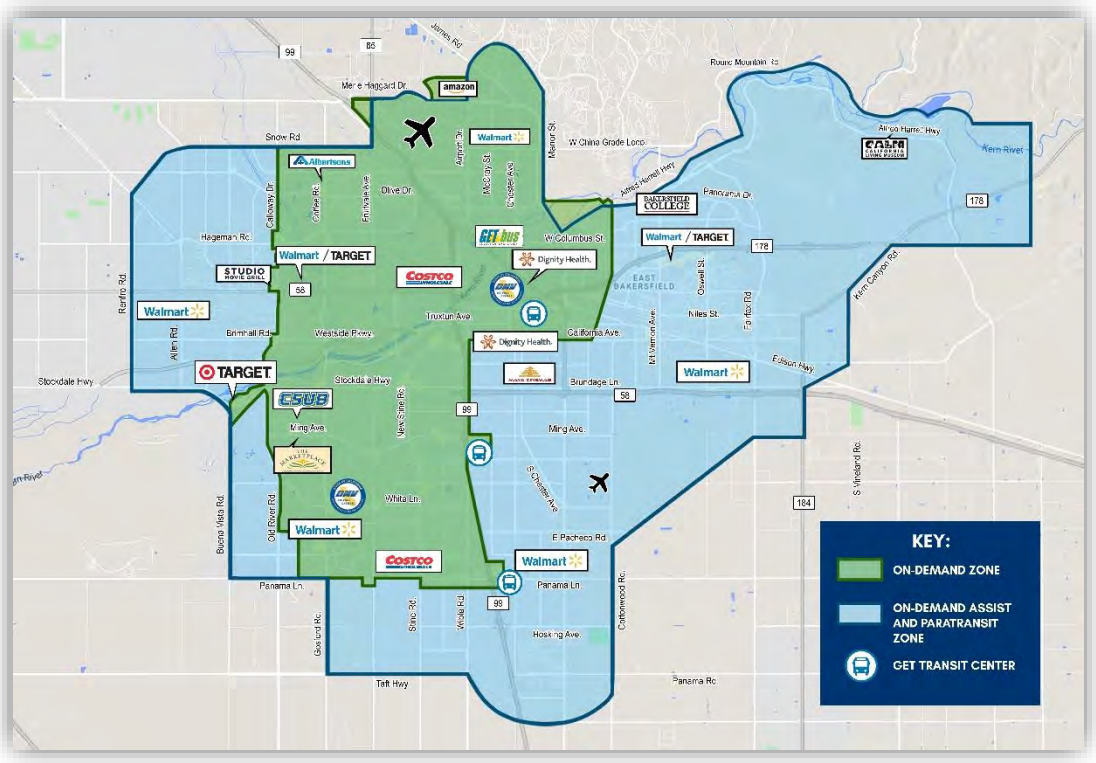
2021: COMMINGLING EXPLORED

- **Commingling of Services**
  - Concept identified in Stantec Study
  - Utilize vacant seats among sub-service trips
- **Microtransit ridership growth during COVID**
  - Curb-to-curb trips within the zone
  - Connect to transit centers and reach final destination on fixed route



2018 — 2019 — 2020 — **2021** — 2022 — 2023 — 2024 — 2025

2022: GET DESIGNATED AS CTSA

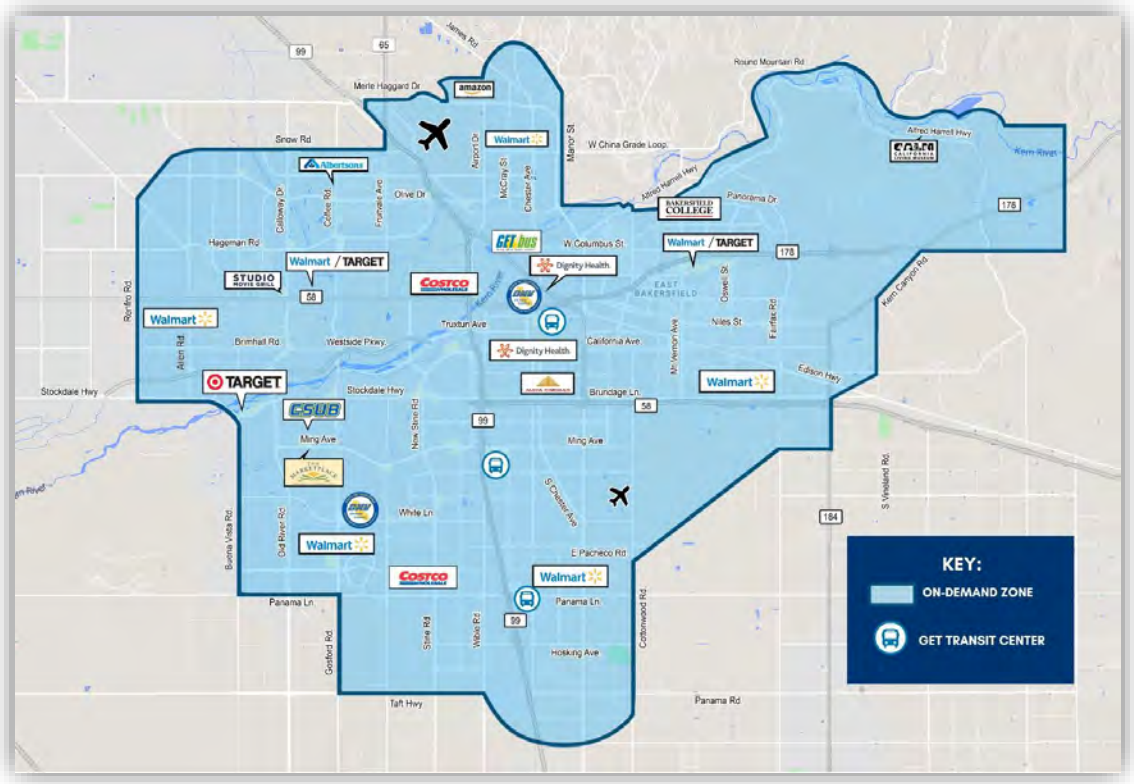


- **Fourth On-Demand sub-service introduced**
- **Consolidated Transit Service Agency (CTSA)**
  - Provides low-cost mobility option additional to people with disabilities
- **Microtransit expands to Oildale, Amazon, and Meadows Field Airport**

2018 — 2019 — 2020 — 2021 — **2022** — 2023 — 2024 — 2025

2023: CITYWIDE EXPANSION

- **On-Demand covers approximately 69 square miles**
  - 43% of District Service Area
- **511 passenger boardings per weekday**
- **Currently Operates 7AM-7PM**



2018 — 2019 — 2020 — 2021 — 2022 — **2023** — 2024 — 2025

2024 AND BEYOND

- **Operate Diversified Fleet**
  - Compressed Natural Gas (CNG)
  - Retrofit Battery Electric from Conventional Gas
  - On-Demand Maintenance Facility
- **Reach New Milestones**
  - More service in more places
  - More service during more hours

2018 — 2019 — 2020 — 2021 — 2022 — 2023 — 2024 — 2025

Ricardo Perez
Transit Planner
ricardoperez@getbus.org

THANK YOU

"WE MAKE LIFE BETTER BY CONNECTING PEOPLE TO PLACES ONE RIDE AT A TIME"

GET bus
GOLDEN EMPIRE TRANSIT DISTRICT

Building In Resiliency

Rich Tree

Tulare County Regional Transit Agency

Background

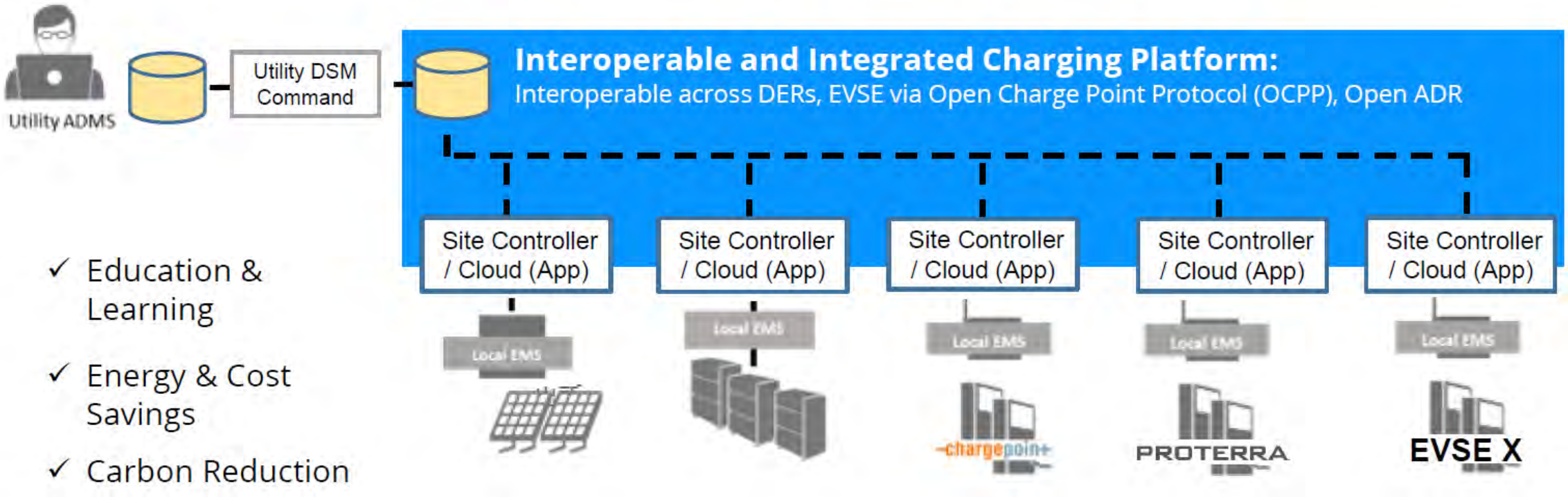
- 13 Battery-Electric Transit Buses
- 15 Battery-Electric Shuttle Vans
- 3 Infrastructure Projects
  - 24 DCFC & 6 L2 Charging Stations
    - Opportunity and Depot Charging

Planning & Collaboration

- Opportunities for Partnerships
  - Transit, Schools, City Fleets
- Early Engagement with Utility Provider
- ZEB Rollout Plan
- Site Planning & Evaluation
- Grid Analysis
- Fleet & EVSE Acquisition

The Big Picture

Utilities, Fleet Systems, and Station Operators working together to accelerate adoption and reducing CO2 emissions.



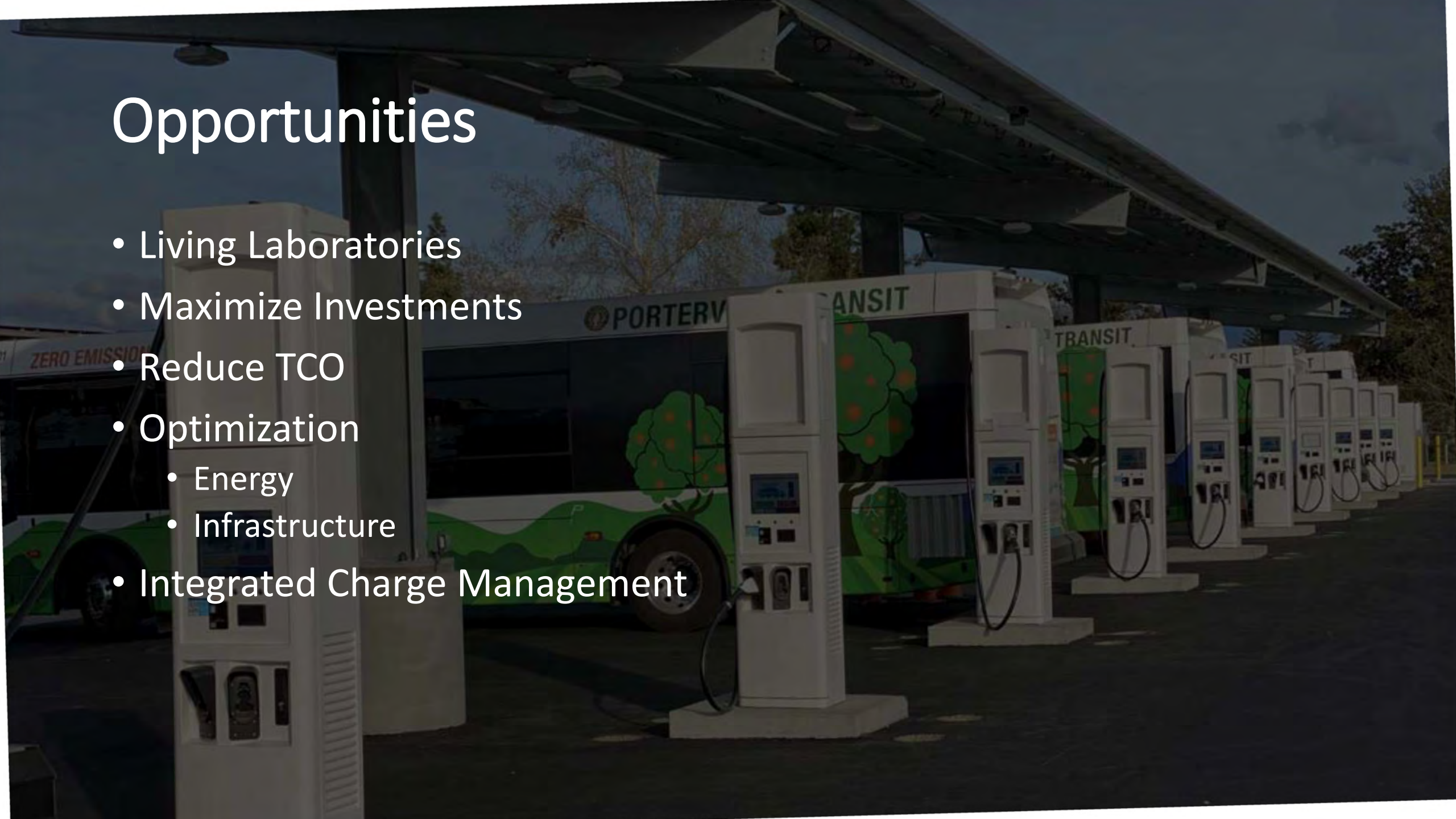
- ✓ Education & Learning
- ✓ Energy & Cost Savings
- ✓ Carbon Reduction

Resiliency Planning

- Planning In-Progress
  - Federal Transit Administration (FTA)
    - Helping Obtain Prosperity for Everyone (HOPE)
  - California Energy Commission (CEC)
    - Blueprint
  - Department of Transportation (DOT)
    - Strengthening Mobility and Revolutionizing Transportation (SMART)

Opportunities

- Living Laboratories
- Maximize Investments
- Reduce TCO
- Optimization
  - Energy
  - Infrastructure
- Integrated Charge Management



Challenges

- Limitations with Utility Programs
  - Separate Meters
- Space Requirements
  - Microgrid
  - Energy Storage
- Interoperability & Integration
- Cost


8211
TCRTA
Tulare County Regional Transit Agency
ZERO EMISSION

Thank You!

Highland

TRANSITions 2023 Symposium

March 2023

The Highland story

Founded in 2019

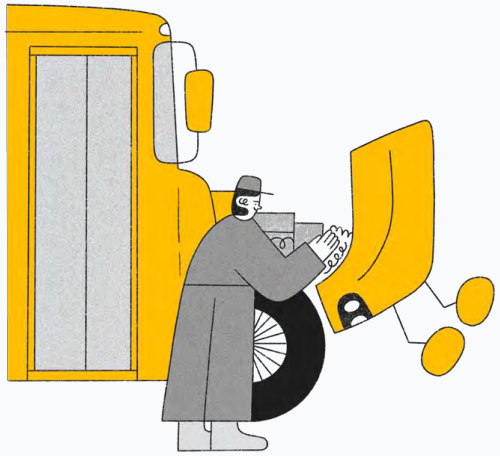
$253M capital raised

Largest electric school bus project in North America:
MCPS, Maryland

First commercial electric school bus V2G program in the U.S.

Leader in public-private partnerships: 375+ buses under contract

A reliable electric fleet without the headaches

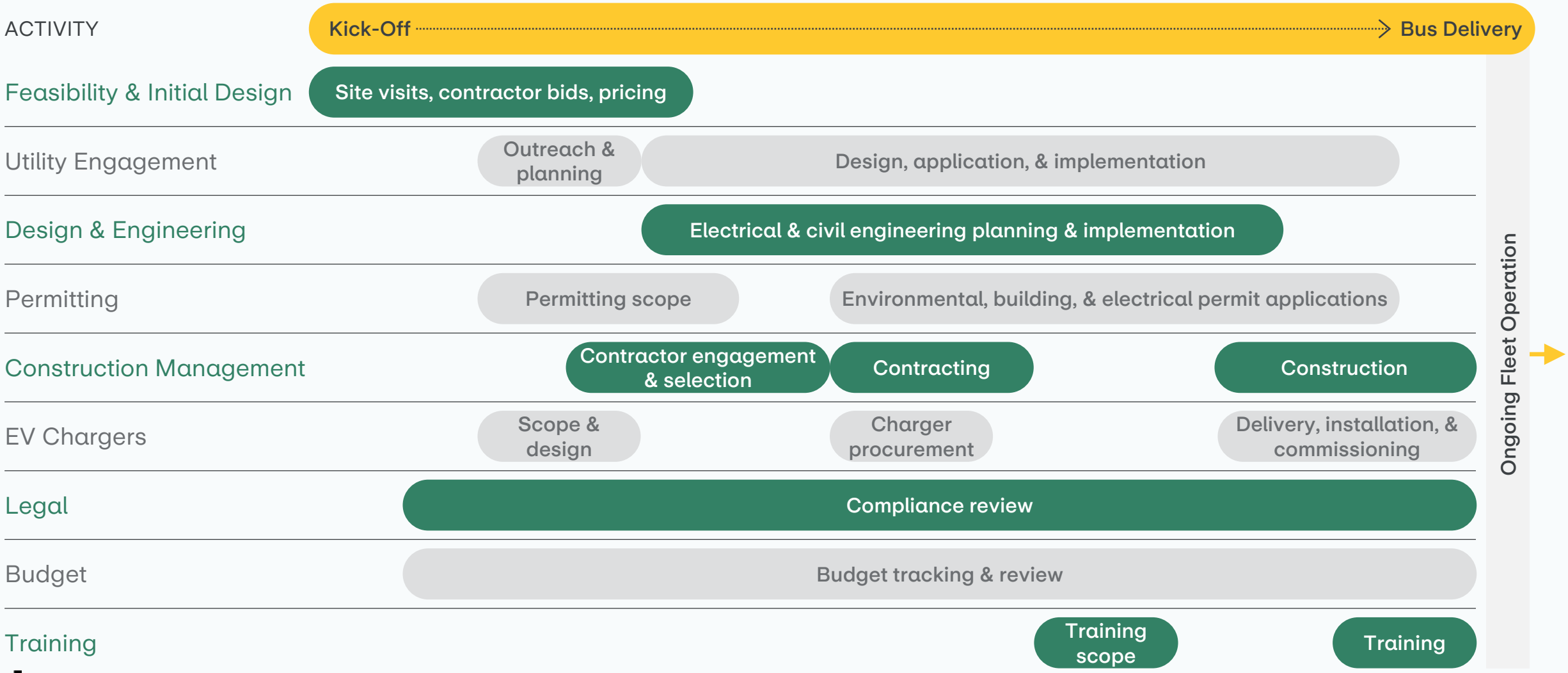


1. **Plan** — We design and implement the entire project.
2. **Budget** — We create a budget together that encompasses all aspects of your electric fleet.
3. **Build** — We procure school buses & infrastructure and manage the construction of depot upgrades.
4. **Train** — We train your drivers & mechanics to operate & maintain your new fleet.
5. **Charge** — We charge the school buses during off-peak hours, ensuring a “full tank” before each trip.
6. **Maintain** — We provide a complete service plan, reimbursing for all repair costs, including parts and labor.

Our Guarantee: We don’t get paid until your buses are running and only if we keep them running

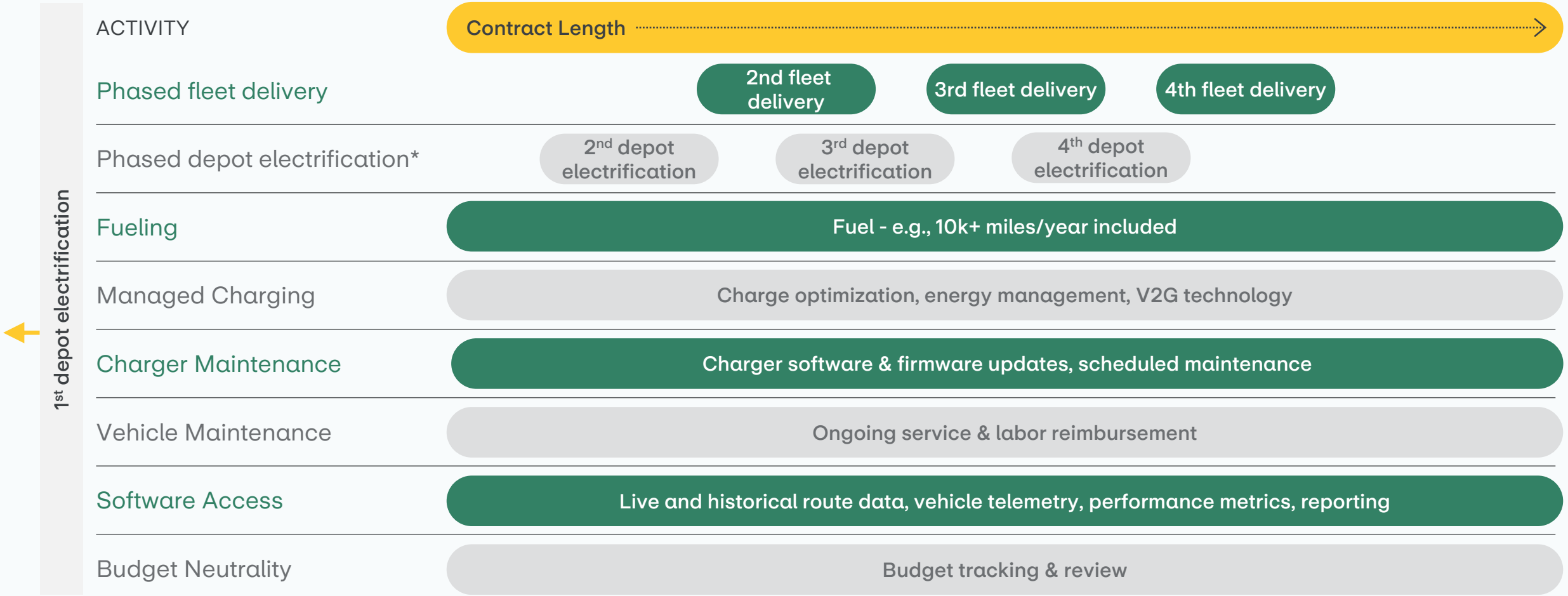
Sample depot electrification timeline

Project development must begin at least 12–18 months before buses arrive



Ongoing electric fleet operation

A lot happens behind the scenes to keep buses running smoothly



*Additional depot construction or existing depot expansion

Salinas, CA

Highland

The Salinas City Elementary School District

EVSB Site Implementation

SCESD partnered with Highland to deploy 10 electric school buses and upgrade a bus depot with 10 chargers by the start of the 2023-2024 school year.

The project represents the first use of California General Code 4217 to create an energy savings contract for transportation.

10 electric school buses

District Savings vs. cost to purchase, fuel, and maintain diesel buses

Buses and chargers delivered by start of 2023/2024 school year

EPA Clean School Bus Program

FY22-FY26

Authorized through the Bipartisan Infrastructure Law

$5 Billion over 5 years

To replace existing school buses with zero-emission and low-emission models

EPA Clean School Bus Program Round 1

June 2022

Structure & Mechanism	Rebate; Random lottery
Amount Awarded	~$1 billion
Buses Funded	>2,500
% Electric Buses	>95%

EPA Clean School Bus Program Round 2

Est. April 2023

Structure & Mechanism	Grant; Competitive application
Amount Awarded	TBD
Buses Funded	TBD
% Electric Buses	TBD

Competitive Program Elements

Requires significantly more information than a random lottery

QUALITY OF APPLICATION

Knowledge of project structure, information on existing fleet, & why you should win

RELEVANT EXPERIENCE

Ideally with electric school bus deployment, but any sustainability experience helps

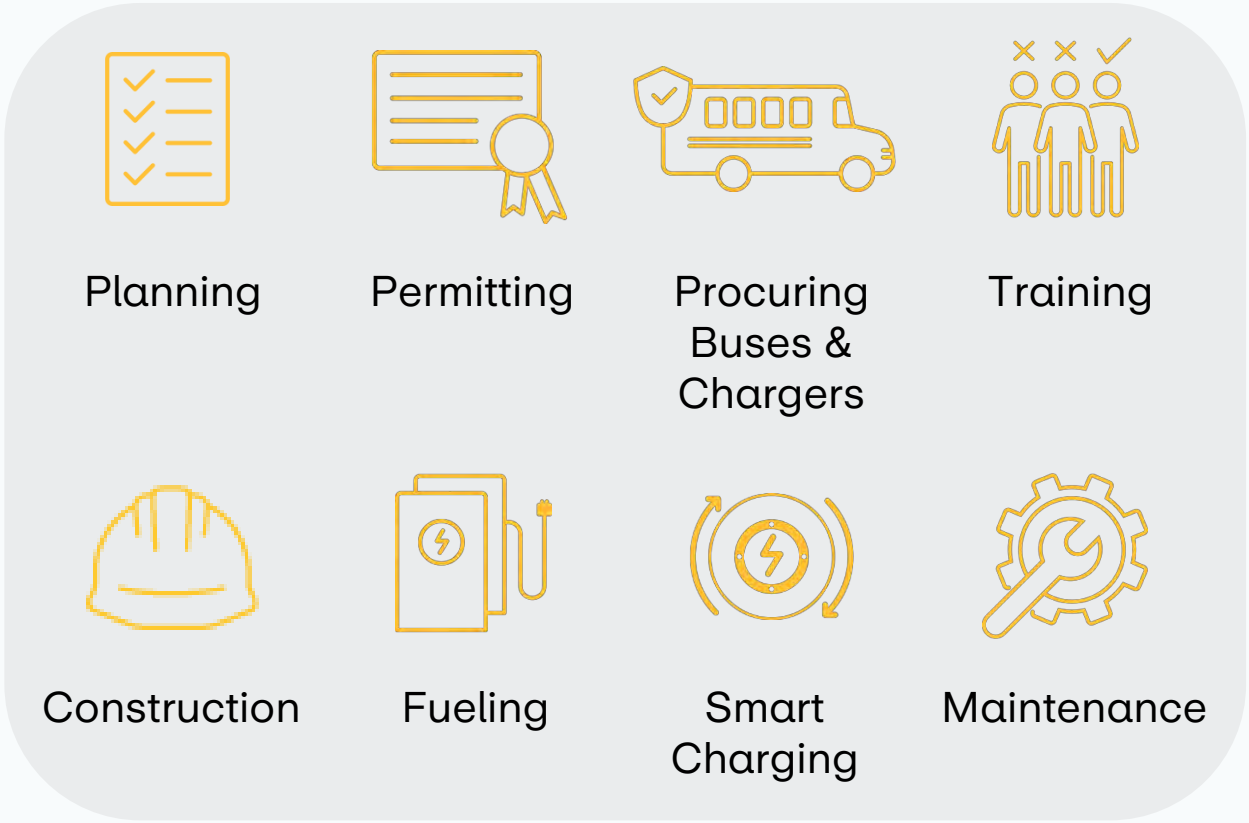
PROBABILITY OF SUCCESS

Show that you know what's involved & how you will address any gaps

MAXIMIZATION OF APPLICATION SCORE

Pay attention to selection criteria and scoring system

Fleet electrification is a marathon, not a sprint



- 1,000+ hours of labor
- 12-18 months of planning & implementation
- 5+ dedicated FTEs
- 3+ subcontractors

Craft your narrative

The more comprehensive and specific, the better

DETAILS OF YOUR EXISTING FLEET

- # and type of buses, age, etc.
- Routes
- Needs (e.g., special ed buses)

WHY SHOULD YOU GET FUNDING?

- Why do you need the funds more than another district?

HOW WILL YOU USE THE MONEY?

- The more specific you can be, the better your chances

Compile a list of relevant experience

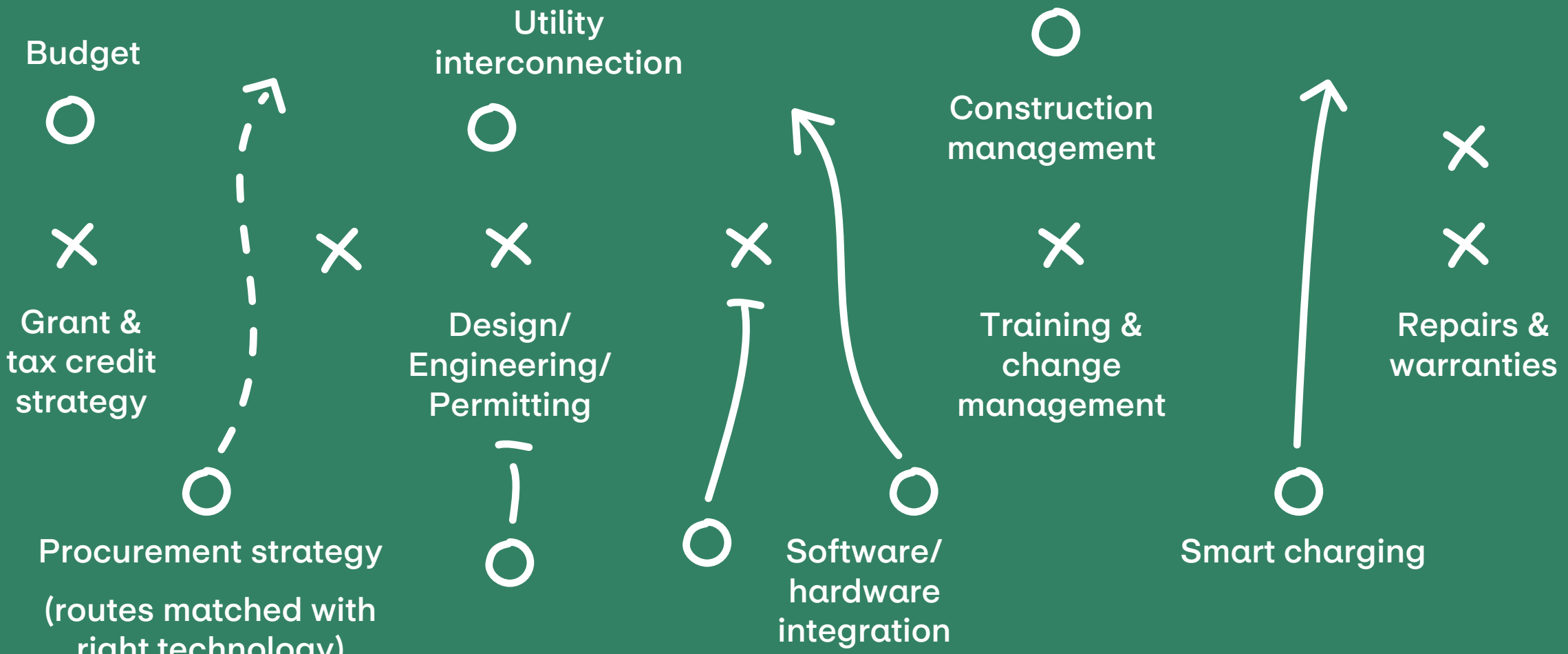
What has your district done to demonstrate interest in clean energy and sustainability?

RENEWABLE ENERGY

RECYCLING

ENERGY EFFICIENCY

Be prepared to address project scope



Thank You

jane@highlandfleets.com

ELECTRIC FLEET

Community benefits

School Budgets
Restore balance to your transportation budget with predictable pricing.

Academic Success
When your students breathe cleaner air, they miss less school and perform better.

Community Health
Emissions-free vehicles eliminate toxic diesel fumes from school yards and neighborhoods.

Driver Satisfaction
Recruit and retain drivers with clean, quiet, and easy-to-drive vehicles.

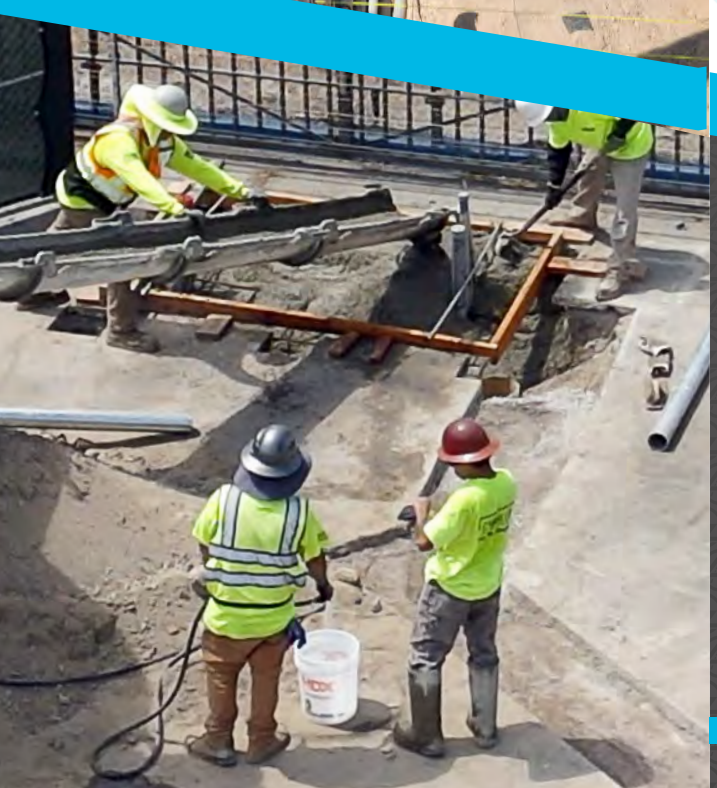
Emergency Resilience
As Distributed Energy Resources (DERs)—batteries on wheels—electric school buses can power your community in an emergency.

Environmental Justice
Electric school buses improve air quality for traditionally poor and underserved communities.

Climate
Upgrading your fleet to electric reduces pollution & greenhouse gas emissions.

Grid Modernization
With vehicle-to-grid technology (V2G), electric school buses are helping build America's new energy grid, buffering peak demand and providing storage capacity for renewable energy.

*Citations located in Appendix



AZ CONNECT

All Electric Vehicles

End-to-End Charger Management Software

Grants Assistance

Charging Infrastructure

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Territory Sales Manager
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Joe Ordonez
Southern California
Territory Sales Manager
951-691-6702
jordonez@a-zbus.com

AZ CONNECT

EV CHARGING INFRASTRUCTURE SOLUTIONS

Done Right The First Time

AZ BUS SALES
AN EMPLOYEE OWNED COMPANY

www.A-ZBUS.com

Turnkey EV Infrastructure Solutions from a Name You Can Trust!

BUSSALES
AN EMPLOYEE OWNED COMPANY

Your zero-emissions buses are on order, but the work is not yet done...

The obstacles ahead....

- How will you charge your buses?
- What chargers are compatible?
- Who will install them?
- Does you site need significant upgrades to support them?
- And most importantly, how will you pay for them?

evcharging@a-zbus.com

A-Z Bus Sales completes the full circle of EV Fleet adoption and implementation by offering

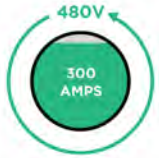
- Compatible Charging Hardware
- Route Evaluation
- Equipment Assessment
- Site Evaluation
- Complete Construction & installation management
- Revenue for your businees through LCFS Credits

Free Grant and Funding Assistance

- Application assistance and program management for Grants and Public Utility Programs

Charging Stations

Level 2



Level 3 (DC FAST)

Vehicle-to-grid (V2G)

Software

- Basic and Smart Charge Management Levels of Service
- Ongoing monitoring of EVSE health and Statistics
- Personalized and comprehensive activity reports
- Graphical dashboard showing real-time status
- 24x7x365 "Advanced Services" technical support

BYD **K7M**

BATTERY ELECTRIC • ZERO EMISSIONS • BUILT IN AMERICA

ELECTRIC & ECO-FRIENDLY | **30’ TRANSIT**

BYD **K7M**
30’ TRANSIT

DIMENSIONS

Length	30.7 ft
Width	95.7 in
Height	128 in
Wheelbase	195.2 in
Curb Weight	23,545 lbs
GVWR	31,967 lbs
Seats	Up to 22 + 1
Wheelchair Positions	2

PERFORMANCE

Top Speed	56 mph
Range[1]	158 miles
Turning Radius	30.2 ft
Approach Angle	≥8.6°
Departure Angle	≥8.6°

CHASSIS

Front Axle	ZF front axle
Rear Axle	BYD in-wheel drive axle
Suspension	Air suspension with mechanical leveling valves
Brakes	Front & rear disc-brakes, ABS
Tires	285/70R19.5

POWERTRAIN

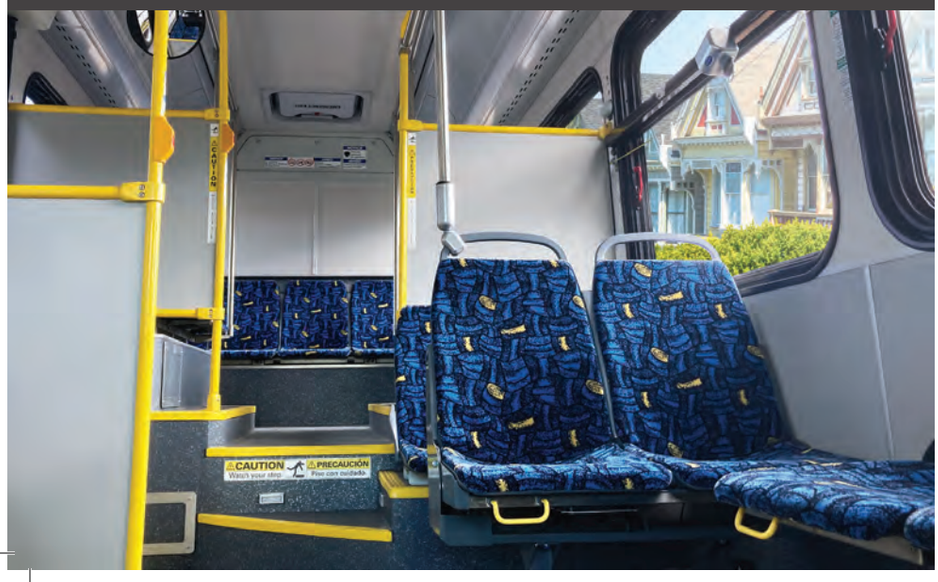
Motor Type	Asynchronous Motor 3 Phase
Max Power	90 kW×2
Max Torque	400 N·m×2
Battery Type	BYD LFP Battery
Battery Capacity[2]	215 kWh
Charging Time[3]	1.5-2h
Charging Capacity[4]	J1772 DC 150kW

A New Kind of Bus

The 30’ K7M is BYD’s top-selling model for universities and corporate campuses, shuttling students and workers in quiet comfort. It performs well in smaller cities, at airports, performing arts venues and parking structures.

BYD’s unique iron-phosphate batteries are the safest in the industry, and with a 12-year battery warranty and a nationwide network of service providers, reliability is guaranteed.

Our leasing program offers flexible financing options that are tailored to your organization. With a lower total cost of ownership than diesel or CNG, it has never made more sense to electrify your fleet.



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1. Variables affecting range include air temperature, weather, grade, speed, driver habits and use of air conditioning and heating.
2. Initial battery capacity shown. May decrease with time and use.
3. Battery age and outside ambient temperature affect charging times.
4. AC, overhead and inductive charging options available.

BYD COACH & BUS
46147 BYD Blvd.
Lancaster, CA 93534
en.byd.com

BYD **K7MER**

BATTERY ELECTRIC • ZERO EMISSIONS • BUILT IN AMERICA

ELECTRIC & ECO-FRIENDLY | **30’ TRANSIT**

BYD **K7MER**
30’ TRANSIT

DIMENSIONS

Length	29.9 ft
Width	102 in
Height	134 in
Wheelbase	175.8 in
Curb Weight	28,650 lbs
GVWR	37,479 lbs
Seats	Up to 20 + 1
Wheelchair Positions	2

PERFORMANCE

Top Speed	65 mph
Range[1]	196 miles
Turning Radius	30.9 ft
Approach Angle	≥8.6°
Departure Angle	≥8.6°

CHASSIS

Front Axle	ZF front axle
Rear Axle	BYD in-wheel drive axle
Suspension	Air suspension with mechanical leveling valves
Brakes	Front & rear disc-brakes, ABS
Tires	305/70R22.5

POWERTRAIN

Motor Type	Asynchronous Motor 3 Phase
Max Power	150 kW×2
Max Torque	550 N·m×2
Battery Type	BYD LFP Battery
Battery Capacity[2]	313 kWh
Charging Time[3]	2-2.5h
Charging Capacity[4]	J1772 DC 150kW

A New Kind of Bus

The 30’ K7MER is BYD’s top-selling model for universities and corporate campuses, shuttling students and workers in quiet comfort. It performs well in smaller cities, at airports, performing arts venues and parking structures.

BYD’s unique iron-phosphate batteries are the safest in the industry, and with a 12-year battery warranty and a nationwide network of service providers, reliability is guaranteed.

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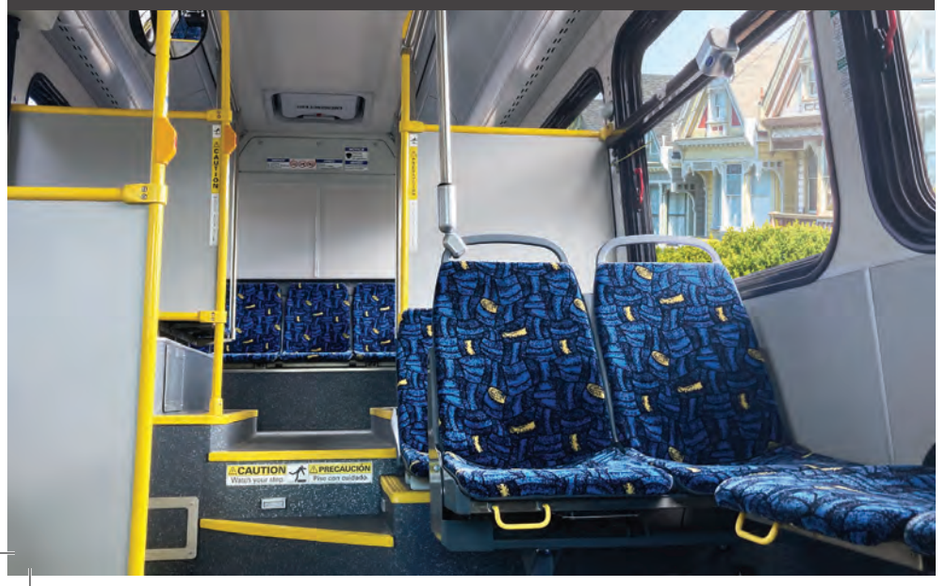

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4. AC, overhead and inductive charging options available.

BYD COACH & BUS
46147 BYD Blvd.
Lancaster, CA 93534
en.byd.com

BYD **K8M**

BATTERY ELECTRIC • ZERO EMISSIONS • BUILT IN AMERICA

ELECTRIC & ECO-FRIENDLY | **35’ TRANSIT**

BYD **K8M**
35’ TRANSIT

A New Kind of Bus

Transit systems demand high quality and extreme reliability, and the American-built K8M deliver. The all-new 35’ K8M offers a range of up to 196 miles on a single charge.

BYD’s unique iron-phosphate batteries are the safest in the industry and come with a standard 12-year warranty, ensuring that you never have to pay for battery replacement during the service life of the bus.

The innovative BYD leasing program offers flexible financing options that are tailored to your needs. With a lower total cost of ownership than diesel or CNG, it has never made more sense to electrify your fleet.

DIMENSIONS

Length	35.8 ft
Width	102 in
Height	134 in
Wheelbase	222.7 in
Curb Weight	32,120 lbs
GVWR	43,431 lbs
Seats	Up to 32+1
Wheelchair Positions	2

PERFORMANCE

Top Speed	65 mph
Range[1]	196 miles
Turning Radius	35.4 ft
Approach Angle	≥8.6°
Departure Angle	≥8.6°

CHASSIS

Front Axle	ZF front axle
Rear Axle	BYD in-wheel drive axle
Suspension	Air suspension with mechanical leveling valves
Brakes	Front & rear disc-brakes, ABS
Tires	305/70R22.5

POWERTRAIN

Motor Type	Asynchronous Motor 3 Phase
Max Power	150 kW×2
Max Torque	550 N·m×2
Battery Type	BYD LFP Battery
Battery Capacity[2]	391 kWh
Charging Time[3]	3-3.5h
Charging Capacity[4]	J1772 DC 150kW

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3. Battery age and outside ambient temperature affect charging times.
4. AC, overhead and inductive charging options available.

BYD COACH & BUS
46147 BYD Blvd.
Lancaster, CA 93534
en.byd.com

BYD **K9M**

BATTERY ELECTRIC • ZERO EMISSIONS • BUILT IN AMERICA

ELECTRIC & ECO-FRIENDLY | **40’ TRANSIT**

BYD **K9M**
40’ TRANSIT

DIMENSIONS

Length	40.2 ft
Width	102 in
Height	134 in
Wheelbase	246.1 in
Curb Weight	32,190 lbs
GVWR	43,431 lbs
Seats	Up to 37+1
Wheelchair Positions	2

PERFORMANCE

Top Speed	65 mph
Range[1]	157 miles
Turning Radius	41.7 ft
Approach Angle	≥8.6°
Departure Angle	≥8.6°

CHASSIS

Front Axle	ZF front axle
Rear Axle	BYD in-wheel drive axle
Suspension	Air suspension with mechanical leveling valves
Brakes	Front & rear disc-brakes, ABS
Tires	305/70R22.5

POWERTRAIN

Motor Type	Asynchronous Motor 3 Phase
Max Power	150 kW×2
Max Torque	550 N·m×2
Battery Type	BYD LFP Battery
Battery Capacity[2]	313 kWh
Charging Time[3]	2-2.5h
Charging Capacity[4]	J1772 DC 150kW

A New Kind of Bus

The 40’ K9M is our best-selling model, ideal for public transportation, university campuses, airports and corporate campuses.

BYD’s unique iron-phosphate batteries are the safest in the industry, and with a 12-year battery warranty and a nationwide network of service providers, reliability is guaranteed.

Our leasing program offers flexible financing options that are tailored to your organization. With a lower total cost of ownership than diesel or CNG, it has never made more sense to electrify your fleet.

Notes:
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4. AC, overhead and inductive charging options available.

BYD COACH & BUS
46147 BYD Blvd.
Lancaster, CA 93534
en.byd.com

BYD **K9MD**

BATTERY ELECTRIC • ZERO EMISSIONS • BUILT IN AMERICA

ELECTRIC & ECO-FRIENDLY | **40’ TRANSIT**

BYD **K9MD**
40’ TRANSIT

DIMENSIONS

Length	40.9 ft
Width	102 in
Height	134 in
Wheelbase	284 in
Curb Weight	35,140 lbs
GVWR	44,754 lbs
Seats	Up to 42+1
Wheelchair Positions	2

PERFORMANCE

Top Speed	65 mph
Range[1]	203 miles
Turning Radius	43.6 ft / 13.3 m
Approach Angle	≥8.6°
Departure Angle	≥8.6°

CHASSIS

Front Axle	ZF front axle
Rear Axle	BYD in-wheel drive axle
Suspension	Air suspension with mechanical leveling valves
Brakes	Front & rear disc-brakes, ABS
Tires	305/70R22.5

POWERTRAIN

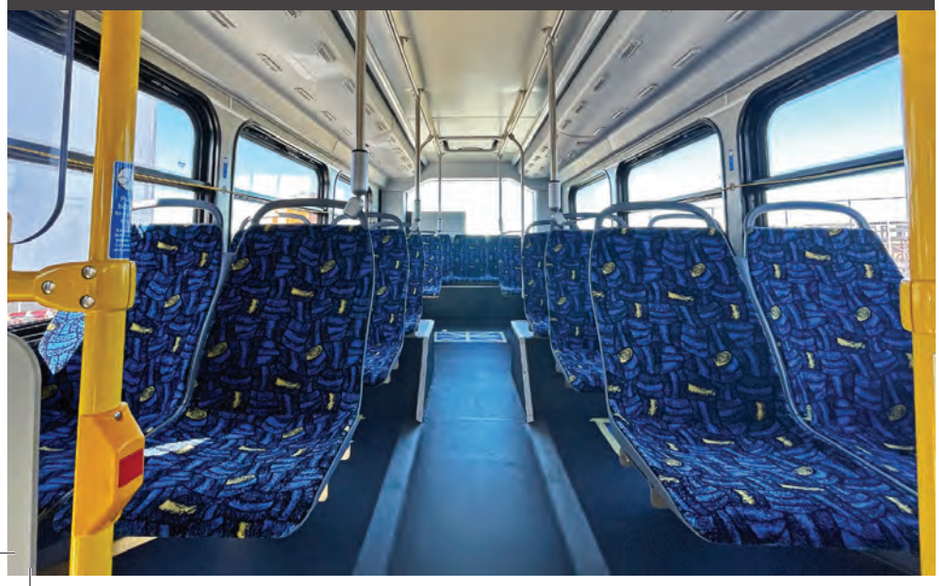
Motor Type	Asynchronous Motor 3 Phase
Max Power	180 kW×2
Max Torque	1500 N·m×2
Battery Type	BYD LFP Battery
Battery Capacity[2]	446 kWh
Charging Time[3]	3-3.5h
Charging Capacity[4]	J1772 DC 150kW

A New Kind of Bus

The 40’ K9MD is ideal for public transportation, university campuses, airports and corporate campuses.

BYD’s unique iron-phosphate batteries are the safest in the industry and come with a standard 12-year warranty, ensuring that you never have to pay for battery replacement during the service life of the bus.

The innovative BYD leasing program offers flexible financing options that are tailored to your needs. With a lower total cost of ownership than diesel or CNG, it has never made more sense to electrify your fleet.



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BYD COACH & BUS
46147 BYD Blvd.
Lancaster, CA 93534
en.byd.com

BYD **K11M**

BATTERY ELECTRIC • ZERO EMISSIONS • BUILT IN AMERICA

ELECTRIC & ECO-FRIENDLY | **60’ TRANSIT**

BYD **K11M**
60’ TRANSIT

A New Kind of Bus

With the capacity to carry up to 55 seated passengers, the 60’ K11M is ideal for high-volume urban transit systems and BRT lines. It is also perfectly designed to shuttle passengers at large airports, university campuses, entertainment venues and parking facilities.

BYD’s unique iron-phosphate batteries are the safest in the industry, and with a 12-year battery warranty and a nationwide network of service providers, reliability is guaranteed.

Our leasing program offers flexible financing options that are tailored to your organization. With a lower total cost of ownership than diesel or CNG, it has never made more sense to electrify your fleet.

DIMENSIONS

Length	60.7 ft
Width	102 in
Height	134 in
Wheelbase	239.6/275.6 in
Curb Weight	53,150 lbs
GVWR	67,450 lbs
Seats	Up to 47+1 with 5 doors Up to 55+1 with 3 doors
Wheelchair Positions	2

PERFORMANCE

Top Speed	65 mph
Range[1]	193 miles
Turning Radius	39.4 ft / 12 m
Approach Angle	≥8.6°
Departure Angle	≥8.6°

CHASSIS

Front Axle	ZF front axle
Rear Axle	BYD in-wheel drive axle
Suspension	Air suspension with mechanical leveling valves
Brakes	Front & rear disc-brakes, ABS
Tires	305/70R22.5

POWERTRAIN

Motor Type	Asynchronous Motor 3 Phase
Max Power	180 kW×2
Max Torque	1500 N·m×2
Battery Type	BYD LFP Battery
Battery Capacity[2]	578 kWh
Charging Time[3]	4-4.5h
Charging Capacity[4]	J1772 DC 150kW

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BYD COACH & BUS
46147 BYD Blvd.
Lancaster, CA 93534
en.byd.com

EVEN
RECHARGE

Powering Clean Energy Journeys

The first Environmentally and Financially Sustainable Mobile Off-Grid EV charging infrastructure Hub

- *EV Charging*
- *Power Generation*
- *Digital Advertising*
- *Retail Opportunities*

Features :

- *Off-Grid Solar Powered EV Charging*
- *Supports up to 4 Level 2 EV Chargers*
- *Provides Charging Rate of up to 35 miles per hour from each Charger*
- *Industry first Hydraulic Lift System*
- *Deliver and Set-up within hours*
- *Zero Construction Costs and Permitting Delays*
- *Remote Management - Solar, EV Charging, Retail, Advertising*
- *Branding and Wraps available*

Perfect Locations :

- *Colleges, Apartments/Condos, Rural Communities, Workplaces, City Centers, Events, Hospitals/Clinics, Strip Malls*

Renewable Energy + Retail/Digital Advertising = Positive ROI

www.evenrecharge.com info@evenecharge.com 833.833.2002

Why offer an Advanced Technology Transportation Program?

To promote advanced technologies in public and private fleets and infrastructure operations throughout the Kern region to reduce emissions, promote sustainable travel modes, and maximize system efficiency.

Kern Council of Governments

Contact Us

Kern Council of Governments

1401 19th Street, Suite 300

Bakersfield, CA 93301

Linda Urata, Regional Planner
661-635-2904
lurata@kerncog.org

Visit us on the Web

www.kerncog.org

rev. 3 2022

Advanced Technology Transportation

Kern Council of Governments

Projects

Kern COG provides leadership and staff time for technical support on a variety of advanced technology transportation projects.

- Shared Mobility: MioCar
- EV Charging Station Deployment
- First Responder Training on Alt Fuels
- Public Awareness Campaign
- Electric Bicycles, Park and Ride Lots,
- Member Agency projects
- Managed the I5 Freight ZERO Pilot Study project completed in the second quarter of 2022

Special Events and Workshops

Kern COG supports community outreach on alternative vehicles through hosting events, event sponsorships and providing staff time on planning committees.

- TRANSIT*ions* Transit Symposium
- EVs Made Easy Workshops
- National Drive Electric Week Public Awareness Campaign
- Best.Drive.EVer Test Drive Events
- Trucking with Clean Fuels Conference
- Community Fair Info. Booths
- Solar EV Car Curriculum for Teachers
- Blue Sky Partners

Kern COG Member Services: Funding

Kern COG provides grant and incentive program updates to its members via email and during technical advisory committee meetings.

Kern Medium- and Heavy-Duty Vehicle Zero Emission Vehicle (MD|HD ZEV) Infrastructure Blueprint

In partnership with Gladstein, Neandross and Associates, Kern COG was awarded a grant from the California Energy Commission (CEC). In 2022, GNA convened working group and stakeholder meetings and conducted research. Five High-Impact sites were selected for analysis. The Blueprint will be completed in April 2023. The blueprint will provide details and actions needed for implementation of the high-impact priority projects as well as regional infrastructure planning for MD|HD ZEV deployment.

Kern EV Charging Station Blueprint

Kern COG produced the 2019 Kern Region Electric Vehicle Charging Station Blueprint document through a grant from the CEC. The project to develop the Blueprint also resulted in toolkits for site hosts to use when installing charging stations. Implementation of the Blueprint began immediately following adoption and will continue into 2022 and beyond. The document and toolkits may be found online at https://www.kerncog.org/kern-electric-vehicle-charging-station-blueprint/

1. JOIN
ÚNASE

2. RESERVE
RESERVE

3. UNLOCK CAR
DESBLOQUEE EL AUTO

4. DRIVE!
¡CONDUZCA!

5. RETURN & PLUG IN TO CHARGE
DEVUELVA Y CONÉCTE EL AUTO AL CARGADOR

Sign up and start driving within a week!

Download on the App Store

GET IT ON Google Play

Download the Míocar mobile app and start driving within a week.

Descargue la aplicación móvil de Míocar y empieza a conducir dentro de una semana.

For more information you can go to www.miocar.org, or call 559-379-6665.

Para mas informacion puede ir a www.miocar.org, o llama al 559-379-6665.

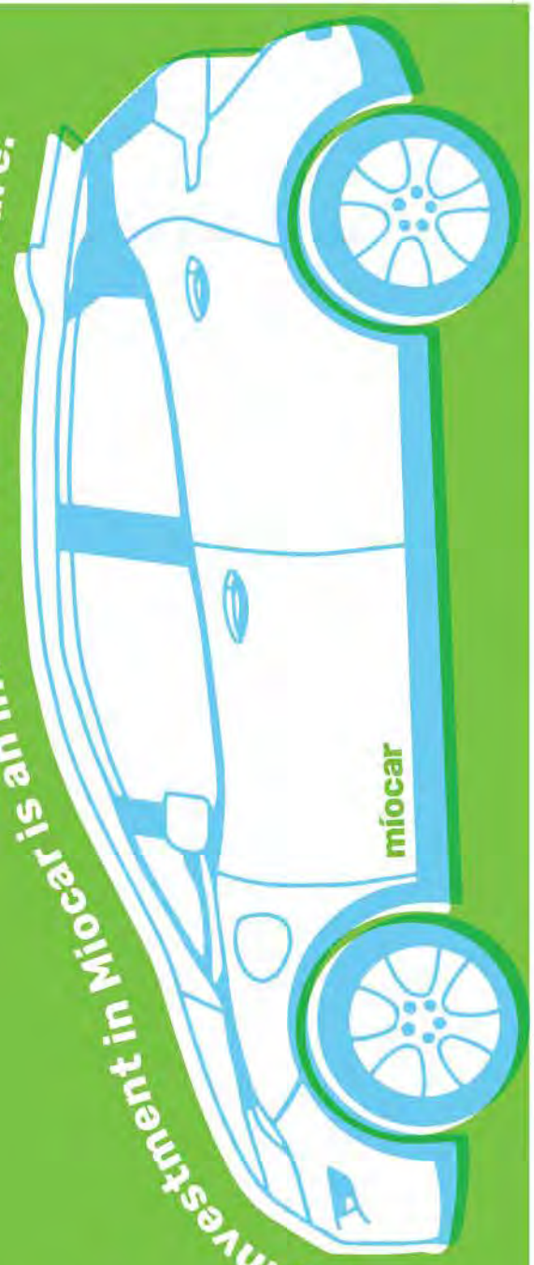
Míocar is part of California Climate Investments, a statewide initiative that puts billions of Cap-and-Trade dollars to work reducing greenhouse gas emissions, strengthening the economy, and improving public health and the environment — particularly in disadvantaged communities.

Míocar forma parte de las Inversiones del Clima de California, una iniciativa estatal que destina miles de millones de dólares de Cap-and-Trade para la reducción de gases de efecto invernadero, fortalecimiento de la economía y mejoramiento de la salud pública y el medio ambiente – especialmente en comunidades en desventaja.

California Climate Investments — Cap and Trade Dollars at Work

Self-Help Enterprises

San Joaquin Valley Air Pollution Control District



An investment in the future.

míocar

the San Joaquin Valley's carshare

Who We Are

Miocar is a revolutionary 100% electric vehicle (EV) carsharing service available in the San Joaquin Valley. Carsharing gives you the freedom to choose your vehicle when you need it for errands, appointments and much more. Carsharing also helps reduce air pollution. As a Miocar member you will have access to a network of shared electric vehicles in designated locations 24-hours a day, 7 days a week. Insurance and Car Maintenance is included.

Quienes Somos

Miocar es un servicio revolucionario de auto compartidos 100% eléctricos disponible en el Valle de San Joaquín como parte de una estrategia regional de movilidad. El uso del auto compartido le da la libertad de escoger un vehículo cuando lo necesite para hacer mandados, ir a citas médicas y mucho más. El uso del auto compartido también ayuda a reducir la contaminación del aire. Los miembros tendrán acceso a una red de vehículos eléctricos compartidos en ubicaciones designadas las 24 horas al día, 7 días a la semana. El seguro y mantenimiento del coche está incluido.

Pricing

$20 one-time membership fee
$4 per hour
$35 per day weekday
$45 per day weekend
(Starting Friday at 6pm and concluding on Sunday at 12am)
$0.35 per mile after 150 miles

Tarifas

$20 tarifa única de membresía
$4 por hora
$35 por día entre semana
$45 por día fin de semana
(Comenzando el viernes de 6pm y terminando el domingo a las 12am)
$0.35 por milla después de 150 millas

Our Cars
Nuestros Coches

CHEVY BOLT

Miocar Locations
Lugares

Dinuba
Orosi
Visalia
Wasco
Arvin
More to come!
¡Más por venir!

Applying is quick and easy:

- You must be 21 or over
- Have a relatively good driving record
- Have a credit/debit/prepaid card
- A valid driver license

Registrarse es rápido y fácil:

- Debe tener 21 años o más
- Debe tener buenos antecedentes de conducción
- Debe tener un tarjeta de crédito/débito/prepago
- Una licencia de conducir valida

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

Valley Air District is offering incentives to buy and install ***LEVEL 2 & LEVEL 3/DC FAST CHARGERS*** *to support* ***CHARGING INFRASTRUCTURE*** *in the Valley*

Who is eligible?

- *Businesses, Multiple Unit Dwellings (MUDs) & Public Agencies*
- *Applicant must be located within San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare and Valley portion of Kern counties.*

Types of Chargers & Funding Amount

	Level 2 EV Charger (240-volt)		Level 3 DC Fast Charger (480-volt)	
CHARGE TIME	*Between 4-6 hours for a full charge depending on battery of the electric vehicle*		*Between 20-25 minutes for up to an 80% charge*	
FUNDING AMOUNT	*Level 2 Single Port*	*Up to $5,000 per unit*	*Level 3/DC Fast Charger*	*Up to $25,000 per unit Applicant Cost Share: 30% of total cost*
	Level 2 Dual Port	*Up to $6,000 per unit*		
Funding Cap: $50,000 annually per applicant/site				

How the Program Works

1. *Submit an on-line application and include all supporting documentation, visit* ***valleyair.org/chargup****.*
2. *Once deemed complete and eligible, the District will issue a voucher and claim packet.*
3. *Applicant has 1 year from execution of the voucher to purchase and install the EV charger(s) at the location identified in the application.*
4. *Once all EV chargers are installed and are fully operational, redeem voucher by submitting the claim packet to the District.*
5. *Once claim is deemed complete, the District will issue a reimbursement check to the applicant.*

Examples of Eligible Sites

- **Public Areas**: *Parks, shopping centers, or restaurants.*
- **Workplace**: *Public agencies, businesses, offices, or schools.*
- **Multi-Unit Dwellings (MUD)**: *Apartment complexes or condominiums.*

**** Residential charging is ineligible for this program***

For Level 3 Chargers

- *Site must be publicly accessible 24 hours a day and 7 days a week.*

More Information

Specific requirements, supporting documentation and application can be found at ***valleyair.org/chargup*** *or call* ***559.230.5800*** *to speak with the Charge Up! team.*

INCENTIVES

The Valley air basin has made significant progress toward clean air since the District was formed more than two decades ago. However, challenges remain to meet ever-tightening air quality health standards. Consequently, more than half a billion in funding is made available for clean air projects in the Valley air basin each year.

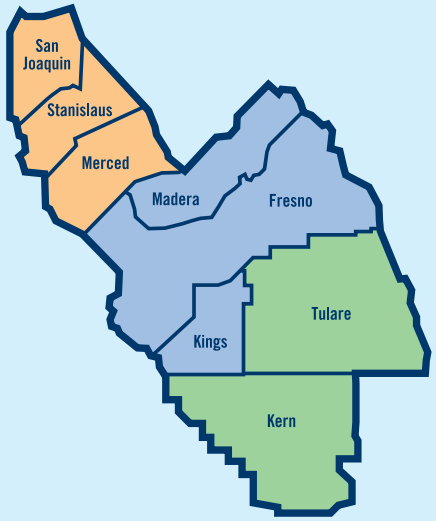
The District operates one of the largest and most well-respected voluntary incentive programs in California, with more than two billion dollars in public and private funds invested to date and more than 100,000 tons of lifetime emissions reduced. Funding through the District has increased more than 1000 percent in fewer than 10 years, reflecting the commitment of the District, businesses and industry, residents and municipalities to clean the air and improve the quality of life in the Valley.

TECHNOLOGY

The District's Technology Advancement Program (TAP) provides funding for businesses and individuals to demonstrate and develop new emission-reduction technology.

TAP has four critical focus areas tailored for Valley businesses and sources of emissions, including: researching alternatives to minimize or eliminate emissions from open burning of agricultural biomass; finding renewable energy systems that are cleaner or zero emission compared to their nonrenewable alternatives; identifying technologies that eliminate emissions from existing waste management processes; and demonstrating zero- or near-zero emissions solutions to mobile source categories.

For more information, visit www.valleyair.org or contact the nearest District office.



Northern Region
Serving San Joaquin, Stanislaus and Merced counties
4800 Enterprise Way, Modesto, CA 95356-8718
Tel: 209-557-6400 FAX: 209-557-6475
Complaint Line: 1-800-281-7003

Central Region (Main Office)
Serving Madera, Fresno and Kings counties
1990 E. Gettysburg Avenue, Fresno, CA 93726-0244
Tel: 559-230-6000 FAX: 559-230-6061
Complaint Line: 1-800-870-1037

Southern Region
Serving Tulare and Valley air basin portions of Kern counties
34946 Flyover Court, Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585
Complaint Line: 1-800-926-5550

www.valleyair.org & www.healthyairliving.com

HEALTHY AIR LIVING™

/valleyair @valleyair @valleyairdistrict

03.20 / 10k / AG

INCENTIVE GRANTS

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

1-800 SMOG INFO
www.valleyair.org

For more information visit valleyair.org/grants or call the Incentives Department at 559 230 5800

PUBLIC AGENCIES

Public agencies can make clean-air changes on a large scale through infrastructure improvements, upgrading a vehicle fleet or establishing a telecommuting program. All of these are possible through our public agency grants, which include a variety of programs:

- **Public Benefit Grants**
  For the purchase of new, alternative-fuel vehicles and infrastructure
- **School Bus Program**
  To retrofit or replace existing school buses with new emission-control systems
- **Bike Paths**
  Establish bicycle infrastructure
- **Public Transportation Subsidy and Park & Ride Lots**
  Subsidize passes for bus, shuttle and commuter rail services and constructing park and ride lots
- **Clean Green Yard Machines: Commercial**
  Provides incentives for the replacement of landscape maintenance equipment to lawn care providers
- **Charge-Up**
  Provides funds for businesses and public agencies to purchase and install electric vehicle chargers for public use
- **Alternative Fuel Mechanic Training**
  Provides funds for mechanic education or training in alternative-fuel vehicles and infrastructure

RESIDENTS

With financial assistance from the Air District, making a significant change for clean air is surprisingly easy through any of the following incentive grants:

- **Burn Cleaner**
  Change out open hearth and older, polluting wood-burning devices for cleaner, gas-burning devices
- **Clean Green Yard Machines: Residential**
  Receive a rebate when you replace an old gas-fueled lawn mower with a new electric lawn mower or get a rebate for the purchase of new electric powered landscape equipment without having to replace an old piece
- **Drive Clean in the San Joaquin**
  REPAIR
  Free auto emission checks and repair vouchers
  REPLACE
  Replace older, high polluting vehicles with cleaner, newer models
  REBATE
  Rebates for purchasing or leasing a new clean-air vehicle
- **Vanpool Voucher**
  For vanpooling to work

BUSINESSES

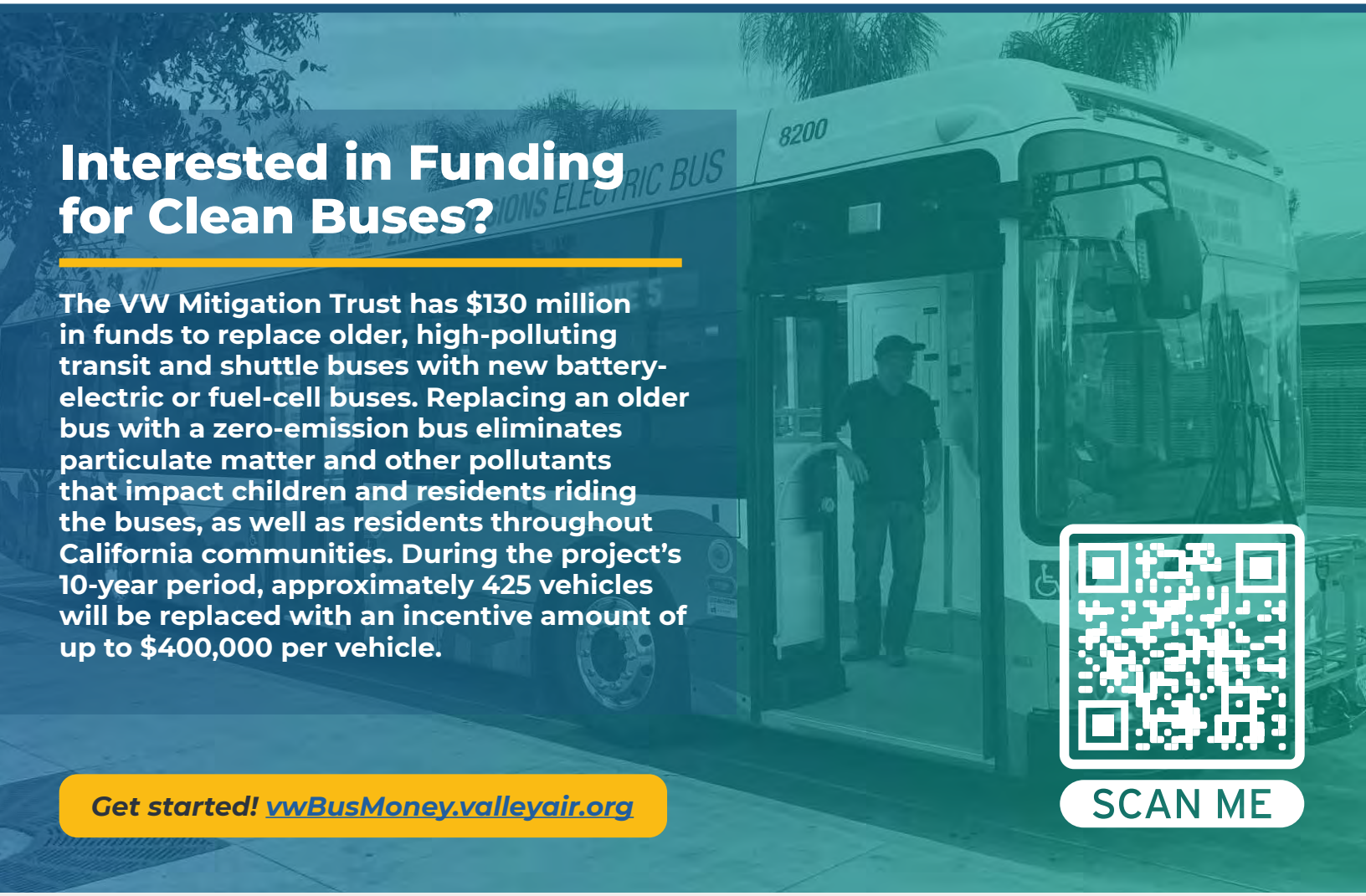
The incentives program can make it possible for business owners to adopt a cleaner, economical technology that helps their business while improving air quality. Some options include:

- **Tractor Replacement Program** – Replacement for in-use, off-road ag tractors and mobile equipment
- **Ag Pump Replacement Program** – To replace or repower ag pump engines and motors
- **Truck Replacement Program** – For truck owners to replace heavy-duty & medium-duty on-road diesel trucks
- **Off-Road Replacement** – Replaces off-road, in-use, heavy-duty construction and other non-agricultural equipment
- **Locomotive Replacement** – Replaces in-use switcher & short-line locomotives
- **Forklift Program** – For the purchase of electric forklifts
- **Low-Dust Nut Harvester Replacement Program**
  Replaces traditional nut-harvesting equipment with low-dust harvesting equipment
- **Electrified Dairy Feed Mixing Program** – Installation of electrified feed mixing equipment at Valley dairies and other confined animal feeding operations

California VW Mitigation Trust

FUNDING STILL AVAILABLE

for Shuttle & Transit Buses



Interested in Funding for Clean Buses?

The VW Mitigation Trust has $130 million in funds to replace older, high-polluting transit and shuttle buses with new battery-electric or fuel-cell buses. Replacing an older bus with a zero-emission bus eliminates particulate matter and other pollutants that impact children and residents riding the buses, as well as residents throughout California communities. During the project's 10-year period, approximately 425 vehicles will be replaced with an incentive amount of up to $400,000 per vehicle.

SCAN ME

Get started! ***vwBusMoney.valleyair.org***

Zero-Emission Transit and Shuttle Buses*

2st Installment
$65m

TOTAL FUNDING: $130M

VEHICLE TYPE: Replacement of Class 4-8 Transit & Shuttle Buses

REPLACEMENT TECHNOLOGY: Zero Emissions Only

* *The zero-emission school bus bin of the VW Mitigation Trust Fund is now oversubscribed, and applications are no longer being accepted for Installment Two of the fund.*

Funding is available statewide with applications available through online portals only and open to both public and private entities. Scrapping of old vehicles/equipment/engines is required, and at least 50% of the funding is expected to reduce emissions in disadvantaged or low-income communities.