SonomaCountyTransit

Innovative Clean Transit
Zero-Emission Bus Rollout Plan
May 2023

Section A: Transit Agency Information

Sonoma County Transit
355 West Robles Avenue
Santa Rosa, CA 95407
(707) 585-7516

The Innovative Clean Transportation (ICT) Zero-Emission Bus Rollout Plan is required by the California Air Resources Board which passed the ICT regulation in December 2018. The ICT requires California's transit agencies to begin transitioning to a Zero-Emission fleet no later than January 1, 2029. This plan is the first of several plans that will be updated periodically as Sonoma County Transit makes progress in its transition from a fleet comprised mostly of compressed natural gas (CNG) coaches to one comprised of battery-electric powered coaches.

Agency information: Sonoma County Transit began operations in 1980 with only one bus. Today, the system operates a fleet of 49 coaches, including 43 powered by compressed natural gas, 3 all-electric and 3 small gasoline cutaway vehicles. The system provides local and intercity service within Sonoma County. Local services are provided within the cities of Rohnert Park, Cotati, Cloverdale, Healdsburg, Windsor, Sebastopol and Sonoma, in addition to, the unincorporated areas of Sonoma Valley and Guerneville/Monte Rio. Intercity services connect the County's nine incorporated cities with downtown Santa Rosa where connections can be made to local transit services within Santa Rosa (via Santa Rosa CityBus) and for regional services provided into Marin and San Francisco counties operated by Sonoma Marin Area Rail Transit service (SMART) and Golden Gate Transit.

Sonoma County Transit began operating compressed natural gas buses in 1996 and phased out all diesel-powered coaches by 2005. In 2018, Sonoma County Transit took delivery of its first all-electric coach, a 30' BYD K7M. Since then, two additional K7M coaches were received in 2020. Currently an additional three K7M's and 3-35' K8M BYD buses are on order with deliveries scheduled in June and October 2023.

This plan anticipates that, provided adequate funding, Sonoma County Transit's heavy-duty fixed-route fleet will be all-electric by 2035. Planned installation of chargers at the transit facility will be conducted in phases with the first phase to be developed in FY 2023-24 to accommodate charging of 19 vehicles. While capacity of our utility, Pacific Gas & Electric is limited, SCT has enrolled in its fleet-ready program and has informed the utility of its charging needs over the next five-year period and its anticipated ultimate charging needs in 2035.

On January 31, 2023, the Sonoma County Board of Supervisors awarded a 10 – 40' electric bus purchase to Proterra. This is the County's first purchase of 40' electric coaches and will mark the introduction of electric buses on SCT's main intercity routes that crisscross the county north/south and east/west. The new coaches will arrive in July/August 2024.

2024 Proterra 40' Coach with Sonoma County Transit livery (shown below):

As of March 2023, Sonoma County Transit's peak weekday vehicle requirement is 30 fixed-route buses and up to 15 paratransit vehicles. Six cutaway vans used in the fixed-route and paratransit fleets are subject to ICT regulations as they exceed 14,000 lbs. GVWR.

The service population is approximately 375,000.

Sonoma County Transit operates within the Bay Area Air Quality Management District and the Northern Sonoma County Air Pollution Control District.

Sonoma County Transit is not part of a Joint Zero-Emission Group.

Section B: Rollout Plan General Information

1. ***Does your transit agency's Rollout Plan have a goal of full transition to zero-emission technologies by 2040 that avoids early retirement of conventional transit buses?***

   Yes, Sonoma County Transit anticipates reaching full transition to zero-emission vehicles by 2035. Per the anticipated procurement program, no buses will be subject to early retirement and all will meet their federally required service life.

2. ***The ICT regulation requires 100% ZEB purchases in 2029. Conventional transit buses that are purchased in 2028 could be delivered in or after 2029. Please explain how your transit agency plans to avoid potential early retirement of conventional buses in order to meet the 2040 goal.***

   Sonoma County Transit's last purchase of conventional buses (compressed natural gas) was in 2019. Since 2020, all purchases of vehicles that fall under the ICT regulation, have been zero-emission vehicles.

3. ***When did your transit agency's board or governing body approve the Rollout Plan?***

a. ***Approval date:*** 05/23/2023

b. ***Resolution number:***

c. ***Is a copy of the board approved resolution attached to the Rollout Plan submitted to CARB?***

An approved Board resolution will be included when available.

4. ***Contact information for follow-up on details of the Rollout Plan:***

   a. Bryan Albee
   Transit Systems Manager
   bkalbee@sctransit.com
   707-585-7516

5. ***Who created the Rollout Plan?*** Sonoma County Transit staff

6. ***Cost for Rollout Plan creation:*** Approximately $12,500.

7. ***How may staff hours were involved in creating the Rollout Plan?*** Approximately 125.

Section C: Technology Portfolio

What types of zero-emission bus technologies (e.g. battery electric and fuel cell buses) does your transit agency plan to deploy through 2040?

Sonoma County Transit plans to deploy only battery electric buses and has plans to replace its existing fleet of ICT applicable vehicles by 2035. It's anticipated that the fleet will be charged overnight at its Santa Rosa yard and that remote charging will be necessary to support ZEB operation on local services. These locations include Cloverdale, Monte Rio, Windsor and Sonoma. Currently, we do not expect the need to remote charge the 40' bus fleet.

Section D: Current Bus Fleet Composition and Future Bus Purchases

Please prepare a table illustrating expected future bus purchases, including the number of buses in total expected to be purchased or leased in the year of purchase. Identify the number and percentage of ZEBs of the total bus purchases each year, as well as bus types and fuel types. Identify the same type of information for purchase of conventional buses. Bus types include standard, articulated, over-the-road, double decker and cutaway buses. For zero-emission technologies, identify the fuel type employed.

Table D-1 illustrates Sonoma County Transit's anticipated vehicle purchases through 2035 when it's projected that the entire fleet will be battery-electric vehicles. Between 2023 and 2035, its projected that a total of 64 ZEBs will be purchased and that over this period, all CNG and applicable cutaway vans (to which the ICT applies) will be ZEBs. In 2035, its projected that the fleet will consist of a fleet of 57 ZEBs after vehicle retirements are considered.

As shown in Table D-1, in 2035 the fleet replacement program will cost a projected $50.8 million to implement over the twelve-year period. As noted in Section H, Sonoma County Transit will apply for assistance from local, state and regional sources over the twelve-year period to implement the ICT regulation as it currently applies to the Sonoma County Transit fleet. Funding assistance from discretionary sources such as the state of California's TIRCP and the Federal Transit Administration's Low-No and 5337 Bus & Bus Facilities programs are critical to meet ICT and to replace the fleet with ZEBs.

Of the six vans included in our projection that are used for fixed-route and paratransit services are vans that exceed 14,000 lbs. GVWR and are subject to the ICT regulation. Light-duty vehicles over 14,000 lbs. GVWR in the fleet are few as the majority of the vans primarily used for paratransit service are under 14,000 lbs. GVWR and not currently subject to ICT regulations. Replacement of these gasoline powered vehicles are not included in this plan. We expect CARB to release an update on how these vehicles will be treated in 2026. At present, light-duty ZEB cutaway vehicles do not provide the needed range to support countywide paratransit operations.

Section E: Facilities & Infrastructure Modifications

Since Sonoma County Transit's first ZEB was deployed in late 2018, it has planned for the transition of its yard from that of fueling Compressed Natural Gas (CNG) buses to charging electric buses. In 2020, SCT had installed three chargers in its Santa Rosa yard to support its three 30' BYD coaches.

Working with our local utility, Pacific Gas & Electric (PG&E), SCT currently has plans to expand its charger network from a total of three AC chargers to a total of six AC chargers and twelve DC chargers by mid-2024. This expansion of charging capability is largely funded by TIRCP funds received in 2022 along with TDA funds.

This first phase of development is estimated to cost $4.1 million dollars which will be funded with a combination of TDA and TIRCP funds dedicated to the project in FY 2023-24.

The next phase of the yard charging project includes installation of chargers on SCT's CNG parking islands. As CNG fueling needs are reduced in the future, existing CNG fueling posts will be replaced by electric chargers. It is expected that this phase of yard development will occur during the 2026 – 2034 time-period. It's anticipated that the last CNG powered buses will be retired in 2035.

Table E-1 shows that beginning in summer 2023, Sonoma County Transit will develop charging stations to accommodate charging 19 buses at one time. Additional chargers are anticipated to be installed in 2026, 2028 and 2030. In 2030, 55 charging stations will be available to

Sonoma County Transit Fleet Summary - includes applicable paratransit vehicles

TABLE D 1

Timeline (Year)	Total # of Buses to Purchase	# of ZEB Purchases	% of Annual ZEB purchases	Total ZEBs in Fleet	ZEB Bus Type	ZEB Fuel Type	# of Conv. Bus Purchases	% of Annual Conv. Bus Purchases	Types of Conv. Buses	Fuel Types of Conv. Buses	ZEB Bus Retirements	Conv. Bus Retirements	Total Retirements	Fleet Total
Existing Fleet	3	3	100%	3	3-30'	BEB	---	---	---	---	---	---	---	55
2023	6	6	100%	9	3-30', 3-35'	BEB	0	---	---	---	0	3	3	58
2024	16	10	63%	19	10-40'	BEB	6	38%	CAW	Gasoline	0	16	16	58
2025	0	0	---	19	---	---	0	---	---	---	0	0	0	58
2026	13	13	100%	32	13-40'	BEB	0	---	---	---	0	13	13	58
2027	0	0	---	32	---	---	0	---	---	---	0	0	0	58
2028	16	10	63%	42	10-40'	BEB	6	38%	CAW	Gasoline	0	16	16	58
2029	0	0	---	42	---	---	0	---	---	---	0	0	0	58
2030	11	11	100%	52	5-30', 6-40'	BEB	0	---	---	---	1	11	12	57
2031	0	0	---	52	---	---	0	---	---	---	0	0	0	57
2032	3	3	100%	52	5-40'	BEB	0	---	---	---	3	0	3	57
2033	5	5	100%	57	CAW	BEB*	0	---	---	---	0	5	5	57
2034	0	0	---	57	---	---	0	---	---	---	0	0	0	57
2035	3	3	100%	57	3-30'	BEB	0	---	---	---	3	0	3	57
Total	76	64	---	57	---	---	12				7	64	71	57

* anticipated, if vehicle type is available that meets paratransit range requirements

Projected Fleet Replacement Costs (from 2026 forward)

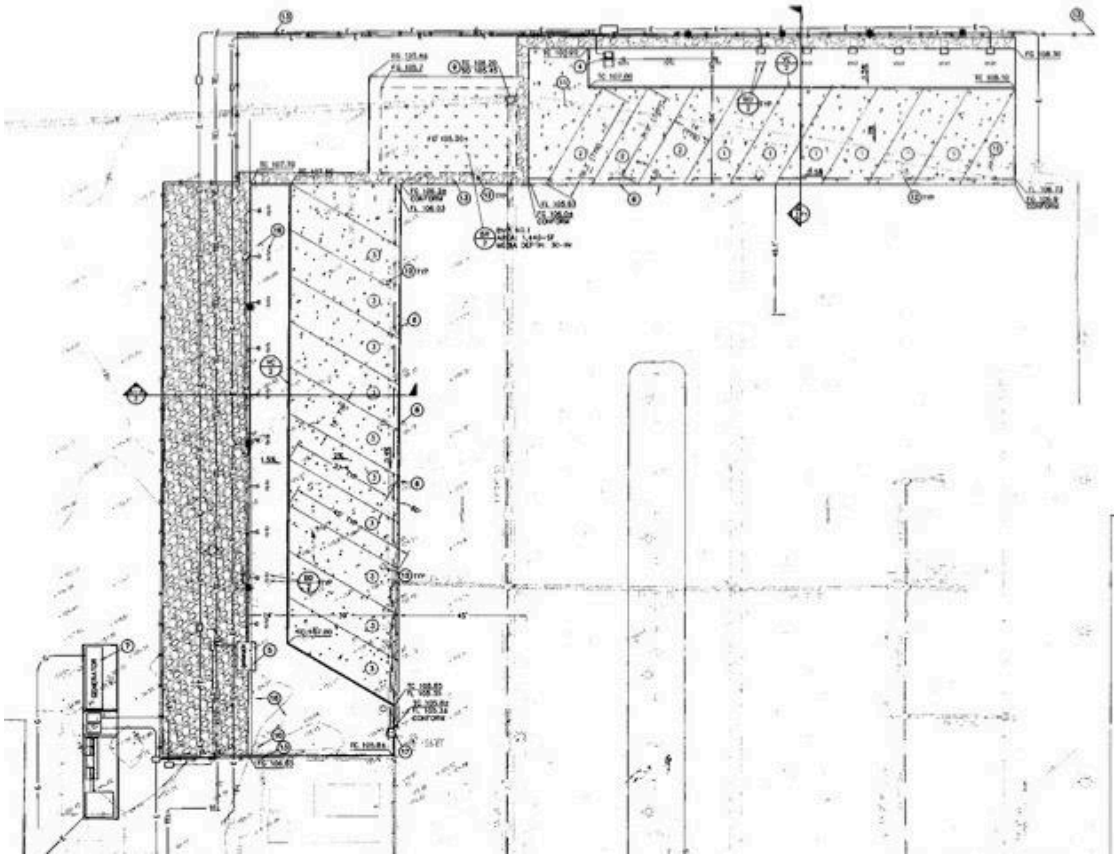
TABLE D 2

Timeline (Year)	Total # of Buses to Purchase	# of ZEB Purchases	Price Each	Fleet Total	# of Conv. Bus Purchases	Price Each	Fleet Total	Total
Existing Fleet	3	3			---			
2023	6	6	Funding Secured		0	Funding Secured		
2024	16	10			6			
2025	0	0			0			
2026	13	13	$1,150,000	$14,950,000	0			$14,950,000
2027	0	0			0			
2028	16	10	$1,219,000	$12,190,000	6	$150,000	$900,000	$13,090,000
2029	0	0			0			
2030	11	11	$1,292,140	$14,213,540	0			$14,213,540
2031	0	0			0			
2032	3	3	$1,369,668	$4,109,005	0			$4,109,005
2033	5	5	$350,000	$1,750,000	0			$1,750,000
2034	0	0			0			
2035	3	3	$900,000	$2,700,000	0			$2,700,000
Total	76	64		$49,912,545	12		$900,000	$50,812,545

accommodate the ZEB fleet. When additional buses are added to the fleet, beyond 2030, they will be charged on a second charging cycle each night. This second-cycle charging will also accommodate the paratransit fleet should vehicles under 14,000 GVWR be included in the ICT in the future.

It is projected that Sonoma County Transit's charging program will cost an estimate $9.05M to implement between 2026 and 2035. This number does not include an estimated $4.1 million that's been included in SCT's FY 2023-24 budget to fund the development of 19 charging stations for the existing fleet and buses on order with delivery in July/August 2024.

Phase I Electric Charging Facility Plan – 19 Charging Spaces, 13 DC, 6 AC



Remote charging: It's anticipated that in 2030, remote chargers will be necessary at the Sonoma Plaza, Cloverdale City Hall, Monte Rio and Windsor to accommodate local buses that will be deployed in these outlying communities. Due to long deadheads and the current amount of scheduled service, mid-day on-site charging will be necessary given the current range of 30' coaches that are deployed on these routes.

Resiliency: As Sonoma County Transit is often called upon to provide shuttle services during times of disaster such as wildfires or floods, a backup source of power is important when electric power at the Transit Facility may be unavailable due to the local disaster or related power outages. In its plans for expanded charging capabilities at the Transit Facility, natural gas-powered electric generators have been included in the construction program. The first natural gas-powered generator will be included in SCT's development during FY 2023-24 when 19 charging stations

Charger Development Plan

TABLE E-1

Division/Facility Name	Address	Main Functions	Types of Infrastructure	Service Capacity	Needs Upgrade (Yes/No)?	Estimated Construction Timeline	Estimated Construction Cost	Funding Needed
Sonoma County Transit Operating Yard	355 West Robles Ave Santa Rosa, CA	Operations, maintenance, administration	New service need to accommodate BEV fleet	19 - BEB	Yes	3 - AC chargers exist in 2022. Planned for 3- AC and 13 - DC chargers in 2023.	$4,100,000	Funding Secured
				12 - BEB	Yes	2026 - 12 new DC chargers	$2,200,000	$2,200,000
				12 - BEB	Yes	2028 - 12 new DC chargers	$2,350,000	$2,350,000
				12 - BEB	Yes	2030 - 12 new DC chargers	$2,500,000	$2,500,000
				55 - BEB				
Sonoma Plaza	Downtown Sonoma	In-Route Charging	Momentum Dynamics inductive charger	2 – 30' BEB	Yes	2030	$500,000	$500,000
Cloverdale City Hall	Downtown Cloverdale	In-Route Charging	Momentum Dynamics inductive charger	1 – 30' BEB	Yes	2030	$500,000	$500,000
Monte Rio	Creekside Park	In-Route Charging	Momentum Dynamics inductive charger	1 – 30' BEB	Yes	2030	$500,000	$500,000
Windsor	Windsor Depot	In-Route Charging	Momentum Dynamics inductive charger	1 – 30' BEB	Yes	2030	$500,000	$500,000
				5 - 30' BEB		Total Projected Cost:	$13,150,000	$9,050,000

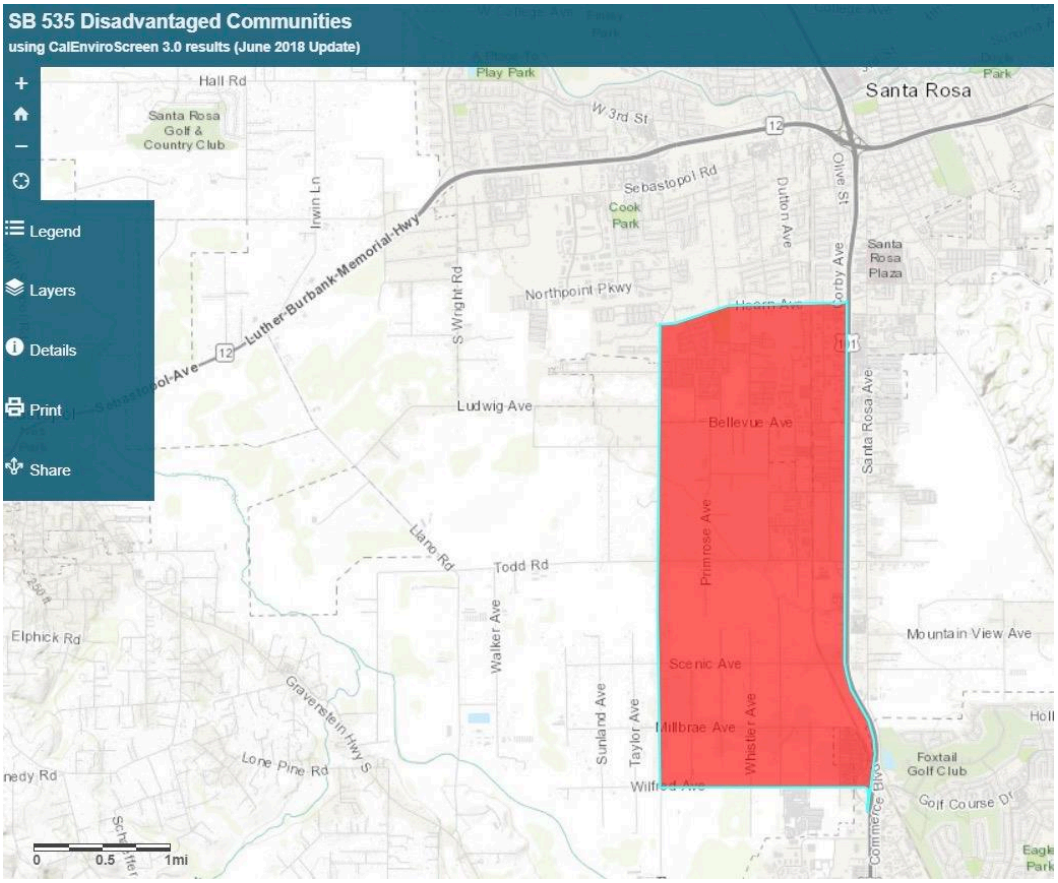
are constructed. It is estimated that each generator will add approximately $1.2 million in cost and that at full development, as many as three generators will be necessary.

Section F: Providing Service in Disadvantaged Communities

Sonoma County Transit participates in ongoing public outreach and surveys in partnership with the Metropolitan Transportation Commission (MTC) and local municipalities as well as ridership data to identify passengers meeting this group definition. In the Spring of 2018, MTC and SCT conducted an on-board survey of SCT passengers. 71% of respondents reported an annual income of $49,999 or less. Results from this on-board survey also demonstrated that 41% of SCT passengers lack access to a private vehicle. Over 40% of SCT routes serve communities of concern which is identified using poverty level data. Well over 40% of passengers representing a disadvantaged group will directly benefit from this project. SCT will continue to use data sets such as public outreach, ridership data, and environmental data to monitor the benefit and response from the community.

Sonoma County Transit serves the Santa Rosa / Rohnert Park disadvantaged community. Currently a ZEB is deployed on local routes 12 and 14. With delivery of new buses anticipated in late 2023 and mid-2024, routes 42, 44 & 48 will be served by ZEBs.

Census ID	Location	Routes
6097153200	Santa Rosa / Rohnert Park, CA	12, 14, 42, 44, 48



Section G: Workforce Training

Describe your transit agency's plan and schedule for the training of bus operators and maintenance and repair staff on zero-emission bus technologies.

Sonoma County Transit's contract workforce provided by Transdev has already been operating and maintaining SCT's ZEB fleet and its charging facility for several years. As the purchase and delivery of ZEB's continue over the next several years the workforce will be shifting from a primary CNG-based fleet to that of an electric-based fleet. Using the worldwide resources of Transdev and bus manufacturer, Proterra, extensive on-going training will be required of the existing workforce. We do not expect the maintenance staff will decline, but rather will be working differently on the new vehicles. The mechanics will evolve into technicians serving the new ZEB fleet and new charging systems.

Sonoma County Transit will work with its contract operator, Transdev, to develop a ZEB training program that will provide extensive training to its operators and its maintenance employees on electric vehicles as the fleet continues its transition from a CNG fleet to one comprised only of ZEB's. This re-skilling of the existing maintenance staff looks to the future as we work to retain and expand the capabilities of the maintenance personnel. It will assist efforts to retain existing employees yet provide career opportunities when future recruitments are necessary. As Sonoma County Transit transitions to ZEB's, no loss of any maintenance positions will occur, however, some job functions will transition from mechanics to technicians.

In addition to working with Transdev, Sonoma County Transit will contract with Proterra for up to two-years to provide on-site training of maintenance personnel on how to diagnose, repair and maintain SCT's Proterra coaches. We assume having a full-time Proterra technician at Sonoma County Transit for training purposes during this period. Through these combined efforts, our existing CNG focused maintenance personnel will become extensively trained in proper ZEB maintenance and repair.

Section H: Potential Funding Sources

Please identify all potential funding sources your transit agency expects to use to acquire zero-emission technologies (both vehicles and infrastructure.)

Sonoma County Transit will use a variety of funds to acquire its electric fleet and make infrastructure improvements over the life of this plan. Currently, sixteen buses are on order with anticipated delivery by August 2024. These buses are funded by combination of local, state and federal funding sources.

Looking beyond the current buses on order, future fleet replacements will rely heavily on State and Federal funding assistance to meet the vehicle purchases anticipated in Section D of this plan. Primary sources of assistance Sonoma County Transit will rely upon is the State's TIRCP and FTA's Low-No and Bus & Bus Facilities programs. In early 2023, Sonoma County Transit requested funding assistance for 34 vehicles to fulfil its replacement program and combined with the existing electric fleet, will enable full compliance with current ICT requirements.

These discretionary funding programs can provide the necessary funding needed to implement this plan as existing funding sources cannot meet the anticipated need of over $50.8 million for vehicles and $9.05 million in facility upgrades and remote charging infrastructure to complete Sonoma County Transit's fleet transition to ZEBs.

If in 2026, light duty vehicles are included in the ICT requirements, additional funding will be required to replace this fleet.

Table H-1 illustrates potential funding sources Sonoma County Transit will use to support its transition to ZEBs.

TABLE H 1

Fund/Grant	Level of Government	Description	Applicability
Section 5307	Federal	Federal formula funds	Annual apportionment
Section 5311	Federal	Federal formula funds for rural transit operators	Annual apportionment
Section 5339	Federal	Federal formula funds	Annual apportionment
Low-No Program	Federal	Federal discretionary program	Annual call for projects
Bus & Bus Facilities	Federal	Federal discretionary program	Annual call for projects
LCTOP	State of California	State funds that can be used for ZEB purchases.	Annual apportionment
TIRCP	State of California	Competetive program for specific projects.	Competitive funding program, funding received for program of projects 2022 - 2027.
TFCA	Bay Area AQMD	Formula funds that can be used for BEB, with conditions.	Annual apportionment
TDA	State of California	General transit operating and capital assistance provided to transit operators.	Annual apportionment

Summary:

Several challenges exist as Sonoma County Transit transitions its largely CNG powered fleet to one powered by battery-electric zero-emission vehicles. As noted in Section H, the combined cost of replacement fixed-route vehicles and the projected additional charging facilities needed to support the fleet is projected to exceed $60 million dollars. Sonoma County Transit's reliance on discretionary state and federal funding sources is the only way to achieve the goal of meeting the requirements of the Intelligent Clean Transportation regulation, as formula-based capital programs simply do not provide the funds necessary to support this goal.

This plan will be updated on an occasional basis to report on Sonoma County Transit's progress in meeting the requirements of the ICT regulations.