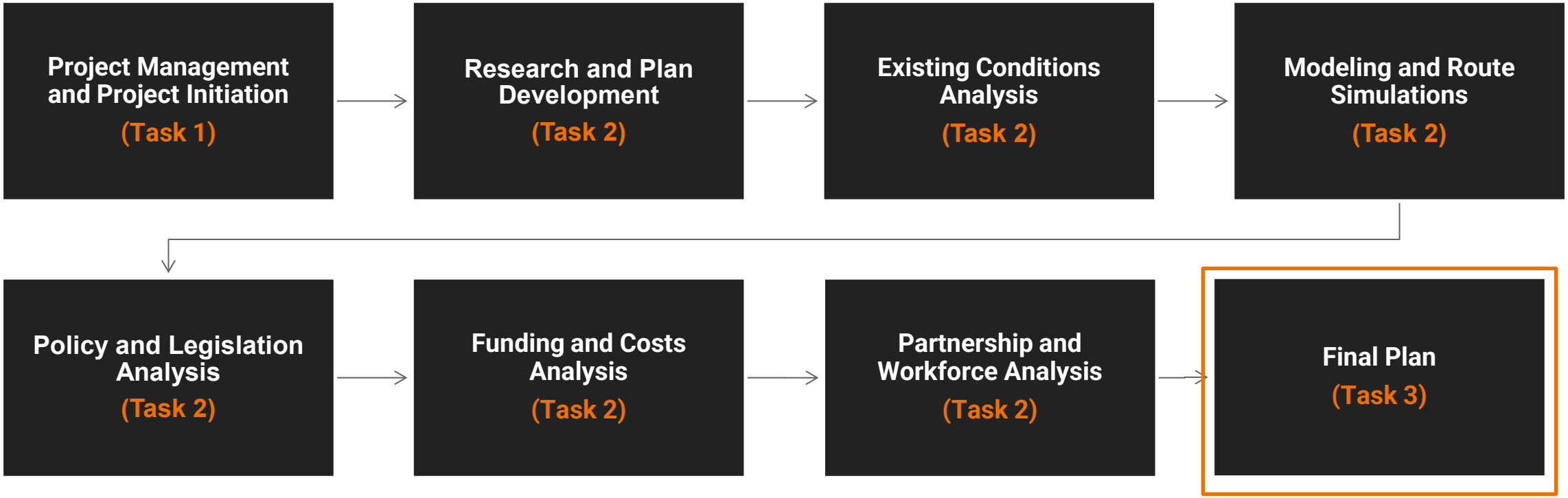
Low-No ZE Fleet Transition Plan

Atomic City Transit EV Plan

May 2025

- Project Approach
- Zero Emissions Transition Plan Requirements
  - Element 1 through 6
- Discussion


Project Management and Project Initiation
(Task 1)
Research and Plan Development
(Task 2)
Existing Conditions Analysis
(Task 2)
Modeling and Route Simulations
(Task 2)
Policy and Legislation Analysis
(Task 2)
Funding and Costs Analysis
(Task 2)
Partnership and Workforce Analysis
(Task 2)
Final Plan
(Task 3)

ZE Transition Plan Requirements

1	Long-term Fleet Strategy
2	Funding Needs Assessment
3	Policy Assessment
4	Facilities Assessment
5	Utility Partnerships
6	Workforce Assessment

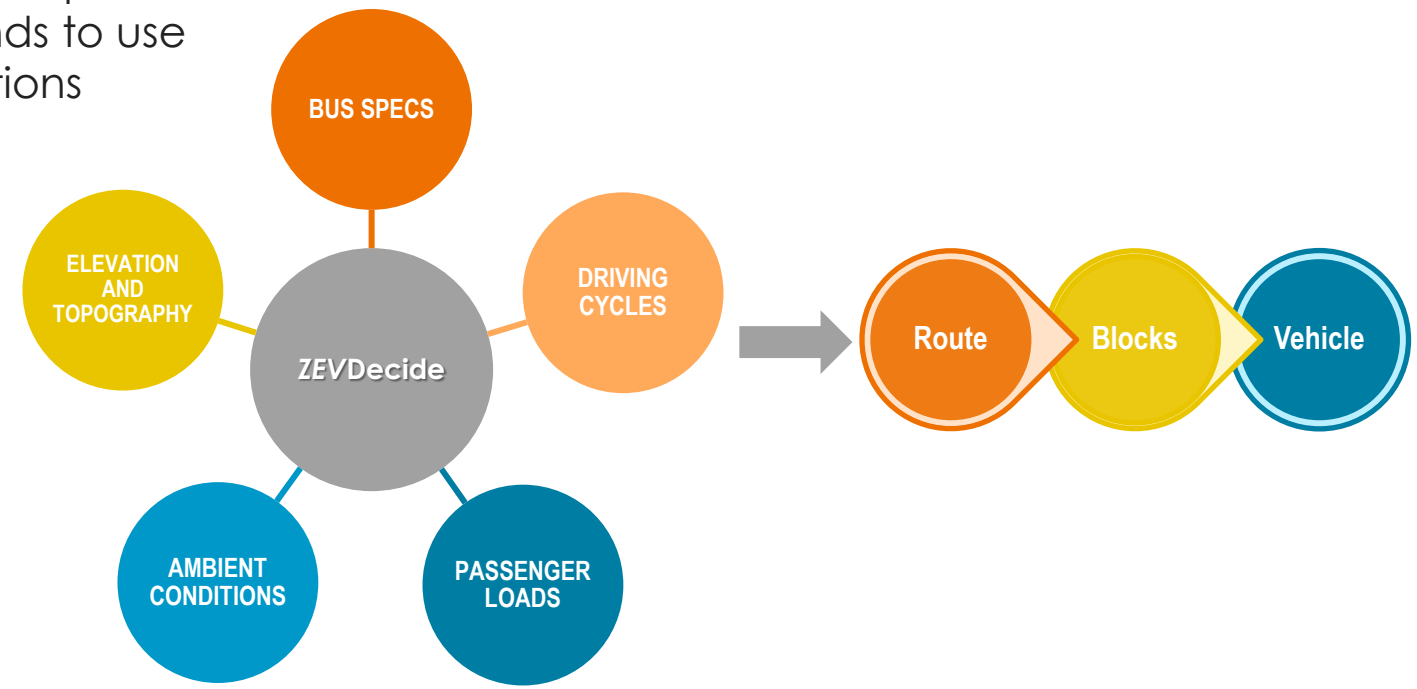
Element 1: Long-term Fleet Strategy

Goal:

Demonstrate a long-term fleet management plan with a strategy for how the applicant intends to use the current application and future acquisitions

Approach:

- Identify ideal vehicle technology
- Fleet Transition Plan
- Budget for vehicle purchase



Modeling Results Summary

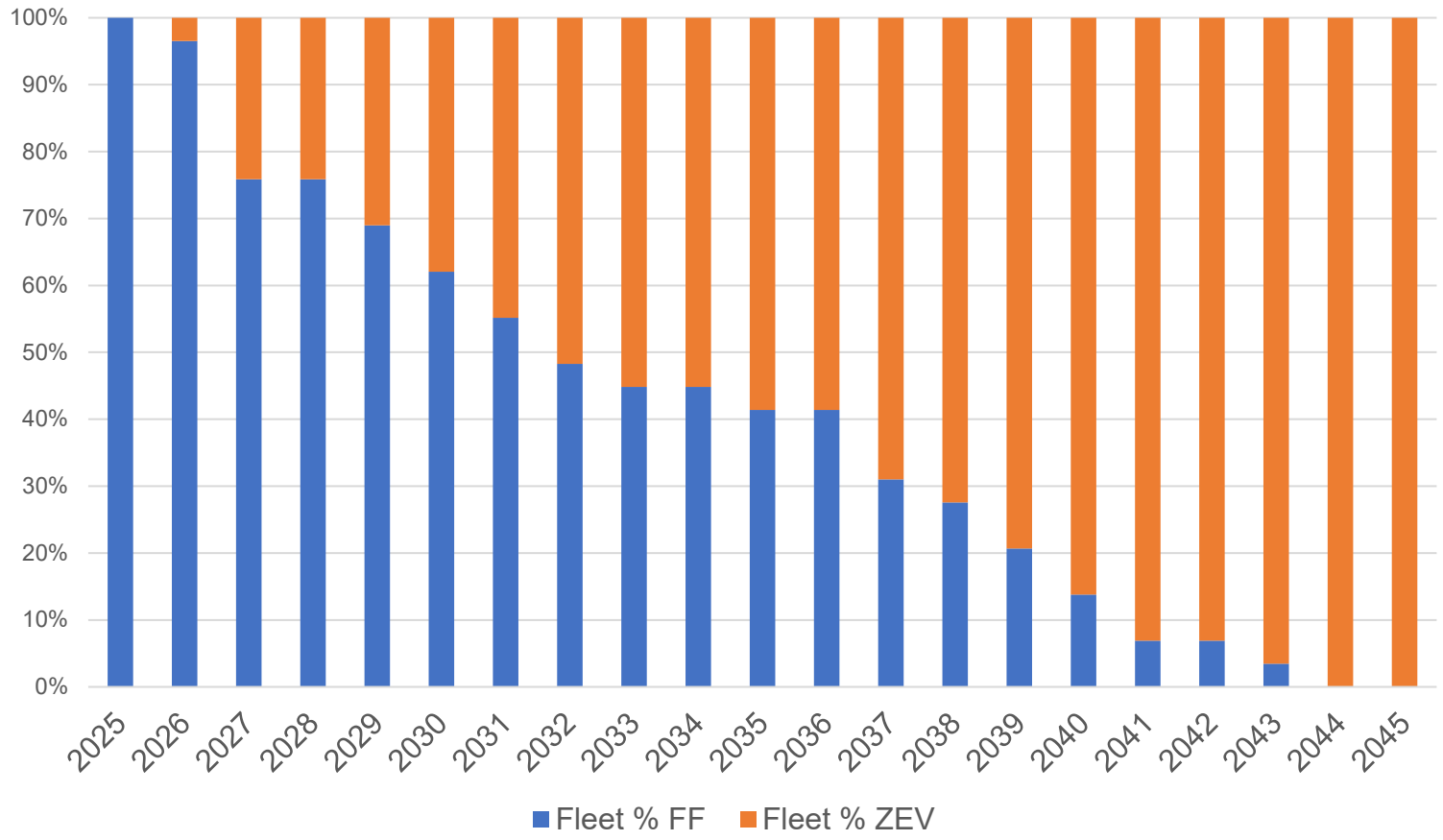
Service	Blocks Modeled	Successful Service	Suggested Strategy
Fixed Route	14	• Battery electric: 4 (29%) • Hydrogen: 11 (79%)	For BEV 100% coverage is possible if **on-route charging** is implemented, and the fleet size is increased by one.
Demand Response	N/A	• Battery electric: 77% • Hydrogen: 95%	For battery electric, **midday charging** and limiting daily mileage can provide sufficient service.

Barriers to Hydrogen Adoption

- **Limited regional hydrogen fuel supply**
- **Lack of available FCEV equivalents** for existing vehicles
- **High capital costs** for hydrogen fueling infrastructure
- **Facility upgrades required** to accommodate high-pressure gas systems

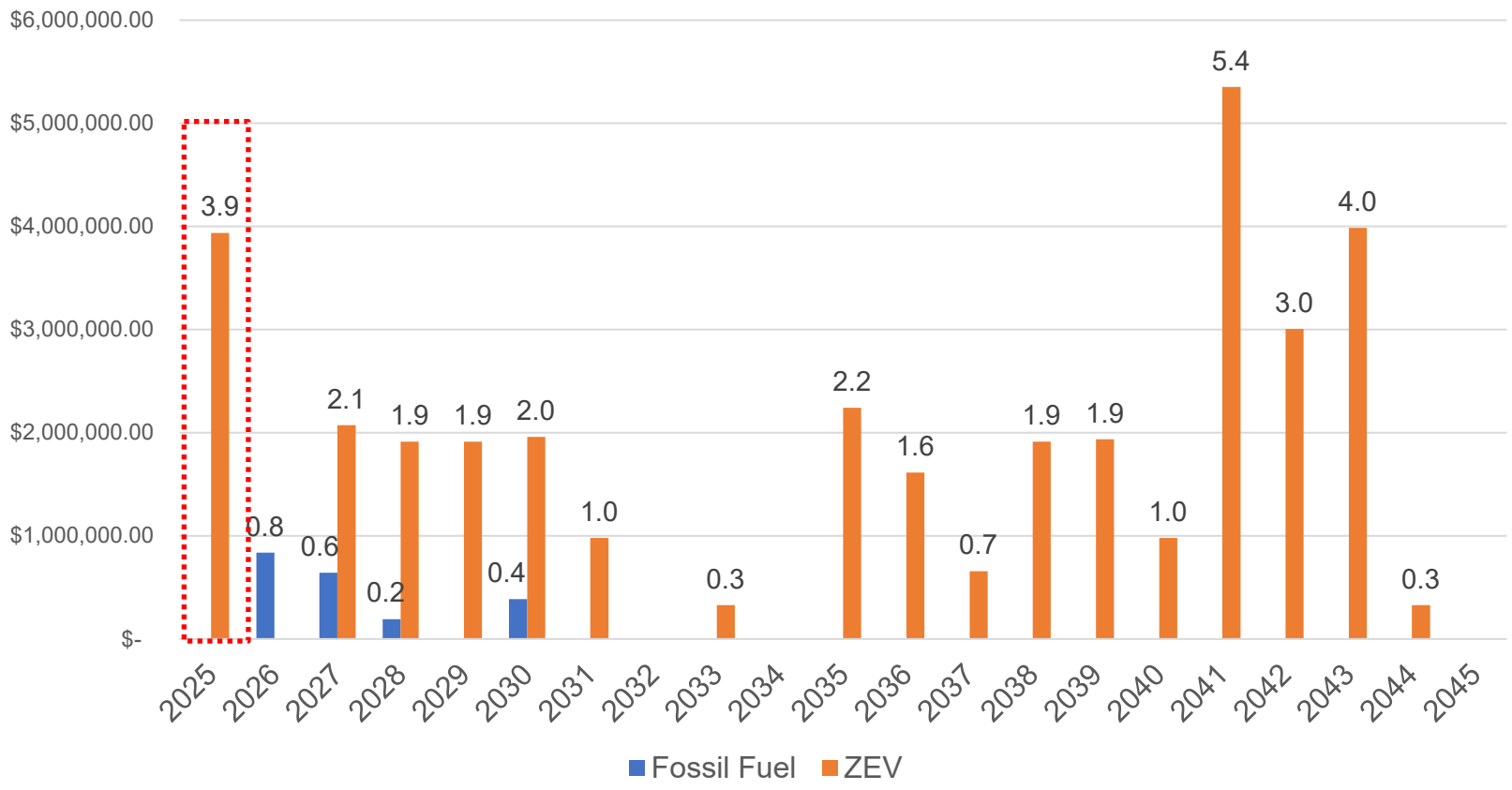
Proposed Fleet Transition Plan

- Strategic phasing of battery electric vehicles, avoids early retirement of fossil fuel vehicles (FF).
- 100% zero-emissions by 2044.



Element 1: Combined Annual Vehicle Procurement Costs

- Annual capital costs for vehicles purchased through 2045
- The projected total cost for the fixed route and demand response ZEVs over the transition period is $35.1 million



Element 1: Conclusions

- **Low-No Funding Request:** Supports the procurement of **five battery electric vehicles**
- **Long-Term Goal**: ACT aims to achieve a **100% zero-emission fleet by 2045**
- **Estimated Capital Costs**:
  - The total cost for the full ZEV transition is projected at **$35.1 million for vehicle purchases**

Element 2: Funding Needs Assessment

Goal:

Address the availability of current and future resources to meet costs for the transition and implementation

Approach:

- Understand capital cost requirements for vehicles and charging infrastructure.
- Identify available funding programs at the federal and state level

Element 2: Potential Funding Sources

Source	Agency	Fund/Grant/Program	Mechanism
Federal	Federal Transit Administration (FTA)	• Low or No Emission Program (Low-No Program) (5339(c)) • Buses and Bus Facilities Program (5339(a) formula, 5339(b) competitive) • Grants for Rural Areas (5311) • Enhanced Mobility of Seniors & Individuals with Disabilities (5310)	• Competitive • Both • Formula • Formula
Federal	Federal Highway Administration (FHWA)	• Congestion Mitigation and Air Quality Improvement Program (CMAQ)	• Competitive
Federal	United States Department of Transportation (USDOT)	• Local and Regional Project Assistance Program (RAISE)	• Competitive
Federal	Internal Revenue Service (IRS)	• 30C Alternative Fuel Vehicle Refueling Property Credit	• Tax Credit
State	New Mexico Department of Transportation (NMDOT)	• New Mexico National Electric Vehicle Infrastructure (NEVI) Planning • Electric Vehicle Infrastructure Grant Program	• Formula • Competitive
State	New Mexico Environment Department (NMED)	• Diesel Emission Reduction Funding	• Competitive
State	New Mexico Department of Finance and Administration	• New Mexico Match Fund	• Competitive
State	New Mexico Energy, Minerals, and Natural Resources Department (EMNRD)	• Electric Vehicle Charging Station Make-Ready Building Renovation Tax Credit	• Tax Credit
State		• Alternative Fuel Tax Exemption	• Tax Exemption
Other		• Low Carbon Fuel Standard (LCFS credits)	• Credits
Other		• Transportation Development Credits	• Credits

Element 3: Policy Assessment

Goal:

Consider policy and legislation impacting relevant technologies

Approach:

- List of state or local policies or legislation that support or hinder implementation

Federal: Bipartisan Infrastructure Law

- Provides funding to modernize public transportation and invest in ZEV adoption

State: 2019-003 Executive Order Addressing Climate Change and Energy Waste Prevention

- Reduce greenhouse gas emissions by at least 45% by 2030 as compared to 2005 levels

Alignment with Significant State Policies

Policy	Description	Agency
State Agency Low- and Zero-Emission Vehicle Acquisition Requirement	• Requires 100% of state fleet purchases to be ZEVs by 2035, with agencies setting annual EV purchasing targets.	• New Mexico Department of Transportation (NMDOT)
Alternative Fuel Vehicle and Hybrid Electric Vehicle Acquisition Requirements	• Mandates that 75% of light-duty fleet vehicles purchased by state agencies and educational institutions be hybrid or alternative fuel vehicles.	• New Mexico Energy, Minerals and Natural Resources Department (EMNRD)

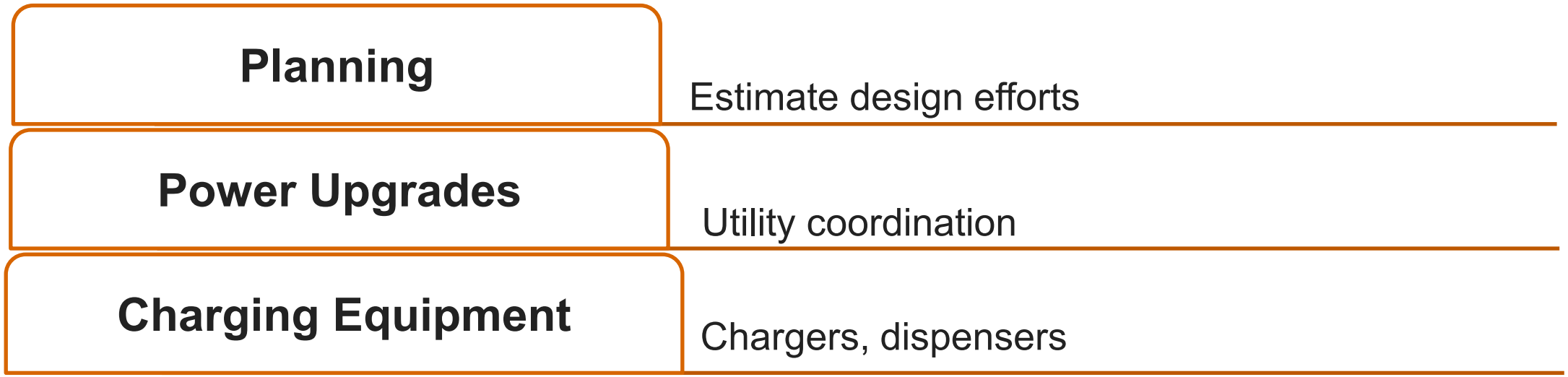
Element 4: Facilities Assessment

Goal:

Include an evaluation of existing and future facilities and their relationship to the technology transition

Approach:

- Facilities site visits
- Facilities existing conditions
- Recommend upgrades
- Implementation cost



Conceptual Site Plans

Prior assessments had Identified the ideal location for the first battery electric vehicles and charger locations

On-Route Charging

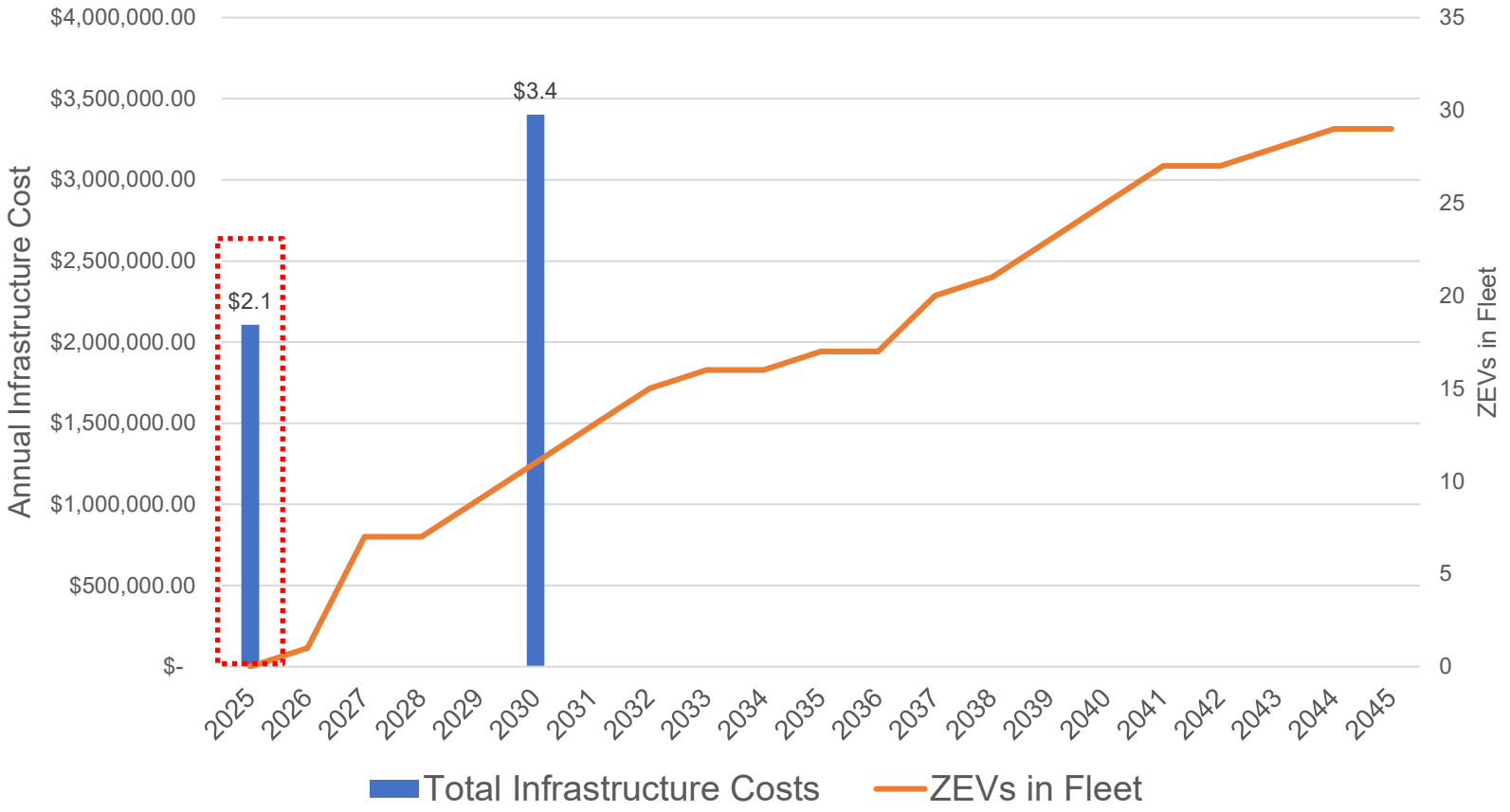
- Transit Center
- White Rock Library or Visitor Center

BEV Infrastructure Project Cost

Project	Assumptions
Infrastructure Planning	$200k per project
Power Upgrade Projects	$300k per project assumed. Dependent on capacity added.
Charging Installation Projects	• Five 450kW chargers and five pantograph • Ten 150 kW chargers and 20 dispensers • Six 12 kW charger w/dispensers

Depot and On-route Charging Infrastructure Costs

The estimated total infrastructure costs are approximately $5.5 million for full implementation



Element 5: Utility Partnership

Goal:

Describe partnership with the utility or alternative fuel providers

Approach:

- Identified power requirements at each site
- Identify transition timeline
- Start conversation with utilities

Element 5: DOT Partnership

Goal:

Describe partnership with NMDOT

Approach:

- Provided funding to conduct ZE Fleet Transition Plan
- Providing feedback and guidance throughout project to ensure alignment with state and regional goals

Element 6: Workforce Assessment

Goal:

Examine the impact of the transition to zero-emission technologies on the current workforce

Approach:

- Skill gap assessment
- Retraining needs
- Cost and schedule for implementation

Workforce Assessment

Apprenticeship Program	Vendor Training from Vehicle and Charger OEM	Train-the-Trainer Approach
ZEB Tools	Retraining and Refresher Courses	ZEB Training from Other Transit Agencies
National Transit Institute (NTI) Training	Local Partnerships and Collaborations	Professional Associations

Training Resources

Training Resource	Low-No Budget	Sources
OEM Operator, Maintenance Staff, and First Responder Training	$48,000	Quote from Gillig, $9,600 per vehicle
Infrastructure Training	$21,840	1% of infrastructure costs
Training Aids, Simulators, Components, Equipment	$132,000	Quote from Gillig
PPE, Tools, and Equipment	$91,000	Quote from Gillig
Total	**$292, 840**	

Summary and Conclusions

Proposed Transition for Atomic Transit to ZEV

- ACT can complete their transition to 100% electric vehicles by 2045
- Modeling results have found that **on-route charging** is critical to the successful implementation of battery electric vehicles.
  - Without on-route charging, substantial service modifications would be required, as well as increasing the fleet size for the same level of service
- While hydrogen is not a viable option at the time ACT should continue monitoring potential partnerships and hydrogen development in the region
- Close coordination with public utilities will be critical
- Implementation of ZEV should be phased-in, with the first phase being supported by competitive federal grants, like Low-No.

Total Cost of Implementation

Item	Details	Estimated Cost
Vehicles	• 24 battery electric buses • 6 battery electric cutaways • Includes vehicle replacement through 2045	$35,100,000
Infrastructure	• 3 on-route 450 kW DC chargers w/pantographs • 10 fast chargers (150 kW) with 20 dispensers • Six level 2 (12 kW)with dispensers	$5,500,000
Training	• Operator training • Maintenance staff training provided by Original Equipment Manufacturer (OEM) • Use of charging equipment training • Procurement of training equipment • Personal protective equipment (PPE) and tools	$292,840
	Total Estimated Cost	**$40,892,840**

Proposed Phase 1

Item	Details	Estimated Cost
Vehicles	• Three 40-ft. battery electric buses (BEBs) • Two battery electric (BE) cutaways	$3,936,000
Infrastructure	• Two 450 kW DC chargers w/pantographs • Four 150 kW chargers with eight dispensers • Two 12 kW chargers with dispensers	$2,106,000
Training	• Operator training • Maintenance staff training provided by Original Equipment Manufacturer (OEM) • Use of charging equipment training • Procurement of training equipment • Personal protective equipment (PPE) and tools	$292,840
	Phase 1 Total Estimated Cost	**$6,334,840**

Comments or Questions?

Element 3: Alignment with State Policies

Policy	Description
2019-003 Executive Order Addressing Climate Change and Energy Waste Prevention	• Mandates greenhouse gas reductions and promotes clean energy adoption in state operations.
New Mexico EV Program	• Supports a clean energy economy by promoting widespread EV adoption, aligning with the state's goal of net-zero emissions by 2050.
New Mexico EV Infrastructure Deployment Plan	• Utilizes NEVI funds to establish public DC fast chargers along interstates, expanding charging access for communities, businesses, and government entities.
Utility Electric Vehicle Support	• Requires public utilities to file transportation electrification plans, offering incentives for EV infrastructure, fleet electrification, and consumer education to increase EV adoption.
State Emissions Reduction Strategy	• Aims to cut greenhouse gas emissions by 45% (from 2005 levels by 2030) by implementing ZEV and low-emission vehicle standards.
Clean Transportation Fuel Program	• Establishes a carbon intensity reduction target of 20% by 2030 and 30% by 2040, promoting cleaner transportation fuels to lower emissions.
Energy and Fuel Cost Savings Contracts	• Allows government fleets to finance alternative fuel vehicles and infrastructure through savings from reduced fuel and operational costs.
State Agency Low- and Zero-Emission Vehicle Acquisition Requirement	• Requires 100% of state fleet purchases to be ZEVs by 2035, with agencies setting annual EV purchasing targets.
Alternative Fuel Vehicle and Hybrid Electric Vehicle Acquisition Requirements	• Mandates that 75% of light-duty fleet vehicles purchased by state agencies and educational institutions be hybrid or alternative fuel vehicles.
Medium- and Heavy-Duty Zero Emission Vehicle Requirement	• Adopts California's Advanced Clean Trucks (ACT) rule, requiring manufacturers to meet ZEV sales quotas starting in model year 2026.
ZEV Sales Requirements and Low Emission Vehicle (LEV) Standards	• Requires manufacturers to meet GHG emissions standards and mandates 82% of new passenger vehicle sales be ZEVs by 2032 under California's Advanced Clean Cars II regulation.
Regional Electric Vehicle (REV) West Plan	• Collaborates with seven states to establish the Intermountain West EV Corridor, ensuring coordinated EV infrastructure, charging locations, and awareness programs across state borders.