Agenda TAC

Technical Advisory Committee

IN-PERSON MEETING

Transportation Management Services Department
SOUTH CONFERENCE ROOM
2885 South Horseshoe Dr.
Naples, FL, 34104

March 24, 2025, 9:30 A.M.

1. **Call to Order**
2. **Roll Call**
3. **Approval of the Agenda**
4. **Approval of the February 24, 2025 Meeting Minutes**
5. **Open to Public for Comments Items Not on the Agenda**
6. **Agency Updates**
   A. FDOT
   B. MPO Executive Director
7. **Committee Action**
   A. Review and Comment on the First Draft FY26-30 Transportation Improvement Program
   B. Review and Comment on First Draft Bicycle & Pedestrian Master Plan - continued from February meeting
8. **Reports & Presentations (May Require Committee Action)**
   A. Draft Transit Zero Emission Fleet Transition Plan by Benesch
9. **Member Comments**
10. **Distribution Items**
11. **Next Meeting Date**
    April 28, 2025
12. **Adjournment**

PLEASE NOTE:

The meetings of the advisory committees of the Collier Metropolitan Planning Organization (MPO) are open to the public and citizen input is encouraged. Any person wishing to speak on any scheduled item may do so upon recognition of the Chairperson. Any person desiring to have an item placed on the agenda should contact the MPO Director at least 14 days prior to the meeting date. Any person who decides to appeal a decision of the advisory committee will need a record of the proceedings pertaining thereto, and therefore may need to ensure that a verbatim record of the proceeding is made, which record includes the testimony and evidence upon which the appeal is to be based. In accordance with the Americans with Disabilities Act, any person requiring special accommodations to participate in this meeting should contact the Collier Metropolitan Planning Organization 72 hours prior to the meeting by calling (239) 252-5814. The MPO's planning process is conducted in accordance with Title VI of the Civil Rights Act of 1964 and Related Statutes. Any person or beneficiary who believes that within the MPO's planning process they have been discriminated against because of race, color, religion, sex, age, national origin, disability, or familial status may file a complaint with the Collier MPO Title VI Coordinator, Ms. Suzanne Miceli (239) 252-5814 or by email at: Suzanne.Miceli@colliercountyfl.gov, or in writing to the Collier MPO, attention: Ms. Miceli, at 2885 South Horseshoe Dr., Naples, FL 34104.

TECHNICAL ADVISORY COMMITTEE of the
COLLIER METROPOLITAN PLANNING ORGANIZATION
MEETING MINUTES
February 24, 2025, 9:30 a.m.

1. Call to Order

Ms. Bickett called the meeting to order at 9:31 a.m.

2. Roll Call

Ms. Miceli called the roll and confirmed a quorum was present.

TAC Members Present
Alison Bickett, *Chair*, City of Naples Public Works Deputy City Engineer
Don Scott, *Vice-Chair*, Lee MPO Executive Director
Bert Miller, Collier County Growth Management Community Planning & Resiliency Planning Manager
Bryant Garrett, Collier County Airport Authority Airport Operations Executive Manager
David Rivera, City of Naples Traffic Operations Supervisor
John Lambcke, Collier Schools Transportation Director
Kathy Eastley, Collier County Transportation Planning Planner III
Margaret Wuerstle, Southwest Florida Regional Planning Council Executive Director

TAC Members Absent
Daniel Smith, City of Marco Island Director of Community Affairs
Justin Martin, City of Marco Island Public Works Department Director
Omar De Leon, Public Transit & Neighborhood Enhancement Division (PTNE) Public Transit Manager
Ute Vandersluis, Naples Airport Authority Senior Airport Development Coordinator

MPO Staff
Anne McLaughlin, Executive Director
Dusty Hansen, Senior Planner
Sean Kingston, Principal Planner
Suzanne Miceli, Operations Support Specialist II

Others Present
Sonal Dodia, Jacobs Engineering
Bill Gramer, Jacobs Engineering *(arrived during 7.A.)*
Others Present via Zoom
Colleen Ross, Jacobs Engineering

3. Approval of the Agenda

***Mr. Garrett** moved to approve the agenda. **Ms. Wuerstle** seconded. Carried unanimously.*

4. Approval of the Meeting Minutes

It was noted that the minutes contained an error in the vote to approve the November 2024 minutes, which cited **Ms. Wuerstle** as making the motion to approve, but **Mr. Garrett** was the member who made the motion. It was confirmed that the minutes would be amended.

Mr. Scott *moved to approve the amended January 27, 2025 meeting minutes.* ***Mr. Garrett*** *seconded. Carried unanimously.*

5. Public Comments for Items not on the Agenda

None.

6. Agency Updates

A. FDOT

Not present.

B. MPO Executive Director

Mr. Kingston, on behalf of Ms. McLaughlin, reminded the Committee of the Collier MPO's plans in development, which include the Long Range Transportation Plan (LRTP), the Comprehensive Safety Action Plan (CSAP), Bicycle & Pedestrian Master Plan Update (BPMP), and the Transit Development Plan (TDP), and that there would be public meetings announced in the near future for the plans.

7. Committee Action

A. Preliminary Draft Bicycle and Pedestrian Master Plan – Review and Comment

Ms. Bickett mentioned that the Bicycle and Pedestrian Advisory Committee (BPAC) had provided preliminary comments for the Draft Bicycle and Pedestrian Master Plan update (BPMP) at their February 18, 2025 meeting, but requested more time to review the plan in order to provide detailed comments.

A group discussion followed, and it was agreed that TAC also wanted more time to review the plan in order to provide detailed comments, as there was a great deal to review and newer members desired background information.

Ms. McLaughlin said at the start of the BPMP update, a preliminary inventory of bike-ped facilities was completed and compared with SUN Trail alignments in development. At the February BPAC meeting, members reviewed evaluation criteria and noted the great need to create infrastructure to accommodate micromobility and e-bikes. The update would be expanded to align with the regional trail network. Language regarding the safety elements of the BPMP update would be informed by Collier MPO's Comprehensive Safety Action Plan (CSAP).

Mr. Kingston reviewed the draft BPMP (which can be viewed in the February 24, 2025 TAC Agenda), and said that the 2019 BPMP's vision, goals and strategies have been carried through and updated.

Anticipated next steps would include a presentation of the draft to the MPO Board, further committee reviews, community outreach at local events, public workshops, culminating with final presentations.

Mr. Scott *moved to continue the review and comment of the Draft Bicycle and Pedestrian Master Plan to the March 24, 2025 TAC meeting.* ***Mr. Rivera*** *seconded. Carried unanimously.*

8 Reports & Presentations (May Require Committee Action)

A. Update on 2050 Long Range Transportation Plan (LRTP) – Public Outreach, Socio-economic Data and Draft Needs List

Ms. Dodia provided a presentation on the 2050 Long Range Transportation Plan (LRTP) (which can be viewed in the February 24, 2025 TAC Agenda), mentioning that the most recent roadway needs map incorporated feedback and comments from the advisory committees and the public and only includes roadways, as other elements such as safety and bike-ped facilities will be informed by Collier MPO's other plans. Community and public outreach efforts for the LRTP would continue.

Ms. Eastley mentioned that the 2050 needs map showed three potential overpass locations, one being Golden Gate Pkwy over Livingston Rd., and that Collier County Transportation planning was in the midst of a corridor congestion study for that road segment, considering a Livingston Rd. over Golden Gate Pkwy overpass to avoid consecutive uphill then downhill driving.

Mr. Gramer said the possibility for the intersection is a fly over but either road could be considered.

Mr. Scott asked if the Needs Plan showed anything for I-75 beyond the 8 lanes, as the master plan for the Moving Florida Forward (MFF) initiative shows 10 lanes, and asked why the Everglades Interchange was only partial.

Ms. Dodia said the plan was in the initial phase and she would look into **Mr. Scott's** question regarding the 8 lanes.

Mr. Gramer said the exact location of a potential Everglades Interchange was still being considered.

9 Member Comments

Ms. Eastley mentioned that Collier County Transportation Planning was in the process of submitting two County Incentive Grant Program (CIGP) grants for two 4 to 6 lane expansion projects for design in 2030 for Pine Ridge Rd between Logan Blvd. & Collier Blvd., which would include bike-ped facilities, and Santa Barbara Rd. from Painted Leaf Ln. to Pine Ridge Rd., which involves connecting an intermittent sidewalk on the east side of the road. Submissions were due to FDOT at the end of March 2025. A public meeting for the Golden Gate Pkwy Corridor Study was scheduled for April 10, 2025 at the Golden Gate Community Center.

Mr. Bryant inquired about the status of the Immokalee Loop Road project. **Ms. Mclaughlin** said she believed the MFF project was funded through construction. She said she would look into it and provide more details to Mr. Garrett at a later date.

Ms. Bickett said that the City of Naples was working on getting their bike-ped projects completed for the City of Naples Bicycle & Pedestrian Master Plan and were reviewing projects for the upcoming year. She was looking forward to the completion of their bike detection project.

Mr. Lambcke inquired why the 2050 LRTP map showed Everglades Blvd. being expanded, but there was no plan to expand Immokalee Rd. He asked why the plan was connecting a 4-lane segment into a 2-lane segment, when the whole idea of providing 4-lanes is to improve the flow of traffic. He understood converting Camp Keis into a 4-lane to offset traffic from Immokalee Rd. but thought Immokalee Rd. should also be expanded as there are three new developments being built in the next ten years.

Mr. Gramer said that the models showed that the major movement was south, and that Everglades Blvd. would act as a "bookend", to allow traffic to travel south and get off at Oil Well Rd. or Vanderbilt Beach Rd., when it gets extended to Everglades Blvd. and eventually Golden Gate Pkwy., to create an alternative north-south route to distribute traffic.

Mr. Scott said that a Needs Plan isn't always cost feasible, so some sections may not be included in the final draft of the 2050 LRTP. He said new announcements were coming from Washington D.C. every day and that so far, Transportation Improvement Program (TIP) Amendments would be reviewed, with the length of time of the reviews was unknown, and there might be new criteria as all Environment Justice information and Complete Streets programs had been removed from the federal government's website.

10 Distribution Items

A. FDOT Flyer on the I-75 at Pine Ridge Road Interchange Improvements

The item was distributed.

B. Updated 2025 MPO Meeting Calendar

The item was distributed.

11. <u>Next Meeting Date</u>

March 24, 2025, 9:30 a.m. –Transportation Management Services Bldg., South Conference Room, 2885 S. Horseshoe Dr., Naples, FL, 34104 – in person.

12. <u>Adjournment</u>

Ms. Bickett adjourned the meeting at 10:53 a.m.

EXECUTIVE SUMMARY
COMMITTEE ACTION
ITEM 7A

Review and Comment on the First Draft FY 2026-2030 Transportation Improvement Program

---

OBJECTIVE: For the committee to review and comment on the first draft FY 2026-2030 Transportation Improvement Program (TIP).

CONSIDERATIONS: The TIP is revised every year to update references to calendar and fiscal years, annual reporting on performance measures, the prior year's List of Project Priorities, new project evaluation criteria, if applicable, and new state or federal guidance if applicable.

The annual TIP update also includes project sheets based on the new FDOT 5-year Work Program. However, project sheets are not included in the initial draft because the state legislature has not yet approved FDOT's Work Program. FDOT has notified the MPO that the project sheets are anticipated to be distributed on, or shortly after, April 9, 2025.

The edited pages of the current TIP (FY25-29) are shown in track changes format in A**ttachment 1** and the entire draft FY26-30 TIP (excepting project sheets) is shown as clean copy in **Attachment 2.** The draft Tentative Work Program is provided in **Attachment 3** for reference.

The next steps are:

- TAC/CAC review and comment on project sheets- April 28
- Board preview on May 9
- TAC/CAC endorsement on May 19
- Board approval on June 13

Staff will give a brief overview of the draft TIP at the committee meeting.

STAFF RECOMMENDATION: That the committee review and comment on the first draft FY 2026-2030 TIP.

Prepared by: Anne McLaughlin, MPO Director

ATTACHMENTS:

1. Draft FY 26-30 TIP – edited pages in Track Changes
2. Draft FY 26-30 TIP – clean copy (project sheets not included)
3. FDOT Draft Tentative FY26-30 Work Program

EXPLANATION OF PROJECT COSTS

Part I of the TIP contains all projects that are listed in the ~~FY2025 – FY2029~~FY2026-2030 TIP. Each project is listed on a separate project page.

Projects often require multiple phases which may include any or all of the following, as listed at the beginning of this document:

CAP	Capital
CST	Construction
DSB	Design Build
ENV	Environmental
INC	Contract Incentives
MNT	Maintenance
OPS	Operations
PDE	Project Development & Environment (PD&E)
PE	Preliminary Engineering
PLN	Planning
ROW	Right-of-Way
RRU	Railroad & Utilities

Phases of projects are funded and may have multiple funding sources. There are many sources, as listed before the phase list at the beginning of this document.

Large projects are sometimes constructed in smaller segments and may be shown in multiple TIPs. When this happens, the project description will indicate that the current project is a segment/ phase of a larger project.

TRANSPORTATION DISADVANTAGED PROJECTS

This section includes the Transportation Disadvantaged program projects in ~~FY2025~~ FY2026 – ~~FY2029~~FY2030. The Community Transportation Coordinator (CTC) for the Transportation Disadvantaged program in Collier County is the Collier County Board of County Commissioners (BCC) which provide services under a memorandum of agreement with the Florida Commission for the Transportation Disadvantaged. The Collier MPO, as the Designated Official Planning Agency for the program (DOPA) confirms that projects programmed through FY ~~2029~~ 2030 are all consistent with the Transportation Disadvantaged Service Plan (TDSP) major update which was adopted by the Collier Local Coordinating Board (LCB) on October 4th, 2023. The two Transportation Disadvantaged program projects are listed below.

The amount of the MPO's LCB assistance and the Transportation Disadvantaged Trust Fund (TDTF) for FY2026 was not yet available when this TIP was adopted. The amounts listed below were submitted for funding in June 2024. The next application submittal will occur in June 2025, for FY 2026.

Collier MPO LCB Assistance
The amount of the FY 2025 Planning Grant Allocations for the Transportation Disadvantaged Trust Fund is $30,780. This grant allocation is used by the Collier MPO to support the LCB.

Collier County FY 2025 TDTF / Trip and Equipment Grant
The TDTF and Trip and Equipment Grant are funded by the Florida Commission for the Transportation Disadvantaged. The FY 2025 amount of the grant is projected to be $765,322 with a local match of $85,035 for a total funding amount of $850,357, pending approval by the BCC. These funds are used to cover a portion of the operating expenses for the Collier Area Paratransit Program.

APPENDIX E: FEDERAL LANDS APPROPRIATIONS

(Eastern Federal Lands Highway Division of the Federal Highway Administration (FHWA))

There are no Federal Lands Highways Projects in Collier County in ~~FY25-29~~26-30.

APPENDIX G: FISCAL CONSTRAINT

*** The FDOT Five-Year TIP Funding Summary for the Collier MPO is shown on the following page. The data is based on FDOT's ~~4/8/24~~4/9/25 snapshot of the Work Program.***

APPENDIX I: ADDITIONAL PLANS AND STUDIES & Part 667 Report

This Appendix is intended to show transportation projects, plans and studies that are underway but are not included in this TIP for various reasons. They may have been funded in a previous TIP but not yet completed, or they may be statewide projects that are located partially within Collier County but are not assigned to an individual MPO.

This Appendix includes FDOT's 23 CFR Part 667 report, "Periodic Evaluation of Facilities Repeatedly Requiring Repair and Reconstruction Due to Emergency Events."

operations, maintenance, and marketing in public transit systems are also eligible for Service Development Program funding. Service Development projects are subject to specified times of duration with a maximum of three years. If determined to be successful, Service Development Projects must be continued by the public transit provider without additional Public Transit Service Development Program Funds.

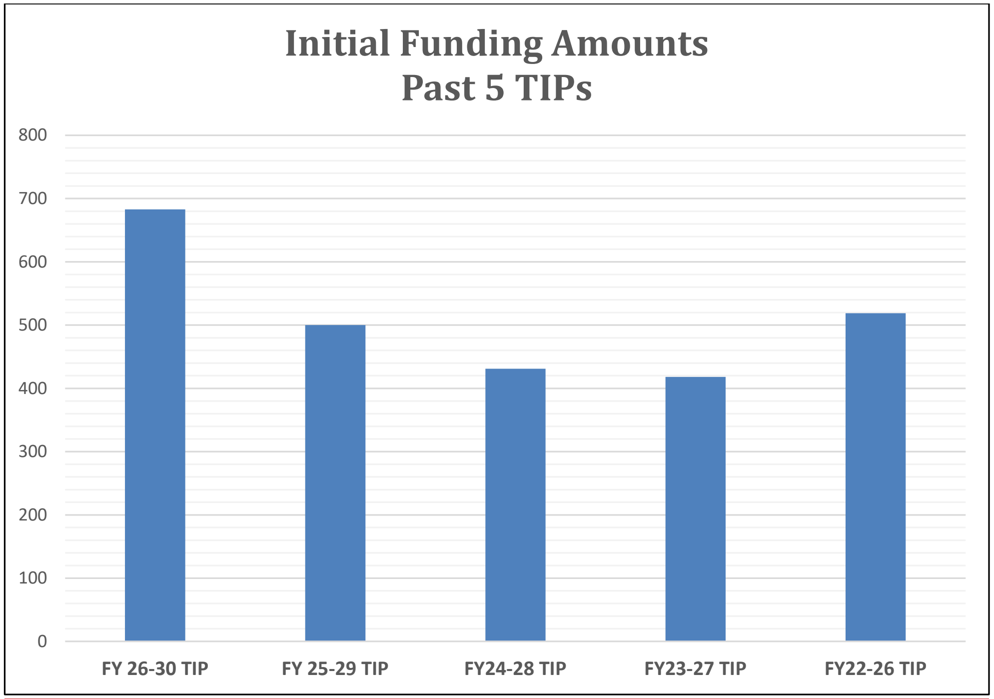
PROJECT PRIORITY AND PROJECT SELECTION PROCESSES

The method to select projects for inclusion in the TIP depends on whether the metropolitan area has a population of 200,000 or greater. Metropolitan areas with populations greater than 200,000 are called Transportation Management Areas (TMA). The Collier MPO is a TMA. In a TMA, the MPO selects many of the Title 23 and FTA funded projects for implementation in consultation with FDOT and local transit operators. Projects on the National Highway System (NHS) and projects funded under the bridge maintenance and interstate maintenance programs are selected by FDOT in cooperation with the MPO. Federal Lands Highway Program projects are selected by the respective federal agency in cooperation with FDOT and the MPO [23 C.F.R. 450.332(c)]. FDOT coordinates with the MPO to ensure that projects are also consistent with MPO priorities.

Federal and State transportation programs help the Collier MPO complete transportation projects. ~~which are divided into several categories including: Highway Capacity Enhancement, Safety, Bridge, Congestion Management, Bicycle and Pedestrian, FDOT Maintenance and Operations, Transportation Planning, Transit, Transportation Disadvantaged and Aviation.~~ Many of these projects require multiple phases which must be completed sequentially. Some phases may require multi-year efforts to complete, therefore it is often necessary to prioritize only one or two phases of a project within a TIP with the next phase(s) being included in subsequent TIPs. Project phases may include:

CAP	Capital
CST	Construction
DSB	Design Build
ENV	Environmental
INC	Contract Incentives
MNT	Maintenance
OPS	Operations

Figure 4: Total Initial Funding Amounts, Last 5 TIPs



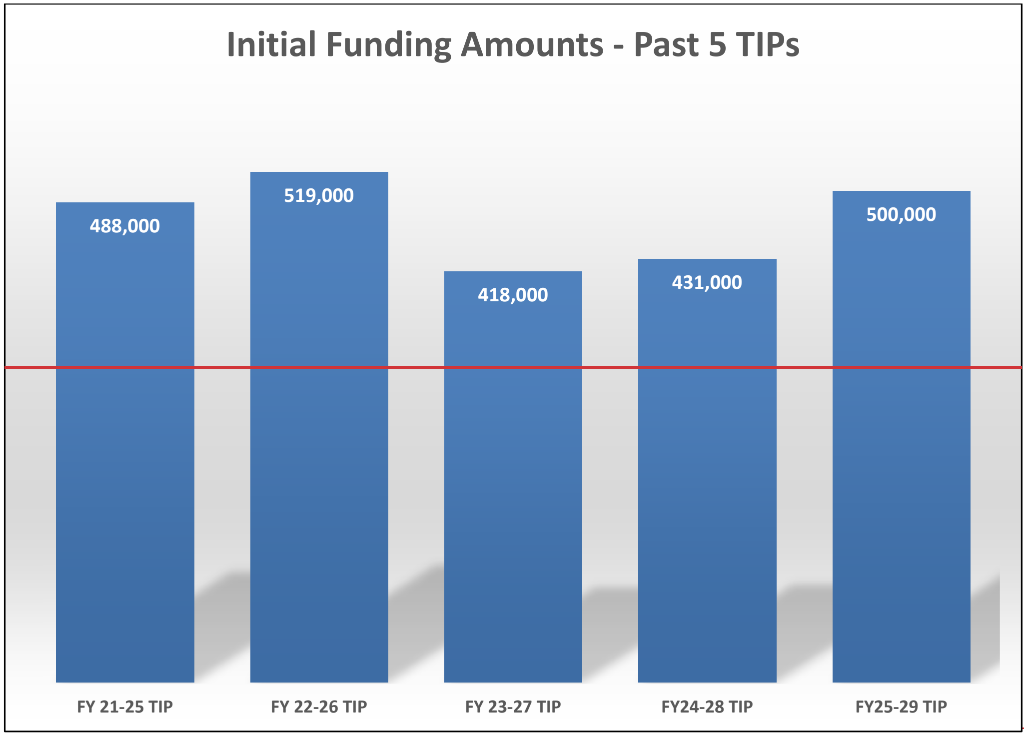
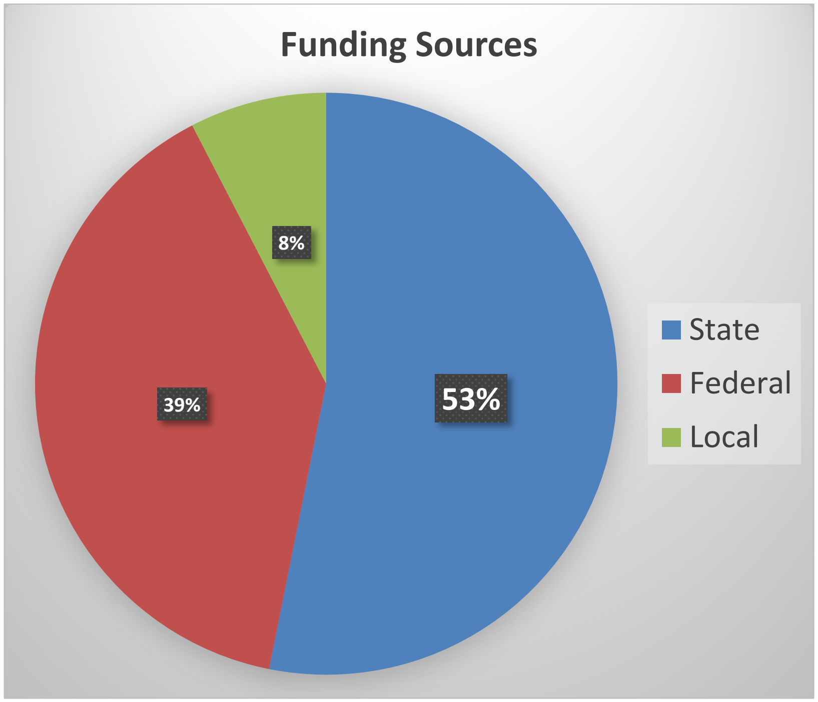


Figure 5: Funding Sources



Funding Sources
8%
39%
53%
State
Federal
Local

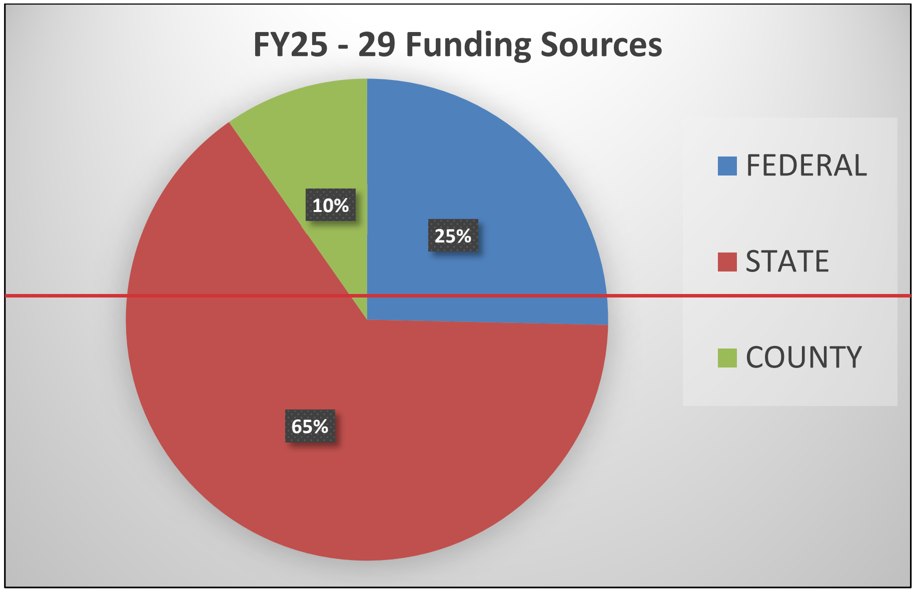
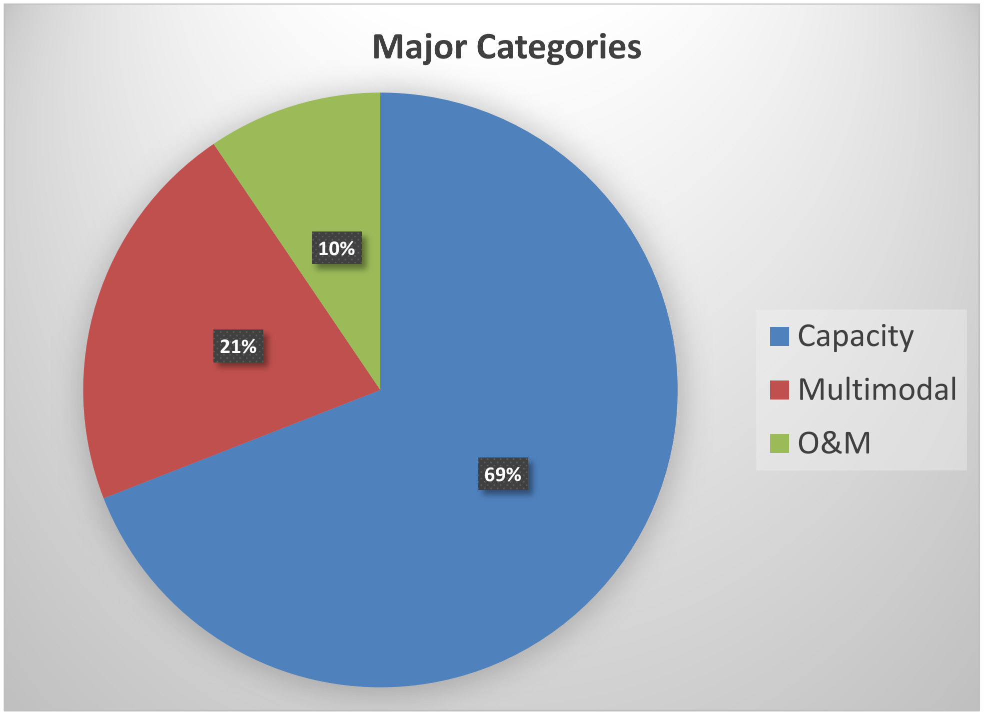
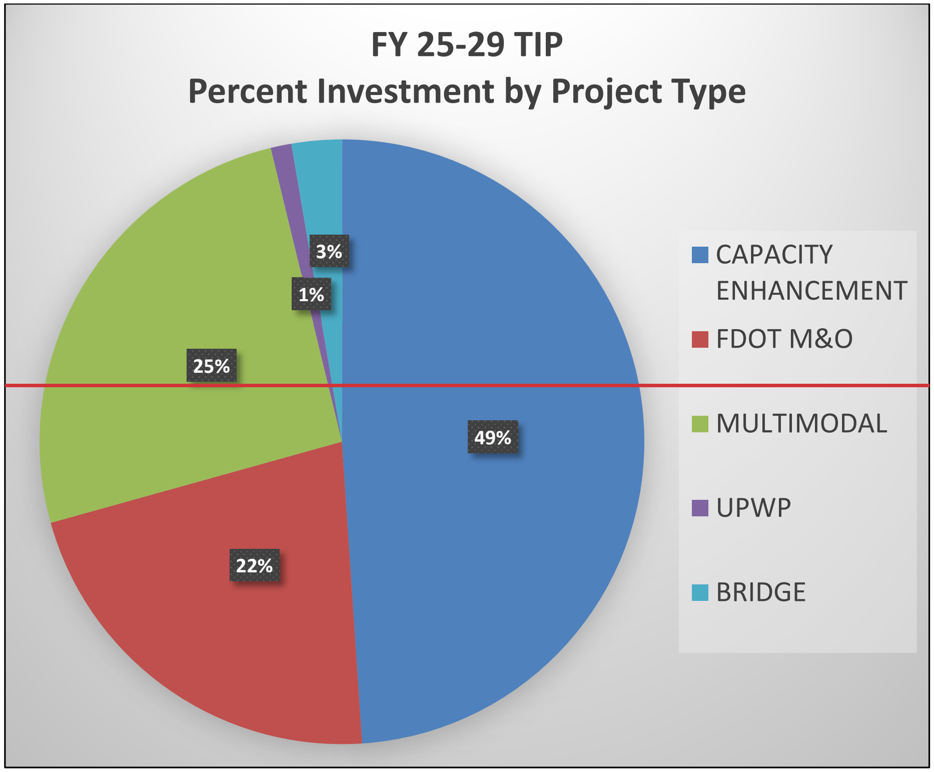

FY25 - 29 Funding Sources
10%
25%
65%
FEDERAL
STATE
COUNTY

Figure 6: Percent Funding by Major Category




FY 25-29 TIP
Percent Investment by Project Type
3%
1%
25%
49%
22%
CAPACITY ENHANCEMENT
FDOT M&O
MULTIMODAL
UPWP
BRIDGE

PDE	Project Development & Environment (PD&E)
PE	Preliminary Engineering
PLN	Planning
ROW	Right-of-Way
RRU	Railroad & Utilities

All projects in the TIP must be consistent with the Collier MPO 2045 Long Range Transportation Plan (LRTP) approved on December 11, 2020. Projects were included in the LRTP based on their potential to improve the safety and/or performance of a facility; increase capacity or relieve congestion; and preserve existing transportation investments. TIP projects are also consistent, to the extent feasible, with the Capital Improvement Programs and Comprehensive Plans of Collier County, the City of Naples, the City of Marco Island, and the City of Everglades as well as the Master Plans of the Collier County Airport Authority and the Naples Airport Authority. With minor exceptions, projects in the TIP must also be included in the FDOT Five-Year Work Program (WP) and the State Transportation Improvement Program (STIP).

The MPO's ~~2023~~ 2024 Transportation Project Priorities, for inclusion in the ~~FY2025~~ FY2026 – ~~FY2029~~ FY2030 TIP, were adopted by the MPO Board as a separate item from the adoption of the ~~FY2024~~ FY2025 - FY~~2028~~2029 TIP, on the same day of June ~~9~~14, ~~2023~~2024. The MPO and FDOT annually update the TIP, FDOT Work Program (WP) and STIP by adding a "new fifth year" which maintains rolling five-year programs. FDOT coordinates this process with the MPO to ensure that projects are consistent with MPO priorities. Each year, the MPO prioritizes projects derived from its adopted LRTP and based on the MPO's annual allocation of SU funds, State Transportation Trust Funds and other funding programs. The MPO's LOPP is formally reviewed by the Technical Advisory Committee (TAC), Citizens Advisory Committee (CAC), Bicycle and Pedestrian Advisory Committee (BPAC), and Congestion Management Committee (CMC), and is approved by the MPO Board before being transmitted to FDOT for funding consideration (see Appendix H for a description of the criteria used for project prioritization). The LOPP includes Highway, Bicycle/Pedestrian, Congestion Management, Safety, Bridge, Transit and Planning projects which are illustrated on the following pages. All projects funded through the FDOT Work Program are included in Part I of this TIP. Table 2 shows the general timeframe for the MPO's establishment of project priorities and the development of the ~~FY2025~~ FY2026 – ~~FY2029~~ FY2030 TIP.

Safety has always been an important part of the MPO's project prioritization process. Safety criteria are included in the prioritization process for bicycle and pedestrian, congestion management and bridge priorities. Highway and SIS priorities are generated by the Long Range Transportation Plan which emphasizes safety. As the MPO develops new lists of project priorities, the new federal performance measures will be incorporated into the criteria.

Table 2: General Timeframe for FY2025-2029 TIP Process

Mar ~~2022~~ 2023 - March ~~2023~~2024	MPO solicits candidate projects for potential funding in the new 5th year of FDOT's ~~FY2025~~ FY2026 - ~~FY2029~~ FY2030 Work Program, aka the MPO's FY ~~2025-2029~~2026-2030 TIP.
June ~~2023~~2024	MPO adopts prioritized list of projects for funding in the MPO FY ~~2025 – FY2029~~2026-2030 Work Program/TIP
~~Jan~~ Nov 2024 – April ~~2024~~2025	FDOT releases Tentative Five-year Work Program for FY ~~2025 - FY2029~~2026-2030
March – June ~~2024~~2025	MPO produces draft FY ~~2025 – 2029~~2026-2030 TIP; MPO Board and committees review draft TIP; MPO advisory committees endorse TIP
June ~~2024~~2025	MPO Board adopts FY ~~2025 – FY2029~~2026-2030 TIP which is derived from FDOT's Tentative Five-year Work Program. MPO adopts LOPP for funding in the ~~FY2026 - FY2030~~FY 2027-2031 TIP
July ~~2024~~2025	FDOT's Five-Year Work Program FY ~~2025 - FY2029~~2026-2030 (which includes the MPO TIP) is adopted and goes into effect. (The Statewide Transportation Improvement Program goes into effect October 1, ~~2024~~2025)
September ~~2024~~2025	MPO adopts TIP Amendment for inclusion of Roll Forward Report

~~2023~~ 2024 HIGHWAY (& FREIGHT) PRIORITIES

Highway priorities submitted in ~~2023~~ 2024 are consistent with the 2045 LRTP Cost Feasible Plan. The MPO Board approved the Highway priorities list on ~~June 10, 2022 and then readopted it on June 9, 2023~~ June 14, 2024 (Table 3 on the following two pages). These were forwarded to FDOT for consideration of future funding.

Table 3 Highway, Freight & Safety Priorities – updated per FY26-30 Draft Tentative Work Program

LRTP MAP ID	Facility	Limit From	Limit To	Final Proposed Improvement - 2045 LRTP	Total Project Cost (PDC)	Construction Time Frame	5-Year Window in which CST is Funded by Source				PROJECT STATUS FY26-30 Draft Tentative Work Program	
							2026-2030 PLAN PERIOD 2			Projects Funded in CFP		
							Phase	Source	YOE Cost	YOE	FPN	Amount
50	SR 29	N of New Market Rd	SR 82	Widen from 2 lanes to 4-lanes (with center turn lane)	$89,502,250	2026-30	CST	SIS	$30,360,000	$30,360,000	417540-6	$57,814,847
							ROW RUU ENV					$1,327,403
23	I-75 (SR93) Interchange	Golden Gate Pkwy		Interchange Improvement	$9,590,000	2026-30	PE	OA	$580,000	$12,820,000		
							CST	OA	$12,240,000			
25	I-75 (SR93) Interchange	Immokalee Rd		Interchange Improvement (DDI Proposed)	$9,590,000	2026-30	PE, ROW	OA	$580,000	$12,820,000	452544-4	$13,700,000
							DB	OA	$12,240,000			$57,328,977
57	US41 (SR90)(Tamiami Trail E)	Goodlette-Frank Rd		Major Intersection Improvement	$13,000,000	2026-30	PE	OA	$630,000	$17,010,000		
							ROW	OA	$2,970,000			
							CST	OA	$13,410,000			
58	US41 (SR90)(Tamiami Trail E)	Greenway Rd	6 L Farm Rd	Widen from 2-lane to 4-lanes	$31,880,000	2026-30	PE	OA	$ 3,910,000	$41,900,000	dropped from FDOT STIP	
							ROW	OA	$ 4,460,000			
							CST	OA	$ 33,530,000			
111	US41 (SR90) (Tamiami Trail)	Immokalee Rd		Intersection Innovation / Improvements	$17,500,000	2026-30	PE	OA	$ 3,130,000	$23,250,000		
							CST	OA	$ 20,120,000			
					$171,062,250							**$130,171,227**

Plan Period 3 & 4 Construction Funded Projects - Initiated in Plan Period 2							2026-2030			CFP	FPN	
MAP ID	Facility	Limit From	Limit To	Project Description	Total Project Cost (PDC)	CST Time Frame	Phase	Source	Funding Request	2026-2030 TOTAL	PROJECT STATUS	Amount
39	Old US41	US41	Lee/Collier County Line	Widen from 2 lanes to 4-lanes	$22,590,000	2031-2035	PE	~~OA~~	$3,850,000	$4,020,000	435110-2	3,001,000
							ROW	OA	$170,000			
59	US 41 (SR90) (Tamiami Trail)	Collier Blvd		Major Intersection Improvement	$17,250,000	2031-2035	PE	OA	$2,810,000	$2,810,000		
60	US41 (SR90)(Tamiami Trail)	Immokalee Rd	Old US 41	Complete Streets Study for TSM&O Improvements	$17,250,000	2031-2035	PE	OA	$460,000	$460,000		
22	I-75 (SR93) New Interchange	Vicinity of Everglades Blvd		New Interchange	$42,260,000	2036-2045	PE	OA	$3,760,000	$3,760,000		
C1	Connector Roadway from New I-75 Interchange	Golden Gate Blvd	Vanderbilt Beach Rd	4-lane Connector Roadway from New Interchange (Specific Location TBD during Interchange PD&E	$17,570,000	2036-2045	PE	OA	$440,000	$440,000		
C2	Connector Roadway from New I-75 Interchange	I-75 (SR93)	Golden Gate Blvd	4-lane Connector Roadway from New Interchange (Specific Location TBD during Interchange PD&E	$80,590,000	2036-2045	PE	OA	$2,000,000	$2,000,000		
				Subtotal	$197,510,000				$13,490,000			$3,001,000

HIGHWAYS - FREIGHT PRIORITIES							2026-2030			CFP		
MAP ID	Facility	Limit From	Limit To	Project Description	Total Project Cost (PDC)	CST Time Frame	Phase	Source	Funding Request	YOE	PROJECT STATUS	Amount
60	I-75	Immokalee	Interchange	Major Interchange Improvement (DDI)	$22,395,503		CST		$20,000,000		452544-4	$71,000,000
39	Old 41	US 41	Bonita Beach Rd (Lee County)	widen from 2-4 lanes with buffered bike lanes, SUP on west side and sidewalks on east side.	$186,100,000		PE		$20,000,000		435110-2	$3,001,000
				Subtotal	$208,495,503				$40,000,000			$74,001,000

HIGHWAYS - SAFETY							2026-2030			CFP		
	Facility	Limit From	Limit To	Project Description	Total Project Cost (PDC)	CST Time Frame	Phase	Source	Funding Request	YOE	PROJECT STATUS	Amount
	SR 29	Oil Well Rd	Intersection	Street Lighting	$1,000,000	FY25	DB	SU	$1,000,000			
				Subtotal	$1,000,000				$1,000,000			

~~2023~~ 2024 BRIDGE PRIORITIES

Bridge related priorities are consistent with the 2045 LRTP and the County's East of CR951 Bridge Reevaluation Study approved on May 25, 2021.The ~~2023~~ 2024 Bridge Priorities (Table 4) were approved by the MPO Board on June 9, 2023 and readopted on June 14, 2024, then ~~and~~ forwarded to FDOT for consideration of future funding.

	Location		
1	16th St NE,from Golden Gate Blvd to Randall Blvd	$16,400,000	FPN 451283-1 FY24-28 TIP $4.715m SU FY24
2	47th Avenue NE, from Everglades Blvd to Immokalee Rd	$20,112,000*	FY25-29 TIP: FPN 453421-1 $4.8mi SU FY29

*per 6/15/23 D1 Project Application

~~**Table 4: 2023 Bridge Priorities** *(2018 & 2019 priorities w/ cost estimates and funding status updated*)*~~

~~Rank~~	~~Location~~	~~Cost Estimate~~	~~Status~~
~~1~~	~~16th Street NE, from Golden Gate Blvd to Randall Blvd~~	~~$16,400,000~~	~~FPN 451283-1 FY 24-28 TIP $4.715 m SU FY 24; PD&E re-evaluation underway~~
~~2~~	~~47th Avenue NE, from Everglades Blvd to Immokalee Rd~~	~~$23,000,000~~	~~PD&E completed, re-evaluation anticipated~~

~~*The BCC approved the East of 951 Bridge Reevaluation Study on 5/25/21~~

~~2023~~ 2024 TRANSIT PRIORITIES

Florida State Statutes require each transit provider in Florida that receives State Transit Block Grant funding to prepare an annual Transit Development Plan (TDP). The TDP is a ten-year plan for Collier Area Transit (CAT) that provides a review of existing transportation services and a trend analysis of these services. The TDP is incorporated into the 2045 LRTP – Cost Feasible Plan. Table 5 on the following page shows the 2023 Transit Priorities approved by the MPO Board on June 10, 2022 and readopted on June 9, 2023 and June 14, 2024. These were submitted to FDOT for consideration of future funding.

Table 5: 2024~~3~~ Transit Priorities – adopted 6/10/22, 6/9/23 and 6/14/24

Improvement	Category	Ranking	Implementation Year	Annual Cost	3-Year Operating Cost	10-Year Operating Cost	Capital Cost	Funding Status
Maintenance and Operations Facility Replacement	**Transit Asset Management (TAM)**	1	2025	$ -	$ -	$ -	$7,900,000	$5,000,000
Administration/Passenger Station Roof Replacement	Transit Asset Management (TAM)	2	2022	$ -	$ -	$ -	$357,000	
Route 15 from 90 to 45 minutes	Increase Frequency	3	2023	$163,238	$489,715	$1,632,384	$503,771	
Route 11 from 30 to 20 minutes	Increase Frequency	4	2023	$652,954	$1,958,861	$6,529,536	$503,771	
Route 12 from 90 to 45 minutes	Increase Frequency	5	2023	$282,947	$848,840	$2,829,466	$503,771	
Route 16 from 90 to 45 minutes	Increase Frequency	6	2024	$156,105	$468,316	$1,561,054	$503,771	
Immokalee Transfer Facility (Building)	Transit Asset Management (TAM)	7	2025		$0		$585,000	
Fixed Route Bus - Replacement	Transit Asset Management (TAM)	8	2023	$ -	$ -	$ -	$520,000	
Route 14 from 60 to 30 minutes	Increase Frequency	9	2024	$243,915	$731,744	$2,439,146	$512,698	
Site SL-15 Creekside	Park and Ride	20	2024	$ -	$ -	$ -	$564,940	
Beach Lot Vanderbilt Beach Rd	Park and Ride	11	2024	$ -	$ -	$ -	$2,318,200	
Route 17/18 from 90 to 45 minutes	Increase Frequency	12	2024	$258,550	$775,649	$2,585,495	$503,771	
Route 13 from 40 to 30 minutes	Increase Frequency	13	2024	$83,712	$251,135	$837,115	$512,698	
New Island Trolley	New Service	14	2025	$551,082	$1,653,246	$5,510,821	$864,368	
Study: Mobility on Demand	Other Improvements	15	2025	$ -	$ -	$ -	$150,000	
Study: Fares	Other Improvements	16	2025	$ -	$ -	$ -	$150,000	
Support Vehicle - Replacement	Transit Asset Management (TAM)	17	2024	$ -	$ -	$ -	$30,000	
New Bayshore Shuttle	New Service	18	2026	$201,000	$602,999	$2,009,995	$531,029	
Support Vehicle - Replacement	Transit Asset Management (TAM)	19	2025	$ -	$ -	$ -	$30,000	
Radio Rd Transfer Station Lot	Park and Ride	20	2027	$ -	$ -	$ -	$479,961	
Beach Lot Pine Ridge Rd	Park and Ride	21	2027	$ -	$ -	$ -	$2,587,310	
Immokalee Rd - Split Route 27 creating EW Route	Route Network Modifications	22	2028	$189,885	$569,654	$1,898,846	$550,016	
Fixed Route Bus - Replacement	Transit Asset Management (TAM)	23	2027	$ -	$ -	$ -	$525,000	
Collier Blvd - Split Route 27 creating NS Route	Route Network Modifications	24	2028	$189,885	$569,654	$1,898,846	$550,016	
Fixed Route Bus - Replacement	Transit Asset Management (TAM)	25	2027	$ -	$ -	$ -	$525,000	
New Route 19/28 - Extend Hours to 10:00 PM	Service Expansion	26	2028	$29,288	$87,863	$292,876	$0	
Fixed Route Bus - Replacement	Transit Asset Management (TAM)	27	2027	$ -	$ -	$ -	$525,000	
Route 24 - Extend Hours to 10:00 PM	Service Expansion	28	2028	$30,298	$90,893	$302,976	$0	
Fixed Route Bus - Replacement	Transit Asset Management (TAM)	29	2027	$ -	$ -	$ -	$525,000	
Goodlette Frank Rd - Split Route 25 creating NS Route	Route Network Modifications	30	2028	$183,805	$551,416	$1,838,052	$550,016	
MOD – North Naples	New Service	31	2030	$81,723	$245,169	$817,230	$81,961	
New Autonomous Circulator	New Service	32	2030	$52,411	$157,232	$524,105	$569,681	
MOD – Marco Island	New Service	33	2030	$108,912	$326,736	$1,089,119	$81,961	
MOD – Golden Gate Estates	New Service	34	2030	$163,446	$490,338	$1,634,460	$81,961	
New Naples Pier Electric Shuttle	New Service	35	2030	$82,213	$246,638	$822,125	$569,681	
MOD – Naples	New Service	36	2030	$193,889	$581,666	$1,938,887	$81,961	

~~2023~~ 2024 CONGESTION MANAGEMENT PRIORITIES

Transportation Management Areas (urbanized areas with populations over 200,000) are required by 23 C.F.R. 450.322 to have a Congestion Management Process (CMP) that provides for the effective and systematic management and operation of new and existing facilities by using travel demand reductions and operational management strategies. CMP projects that are eligible for Federal and state funding include sidewalk/bicycle paths and/or facilities and congestion management projects that alleviate congestion, do not require the acquisition of right-of-way and demonstrate quantifiable performance measures.

The MPO allocates its SU funds[2] on a five-year rotating basis. ~~In 2021, congestion management received 100% of the SU funds, approximately $5 million.~~ The ~~2021~~ 2024 congestion management priorities are shown in Table ~~5~~ 6 (next page)~~, updated for 2023.~~ The projects are consistent with the 2022 Congestion Management Process, the 2020 Transportation System Performance Report and the 2045 LRTP. They were adopted by the MPO Board on June ~~11~~14, ~~2021~~2024.~~, readopted June 10, 2022, and again on June 9, 2023.~~

[2] Surface Transportation Funds for Urbanized Area – with population greater than 200,000. Allocation of funds is determined by a formula.

Table 6: ~~2023~~ 2024 Congestion Management Project Priorities – updated per Draft FY26-30 Work Program

Project Name	Submitting Agency	Description	Funding Request	CMC Ranking	Funding Status in Draft FY26-30 Work Program
ATMS and Controller Update	Collier County	ATMS and Controller Update	$1,622,000	1	
Fiber connections from US-41 to Mooring Line Drive & Crayton and Harbour & Crayton span-wire to mast arm intersection improvements	City of Naples	Fiber connections to intersections and upgrades from the existing span- wire assembly	$1,998,153	2	455927-1 Harbor Dr & Mooring Line Dr Between US41 & Crayton Rd - Traffic Signal Update $1,998,000 FY30, SU
ITS Retiming of Arterials	Collier County	ITS Retiming of Arterials	$633,000	3	
US41 from 3rd Ave to SR 84 Intersection / Mobility Improvements PD&E	City of Naples	Analyze cumulative effects of redevelopment projects on US41's functionality from a Complete Streets Perpective and address Bike - Ped Safety Concerns utilizing a Safe Systems approach.	$1,118,220	4	453415-1 US 41 from 3rd Ave to SR 84 Intersection/Mobility Improvements PD&E - PD&E/EMO Study $1,188,222 FY27, SU
		Grand Total	**$5,371,373**		

BICYCLE and PEDESTRIAN PRIORITIES

The priorities were derived from the 2019 Collier MPO Bicycle and Pedestrian Master Plan (BPMP), which is incorporated by reference into the 2045 LRTP. The BPMP continues the MPO's vision of providing a safe, connected and convenient on- road and off-road network throughout the Collier MPA to accommodate bicyclists and pedestrians as well as a similar goal of improving transportation efficiency and enhancing the health and fitness of the community while allowing for more transportation choices. ~~See~~ Table 7A below shows the 2023 Bike/Ped priorities, all of which are underway in various stages in the FY26-30 TIP. Table 7B on the following page shows the status of the Board's adopted SUN Trail priorities.

Table 7A: 2024 Bicycle and Pedestrian Priorities – status updated per Draft FY26-30 Work Program

2024 BICYCLE & PEDESTRIAN PROJECT PRIORITIES - adopted June 10, 2022, June 2023, & June 2024						**Status**
Rank	**Project Name**	**Submitting Agency**	**LAP**	**Funding Request**	**Updated CST Cost**	**FY26-30 Draft W.P.**
1	Immokalee Sidewalks (FPN 451542-1)	Collier County	County	$1,079,000	$1,081,000	CST FY30
2	Bayshore CRA Sidewalks (FPN 451543-1)	Collier County	County	$ 239,824	TBD	PE FY26, CST FY28
3	Naples Manor Sidewalks (FPN 448129-1)	Collier County	County	$1,100,000	$2,346,880	CST FY26
4	Golden Gate City Sidewalks (FPN 452065-1)	Collier County	County	$ 309,100	TBD	PE FY28, CST FY30
5	Everglades City Phase 4 Bike/Ped Improvements (FPN 452052-1)	Everglades City	FDOT	$ 563,380	TBD	PE FY28
6	Marco Island - Bald Eagle Dr Bike Lanes (FPN 452209-1)	Marco Island	Marco Is.	$ 802,475	$1,467,281	CST FY27
7	Naples Park Sidewalks - 106 Ave North (FPN 452208-1)	Collier County	County	$ 621,000	TBD	PE FY30
8	Naples Park Sidewalks - 108 Ave North (FPN 452211-1)	Collier County	County	$ 627,000	TBD	PE FY30
9	Naples Park Sidewalks - 109 Ave North (FPN 452210-1)	Collier County	County	$ 622,000	TBD	PE FY30
10	Vanderbilt Beach Rd Pathway (FPN 452207-1)	Collier County	County	$ 703,000	TBD	PE FY30
			Total	**$6,666,779**		

Table 7B 2024 Project Priorities for SUN Trail Funding

2025 Update PROJECT PRIORITIES for SUN TRAIL FUNDING from 2024					Funding Status
Rank	Project Name	Submitting Agency	PM	Funding Request	
1	Collier to Polk Regional Trail PD&E Study	Collier MPO	FDOT	$ 4,000,000	MPO Board adopted 2/9/24 & 6/14/24. PD&E Funded in FY24 Statewide FPN 453914-1 $20.3M
2	Bonita-Estero Rail Trail ROW Acquisition	Collier MPO	County	$ 7,800,000	MPO Board adopted 6/14/24; Included in SUN Trail application for ROW acquisition submitted by Lee County 2025, status pending
			Total	$ 11,800,000	

REGIONAL PRIORITIES – TRANSPORTATION REGIONAL INCENTIVE PROGRAM (TRIP)

In addition to local MPO priorities, the Collier MPO coordinates with the Lee County MPO to set regional priorities. The Lee County and Collier MPOs entered an Interlocal Agreement by which they set policies to prioritize regional projects. The Transportation Regional Incentive Program (TRIP). TRIP is a discretionary program that funds regional projects prioritized by the two MPOs. The TRIP priorities approved by the MPO Board on ~~June 9, 2023~~June 14, 2024, are shown in Table ~~8~~ 9 on the following page.

Table 8~~8~~: 2024~~3~~ Regional Priorities – Joint List for Lee and Collier Counties

Joint TRIP Priorities for Lee and Collier for 2024

Sponsor	Route	From	To	Proposed Improvement	Requested Phase	Total Cost	Requested TRIP Funds	STATUS	State Funding Level	Fiscal Year
2023/2024										
Collier County	Collier Blvd	Golden Gate Main Canal	Golden Gate Pkwy	4L to 6L	Des/Build	$38,664,000	$5,000,000			
Collier County	Vanderbilt Beach Rd	US 41	E. of Goodlette	4L to 6L	CST	$8,428,875	$4,214,438	**Funded**	$4,214,438	FY 24/25
Collier County	Veterans Memorial Boulevard	High School Entrance	US 41	New 4L/6L	CST	$14,800,000	$6,000,000			
2024/2025										
Collier County	Vanderbilt Beach Rd	16th Street	Everglades Blvd	New 2L	CST	$19,050,000	$4,125,000			
Lee County	Three Oaks Ext. Phase II	Pony Drive	Daniels Parkway	New 4L/8L CR 876	CST	$131,200,000	$7,500,000			
Collier County	Santa Barbara/Logan Blvd.	Painted Leaf Lane	Pine Ridge Road	Operational Imp.	CST	$8,000,000	$4,000,000			
Lee County	Alico Extension - Phase I	Airport Haul Rd	E. of Alico Road	New 4L	CST	$54,159,583	$6,000,000			
Collier County	Goodlette Road	Vanderbilt Beach Road	Immokalee Road	2L to 4L	CST	$5,500,000	$2,750,000	**Funded**	$2,750,000	FY 23/24
2025/2026										
Lee County	Burnt Store Rd	Van Buren Pkwy.	1,000' N.of Charlotte Co/L.	2L to 4L	ROW	$33,500,000	$4,000,000			
2026/2027										
Lee County	Alico Extension – Phase II & III	E. of Alico Road	SR 82	New 4L	CST	$441,974,282	$10,000,000			
2027/2028										
Collier County	Oil Well Road	Everglades	Oil Well Grade Rd.	2L to 6L	CST	$54,000,000	$6,000,000			
Collier County	Immokalee Road - Shoulder Project	Logan Blvd	Livingston Rd	Shoulders	CST	$15,000,000	$4,000,000	**Funded**	$985,275	FY24?
Collier County	Immokalee Road	At Livingston Road		Major Intersect.	PE	$4,500,000	$1,000,000	**Funded**	$2,500,000	FY24
Collier County	Randall Blvd	Everglades	8th	2L to 6L	PE	$5,760,000	$2,880,000	**Funded**	$2,880,000	FY25
2028/2029										
Lee County	Sunshine Extension	75th Street West	SR 80	New 4L	PD&E	$6,283,770	$3,100,000			
Collier County	Immokalee Road	At Livingston Road		Major Intersect.	CST	$38,000,000	$10,000,000			
2029/2030										
Collier County	Golden Gate Pkwy	At/Livingston Rd		Major Intersect.	PE	$6,000,000	$3,000,000			
Lee County	Ortiz Avenue	SR 82	Luckett Road	2L to 4L	CST	$52,457,000	$8,000,000			

2023/2024										
Collier County	Collier Blvd	Golden Gate Main Canal	Golden Gate Pkwy	4L to 6L	Des/Build	$38,664,000	$5,000,000			
Collier County	Vanderbilt Beach Rd	US 41	E. of Goodlette	4L to 6L	CST	$8,428,875	$4,214,438	**Funded**	$4,214,438	FY 24/25
Collier County	Veterans Memorial Boulevard	High School Entrance	US 41	New 4L/6L	CST	$14,800,000	$6,000,000			
2024/2025										
Collier County	Vanderbilt Beach Rd	16th Street	Everglades Blvd	New 2L	CST	$19,050,000	$4,125,000			
Lee County	Three Oaks Ext. Phase II	Pony Drive	Daniels Parkway	New 4L/8L CR 876	CST	$131,200,000	$7,500,000			
Collier County	Santa Barbara/Logan Blvd.	Painted Leaf Lane	Pine Ridge Road	Operational Imp.	CST	$8,000,000	$4,000,000			
Lee County	Alico Extension – Phase I	Airport Haul Rd	E. of Alico Road	New 4L	CST	$54,159,583	$6,000,000			
Collier County	Goodlette Road	Vanderbilt Beach Road	Immokalee Road	2L to 4L	CST	$5,500,000	$2,750,000	**Funded**	$2,750,000	FY 23/24
2025/2026										
Lee County	Burnt Store Rd	Van Buren Pkwy.	1,000' N.of Charlotte Co/L.	2L to 4L	ROW	$33,500,000	$4,000,000			
2026/2027										
Lee County	Alico Extension – Phase II & III	E. of Alico Road	SR 82	New 4L	CST	$441,974,282	$10,000,000			
2027/2028										
Collier County	Oil Well Road	Everglades	Oil Well Grade Rd.	2L to 6L	CST	$54,000,000	$6,000,000			
Collier County	Immokalee Road – Shoulder Project	Logan Blvd	Livingston Rd	Shoulders	CST	$15,000,000	$4,000,000	**Funded**	$985,275	FY24?
Collier County	Immokalee Road	At Livingston Road		Major Intersect.	PE	$4,500,000	$1,000,000	**Funded**	$2,500,000	FY24
Collier County	Randall Blvd	Everglades	8th	2L to 6L	PE	$5,760,000	$2,880,000	**Funded**	$2,880,000	FY25
2028/2029										
Lee County	Sunshine Extension	75th Street West	SR 80	New 4L	PD&E	$6,283,770	$3,100,000			

PLANNING PRIORITIES

The MPO prioritizes the use of SU funds to supplement the MPO's PL (planning) funds to prepare the Long Range Transportation Plan update every five years and the plans that feed into the LRTP. These include the Local Roads Safety Plan, Transportation System Performance Report, Congestion Management Process, Bicycle and Pedestrian Master Plan and Transit Development Plan shown in Table 9 below.

Table 9: 2024~~3~~ Planning ~~Study~~ Priorities ~~– SU BOX FUNDS~~ – Adopted June 14, 2024 – updated per FY26-30 Draft Work Program

MPO Board adopted on 6-14-24.

Priority	Fiscal Year	SU Request	Project Cost	Plan or Study	Status FY26-30 Draft W.P.
1	2025	$379,416	$379,416	2050 LRTP	$379,416
	2026	$350,000	$350,000	2050 LRTP, CMP	$350,000
1	2027	$350,000	$350,000	CMP, BPMP, TDP, 2055 LRTP	$350,000
	2028	$350,000	$350,000		$350,000
	2029	$450,000	$450,000		$450,000
	2030	$450,000	$450,000		$450,000
		TOTAL	**$2,329,416**		**$2,329,416**

Note: The Congestion Management Process (CMP), Bicycle/Pedestrian Master Plan (BPMP), and Transit Development Plan (TDP) support the development of the LRTP and are incorporated by reference in the LRTP.

2023 Planning Study Priorities - SU BOX FUNDS

adopted 6-10-22, readopted 6-9-23

Priority	Fiscal Year	Project Cost	Plan or Study	Status FY24-28 TIP
1	2028	$ 350,000	2055 LRTP, LRSP, TSPR, CMP, BPMP, TDP	
2	2029	$ 350,000	2055 LRTP, LRSP, TSPR, CMP, BPMP, TDP	
3	2030	$ 350,000	2055 LRTP, LRSP, TSPR, CMP, BPMP, TDP	
	TOTAL	$ 1,050,000		

2021 Planning Study Priorities - SU Box Funds adopted June 2021

Priority	Fiscal Year	Project Cost	Plan or Study	Status FY24-28 TIP
	2022	$ 300,000		$350,000, FY24
1	2023	$ 300,000	2050 LRTP	$350,000, FY25
	2024	$ 300,000		$350,000, FY26
	TOTAL	$ 900,000		$ 1,050,000

Major Projects Implemented or Delayed from the Previous TIP (~~FY2024 – FY2028~~FY2026-2030)

23 CFR §450.326(n)(2) requires MPOs to list major projects from the previous TIP that were implemented and to identify any significant delays in the planned implementation of major projects. ***Major Projects* are defined as *multi-laning or a new facility type capacity improvement*.**

Major Projects - Phases Implemented/Completed/Advanced

- 417540-5 SR 29 from CR 846 E to N of New Market Road W, new road construction with freight priority; increased funding for ROW and advanced to construction phase in FY27 as part of the *Moving Florida Forward Infrastructure Initiative (*MFF*).*
- 445296-1 I-75 at Pine Ridge Interchange Improvement, additional construction funds provided in FY25 by MFF.

Major Projects - Phases Significantly Delayed, Reason for Delay and Revised Schedule

- 435111-2 SR 951 from Manatee Rd to N of Tower Rd, add lanes and resurface, bike-ped improvements, CST ~~FY29~~deferred out beyond FY30
- ~~N/A~~

Major Projects in the ~~FY2025 – FY2029~~FY2026-2030 TIP

Multi-Laning or New Facility Capacity Improvement Projects

- 452544-3 I-75 from Immokalee to Bonita Beach, add lanes, Design/Build FY26-28
- 452544-4 Immokalee Interchange, DDI, Design/Build FY 26-30
- 452544-5 I-75 from Immokalee to Pine Ridge, add lanes, Design/Build FY 26-30
- 452544-6 I-75 from Pine Ridge to Golden Gate, add lanes, Design/Build FY26-30
- 417540-5 SR 29 from N CR 845 E to N of New Market Road, widen from 3 to 4 lanes, ROW, RRU, ENV FY26, CST FY 27
- 417540-6 SR 29 from N of New Market to SR 82, widen from 2 to 4 lanes with freight priority; ROW, RRU, ENV ~~PE~~ FY26, CST FY 27.
- ~~417878-4 SR 29 from SR 82 to Hendry C/L widen from 2-4 lanes, ENV FY25~~
- ~~430848-1 SR 82 from Hendry C/L to Gator Slough Lane widen from 2-4 lanes, PE FY28~~

- 435110-2 Old US 41 from US 41 to Lee/Collier C/L, widen 2-4 lanes, bike-ped improvements, PE FY28
- ~~435111-2 SR 951 from Manatee Rd to N of Tower Rd, add lanes and resurface, bike-ped improvements, CST FY29~~
- 446341-1 Goodlette Frank Rd from Vanderbilt Rd to Immokalee Rd, add lanes & reconstruct; CST FY27.
- 440441-1 Airport Pulling Rd from Vanderbilt Beach Rd to Immokalee Rd, CST ~~FY25~~FY26
- 446451-1 SR 45 (US 41) at CR 886 (Golden Gate Pkwy), intersection improvement, CST ~~FY26~~FY27
- ~~452247-1 Immokalee Rd from Livingston Rd to Logan Blvd, paved shoulders (accommodate turn lanes), CST FY 28~~
- ~~453785-1 Oil Well Rd from Everglades Blvd to Oil Well Grade Rd, widen and resurface, PE FY 25~~

PUBLIC INVOLVEMENT

The MPO's Public Participation Plan (PPP) follows Federal regulations for TIP related public involvement [23 C.F.R. 450.326(b)] and [23 U.S.C. 134 (i)(6) and (7) providing adequate public notice of public participation activities and time for public review and comment at key decision points. During the time period that the FDOT Work Program and MPO TIP for FY 2025-2029 were out for public comment, the MPO held in-person advisory committee meetings. MPO Board meetings were conducted as hybrid remote/in-person.

The TIP and all amendments to the TIP are presented at multiple meetings of the Technical Advisory Committee (TAC), Citizens Advisory Committee (CAC) and MPO Board; the public may attend and comment at all MPO meetings. The MPO also conducts outreach by way of its monthly eNewsletter, website postings and email distribution lists. Public comments on the ~~FY2025~~ 2026 – ~~FY2029~~ FY2030 TIP may be found in Appendix F.

TIP AMENDMENTS

Occasionally amendments need to be made to the TIP. There are three types of amendments. The first type, **Administrative Modification**, is used for minor cost changes in a project/project phase, minor changes to funding sources, minor changes to the initiation of any project phase, and correction of scrivener errors. Administrative Modifications do not need MPO Board approval and may be authorized by the MPO's Executive Director.

The second type of amendment – a **Roll Forward Amendment** – is used to add projects to the TIP that were not added prior to June 30th but were added to the FDOT Work Program between July 1st and September 30th. Roll Forward

Amendments are regularly needed largely due to the different state and federal fiscal years. Many of the projects that get rolled forward are FTA projects because these projects do not automatically roll forward in the TIP. Roll Forward Amendments do not have any fiscal impact on the TIP.

A **TIP Amendment** is the third and most substantive type of amendment. These amendments are required when a project is added or deleted (excluding those projects added between July 1st and September 30th), a project impacts the fiscal constraint of the TIP, project phase initiation dates, or if there is a substantive change in the scope of a project. TIP Amendments require MPO Board approval, are posted on the MPO website along with comment forms and distributed to listserv(s) via email. The Collier MPO's PPP defines the process to be followed for TIP amendments.

CERTIFICATION

The entire MPO process, including the TIP, must be certified by FDOT on an annual basis. The ~~2023~~ 2024 MPO process was certified by FDOT and the MPO Board on March 18, 2025~~April .12, 2024~~. In addition, every four years the MPO must also be certified by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). The MPO's transportation planning process was jointly certified by FHWA and FTA on December 30, 2024. ~~January 14, 2021~~. The next FHWA / FTA joint certification site visit will occur in 2028. ~~is scheduled for July 23 & 24, 2024.~~

PROJECT ORGANIZATION

Projects are listed in ten different categories. Within each category projects are listed in numerical order using the **FPN** (**Financial Project Number**) which is in the upper left corner of each project page. Several of the roads are listed by their county or state road designation. The table below lists these designations along with the commonly used name.

Common Name	Name in TIP
Vanderbilt Drive	CR 901
Vanderbilt Beach Road	CR 862
San Marco Road	CR 92
US 41/Tamiami Trail	SR 90 SR 45
Collier Boulevard	SR 951

Template to Address Performance Management Requirements in Metropolitan Planning Organization Transportation Improvement Programs

Office of Policy Planning Florida Department of Transportation

February 2023 Template

COLLIER MPO FY 2026-2030 TIP

TABLE OF CONTENTS

1 - PURPOSE

This document provides language that Florida's metropolitan planning organizations (MPO) may incorporate in Transportation Improvement Programs (TIP) to meet the federal transportation performance management rules.

MPOs may adapt this template language as needed as they update their TIPs. In most sections, there are two options for the text, to be used by MPOs supporting statewide targets or MPOs establishing their own targets. Areas that require MPO input are shown in **BOLD**. This can range from simply adding the MPO name and adoption dates to providing MPO-specific background information and relevant strategies and prioritization processes.

The document is consistent with the Transportation Performance Measures (TPM) Consensus Planning Document developed jointly by the Florida Department of Transportation (FDOT) and the Metropolitan Planning Organization Advisory Council (MPOAC). The Consensus Planning Document outlines the minimum roles of FDOT, the MPOs, and the public transportation providers in the MPO planning areas to ensure consistency to the maximum extent practicable in satisfying the federal transportation performance management requirements.

The document is organized as follows:

- Section 2 provides a brief background on transportation performance management;
- Section 3 covers the Highway Safety measures (PM1);
- Section 4 covers the Bridge and Pavement Condition measures (PM2);
- Section 5 covers System Performance and Freight Movement measures (PM3);
- Section 6 covers Transit Asset Management (TAM) measures; and
- Section 7 covers Transit Safety measures.

2 - BACKGROUND

Transportation Performance Management (TPM) is a strategic approach to connect transportation investment and policy decisions to help achieve performance goals. Performance measures are quantitative expressions used to evaluate progress toward goals. Performance targets are quantifiable levels of performance to be achieved within a time period. Federal transportation law requires state departments of transportation (DOT), MPOs, and public transportation providers to conduct performance-based planning by tracking performance and establishing data-driven targets to assess progress toward achieving goals. Performance-based planning supports the efficient investment of transportation funds by increasing accountability, providing transparency, and linking investment decisions to key outcomes related to seven national goals established by Congress:

- Improving safety;
- Maintaining infrastructure condition;
- Reducing traffic congestion;
- Improving the efficiency of the system and freight movement;
- Protecting the environment; and
- Reducing delays in project delivery.

Federal law requires FDOT, the MPOs, and public transportation providers to coordinate when selecting performance targets. FDOT and the MPOAC developed the TPM Consensus Planning Document to describe the processes through which these agencies will cooperatively develop and share information related to transportation performance management and target setting.

3 - HIGHWAY SAFETY MEASURES (PM1)

The first of FHWA's performance management rules establishes measures to assess fatalities and serious injuries on all public roads. The rule requires state DOTs and MPOs to annually establish targets and report performance and progress toward targets to FHWA for the following safety-related performance measures:

1. Number of Fatalities;
2. Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT);
3. Number of Serious Injuries;
4. Rate of Serious Injuries per 100 million VMT; and
5. Number of Nonmotorized Fatalities and Serious Injuries.

3.1 Highway Safety Targets

3.1.1 Statewide Targets

Safety performance measure targets are required to be adopted on an annual basis. In August of each calendar year, FDOT reports targets to FHWA for the following calendar year. On August 31, 2022, FDOT established statewide safety performance targets for calendar year 2023. Table 3.1 presents FDOT's statewide targets.

Table 3.1. Statewide Highway Safety Performance Targets

Performance Measure	Calendar Year 2024 Statewide Target
Number of fatalities	0
Rate of fatalities per 100 million vehicle miles traveled (VMT)	0
Number of serious injuries	0

Rate of serious injures per 100 million vehicle miles traveled (VMT)	0
Number of non-motorized fatalities and serious injuries	0

FDOT adopted a vision of zero traffic-related fatalities in 2012. This, in effect, became FDOT's target for zero traffic fatalities and quantified the policy set by Florida's Legislature more than 35 years ago (Section 334.046(2), Florida Statutes, emphasis added):

*"The mission of the Department of Transportation shall be to provide a **safe** statewide transportation system…"*

FDOT and Florida's traffic safety partners are committed to eliminating fatalities and serious injuries. As stated in the Safe System approach promoted by the FHWA, the death or serious injury of any person is unacceptable. The Florida Transportation Plan (FTP), the state's long-range transportation plan, identifies eliminating transportation-related fatalities and serious injuries as the state's highest transportation priority. Therefore, FDOT established 0 as the only acceptable target for all five federal safety performance measures.

3.1.2 MPO Safety Targets

MPOs are required to establish safety targets annually within 180 days of when FDOT established targets. MPOs establish targets by either agreeing to program projects that will support the statewide targets or establish their own quantitative targets for the MPO planning area.

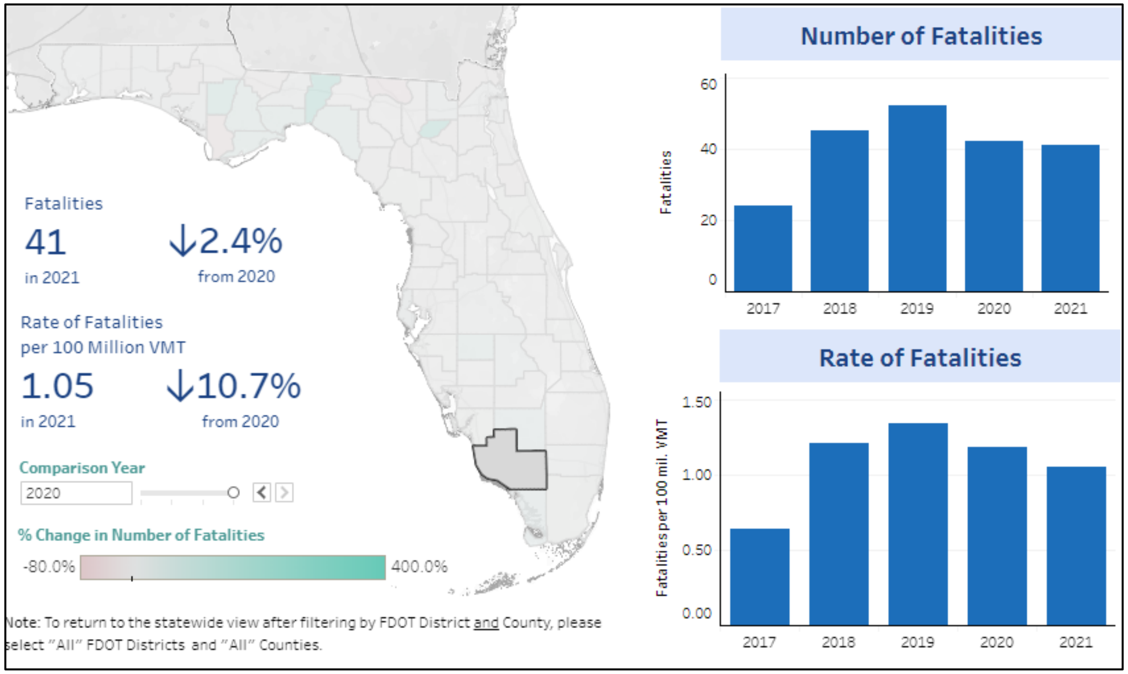
The **Collier MPO**, along with FDOT and other traffic safety partners, shares a high concern about the unacceptable number of traffic fatalities, both statewide and nationally. As such, on **February 14, 2024**, the **Collier MPO** agreed to support FDOT's statewide safety performance targets for calendar year 2023, thus agreeing to plan and program projects in the TIP that once implemented, are anticipated to make progress toward achieving the statewide targets. The safety initiatives within this TIP are intended to contribute toward achieving these targets.

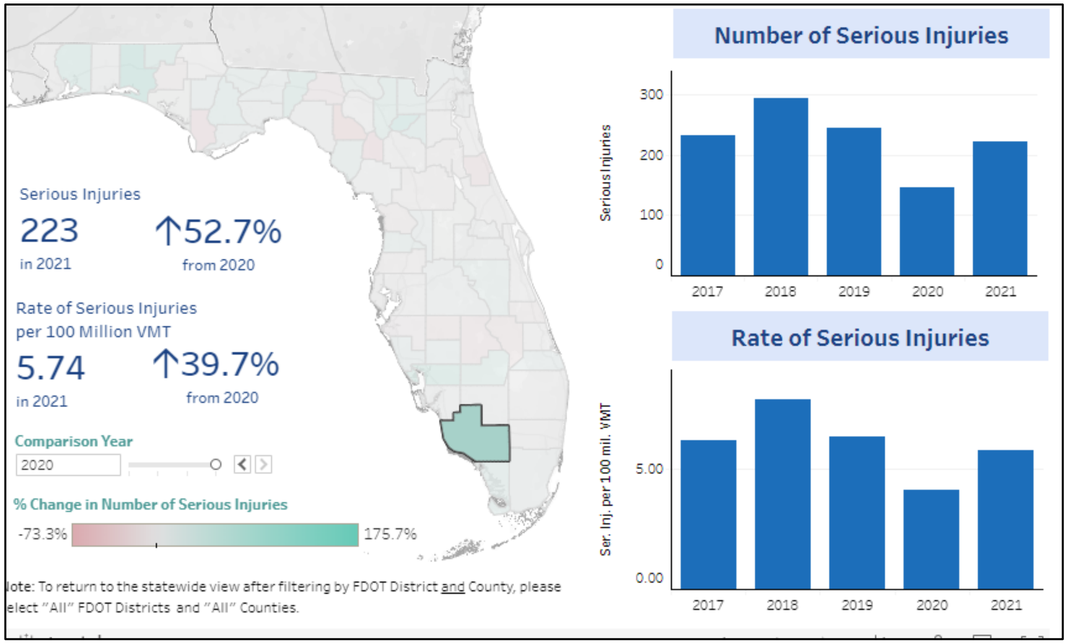
Table 3.2. MPO Safety Performance Targets

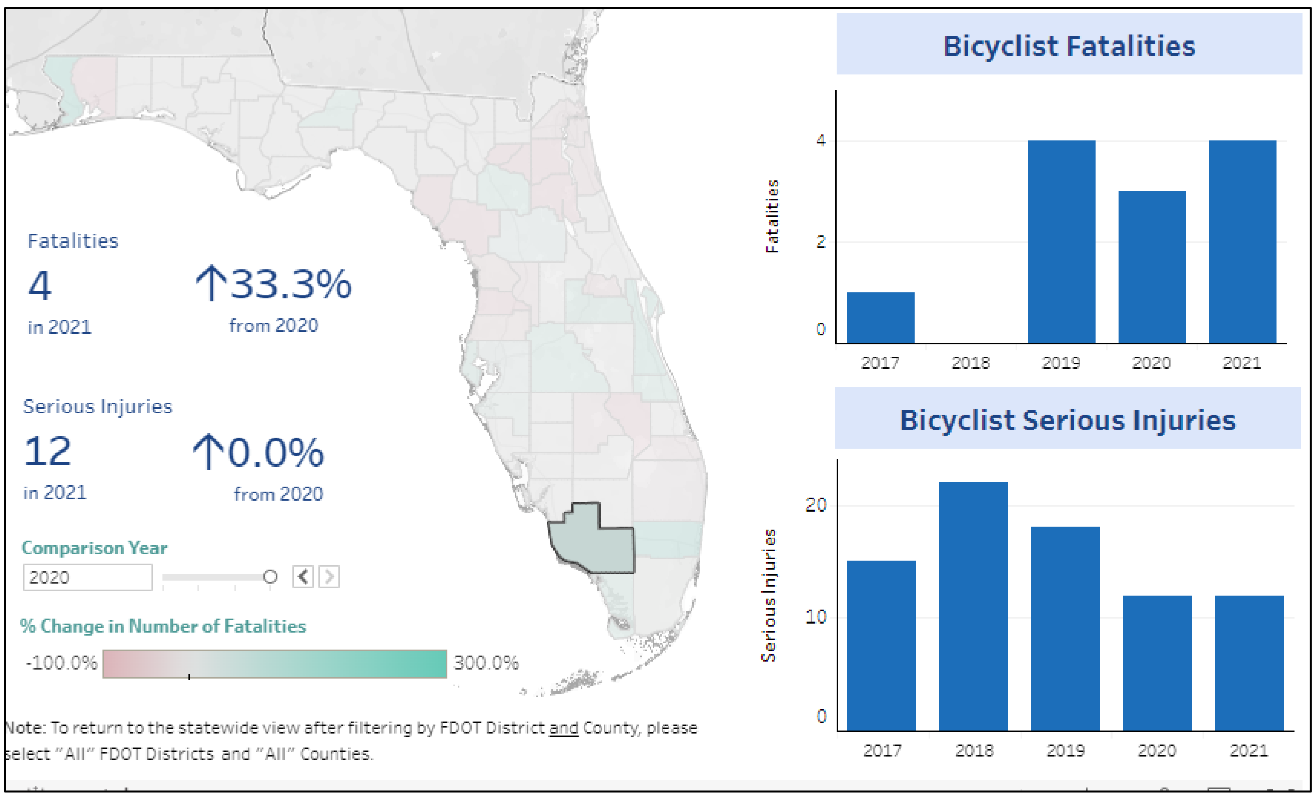
Performance Measure	Calendar Year 2023 MPO Target
Number of fatalities	0
Rate of fatalities per 100 million vehicle miles traveled (VMT)	0
Number of serious Injuries	0
Rate of serious injures per 100 million vehicle miles traveled (VMT)	0
Number of non-motorized fatalities and serious injuries	0

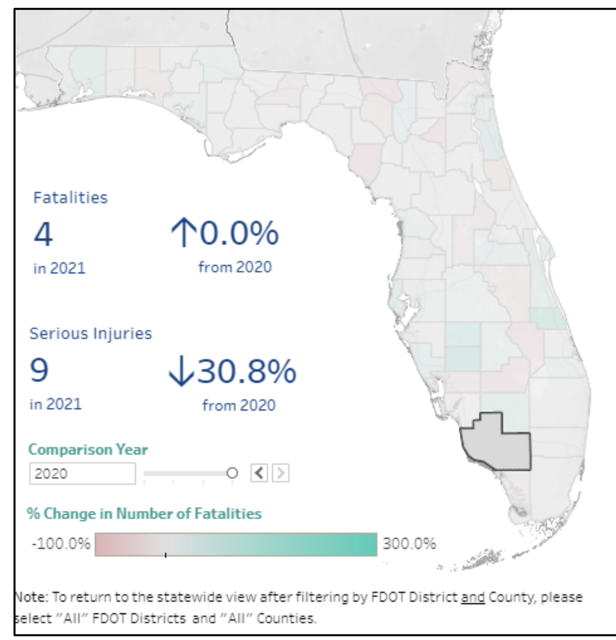
3.2 Safety Trends in the MPO Area

Collier MPO monitors the traffic safety data received from FDOT. Trends are reported in the TIP, the MPO's Annual Report and at the time the MPO Board adopts FDOT's Vision Zero targets for the upcoming calendar year. Here are the tables published in the 2024 Annual Report:




Number of Serious Injuries
Serious Injuries
300
200
100
0
2017
2018
2019
2020
2021
Rate of Serious Injuries
Ser. Inj. per 100 mil. VMT
5.00
0.00
Serious Injuries
223
in 2021
↑52.7%
from 2020
Rate of Serious Injuries per 100 Million VMT
5.74
in 2021
↑39.7%
from 2020
Comparison Year
2020
% Change in Number of Serious Injuries
-73.3%
175.7%
Note: To return to the statewide view after filtering by FDOT District and County, please select "All" FDOT Districts and "All" Counties.


Bicyclist Fatalities
Fatalities
4
2
0
2017
2018
2019
2020
2021
Bicyclist Serious Injuries
Serious Injuries
20
10
0
Fatalities
4
in 2021
↑33.3%
from 2020
Serious Injuries
12
in 2021
↑0.0%
from 2020
Comparison Year
2020
% Change in Number of Fatalities
-100.0%
300.0%
Note: To return to the statewide view after filtering by FDOT District and County, please select "All" FDOT Districts and "All" Counties.


Fatalities
4
in 2021
↑0.0%
from 2020
Serious Injuries
9
in 2021
↓30.8%
from 2020
Comparison Year
2020
% Change in Number of Fatalities
-100.0%
300.0%
Note: To return to the statewide view after filtering by FDOT District and County, please select "All" FDOT Districts and "All" Counties.

3.3 FDOT Safety Planning and Programming

3.3.1 Florida's Strategic Highway Safety Plan

Florida's Strategic Highway Safety Plan (SHSP), published in March 2021, identifies strategies to achieve zero traffic deaths and serious injuries. The SHSP was updated in coordination with Florida's 27 MPOs and the MPOAC, as well as other statewide traffic safety partners. The SHSP development process included review of safety-related goals, objectives, and strategies in MPO plans. The SHSP guides FDOT, MPOs, and other safety partners in addressing safety and defines a framework for implementation activities to be carried out throughout the state.

Florida's transportation safety partners have focused on reducing fatalities and serious injuries through the 4Es of engineering, education, enforcement, and emergency response. To achieve zero, FDOT and other safety partners will expand beyond addressing specific hazards and influencing individual behavior to reshaping transportation systems and communities to create a safer environment for all travel. The updated SHSP calls on Florida to think more broadly and inclusively by addressing four additional topics, which are referred to as the 4Is: information intelligence, innovation, insight into communities, and investments and policies. The SHSP also embraces an integrated "Safe System" approach that involves designing and managing road infrastructure to keep the risk of a mistake low and to ensure that when a mistake leads to a crash, the impact on the human body does not result in a fatality or serious injury. The five Safe System elements together create a holistic approach with layers of protection: safe road users, safe vehicles, safe speeds, safe roads, and post-crash care.

The SHSP also expands the list of emphasis areas for Florida's safety programs to include six evolving emphasis areas, which are high-risk or high-impact crashes that are a subset of an existing emphasis area or emerging risks and new innovations, where safety implications are unknown. These evolving emphasis areas include work zones, drowsy and ill driving, rail grade crossings, roadway transit, micromobility, and connected and automated vehicles.

3.3.2 Florida's Highway Safety Improvement Program

While the FTP and the SHSP both highlight the statewide commitment to a vision of zero deaths, the Florida Highway Safety Improvement Program (HSIP) Annual Report documents statewide performance and progress toward that vision. It also lists all HSIP projects that were obligated during the reporting year and the relationship of each project to the SHSP.

As discussed above, in the 2022 HSIP Annual Report, FDOT reported 2023 statewide safety performance targets at "0" for each safety performance measure to reflect the vision of zero deaths. Annually, FHWA determines whether Florida has met the targets or performed better than baseline for at least four of the five measures. If this does not occur FDOT must submit an annual implementation plan with actions, it will take to meet targets in the future.

On April 21, 2022, FHWA reported the results of its 2020 safety target assessment. FHWA concluded that Florida had not met or made significant progress toward its 2020 safety targets, noting that zero had not been achieved for any measure and that only three out of five measures (number of serious injuries, serious injury rate, and number of non-motorized fatalities and serious injuries) were better than baseline. Subsequently, FDOT developed an HSIP Implementation Plan to highlight additional strategies it will undertake in support of the safety targets. This plan was submitted with the HSIP Annual Report to FWHA in August, 2023 and is available at www.fdot.gov. Consistent with FHWA requirements, the HSIP Implementation Plan focuses specifically on implementation of the HSIP as a core federal-aid highway program and documents the continued enhancements planned for Florida's HSIP to better leverage the benefits of this program. However, recognizing that FDOT already allocates all HSIP funding to safety programs - and building on the integrated approach that underscores FDOT's safety programs – the HSIP Implementation Plan also documents how additional FDOT, and partner activities may contribute to progress toward zero. Building on the foundation of prior HSIP Implementation Plans, the 2023 HSIP Implementation Plan identifies the following key commitments:

- Improve partner coordination and align safety activities.
- Maximize HSIP infrastructure investments.
- Enhance safety data systems and analysis.
- Focus on safety marketing and education on target audiences.
- Capitalize on new and existing funding opportunities.
- Florida conducts extensive safety data analysis to understand the state's traffic safety challenges and identify and implement successful safety solutions. Florida's transportation system is evaluated using location-specific analyses that evaluate locations where the number of crashes or crash rates are the highest and where fatalities and serious injuries are most prominent. These analyses are paired with additional systemic analyses to identify characteristics that contribute to

.

certain crash types and prioritize countermeasures that can be deployed across the system as a whole. As countermeasures are implemented, Florida also employs predictive analyses to evaluate the performance of roadways (i.e., evaluating results of implemented crash modification factors against projected crash reduction factors).

FDOT's State Safety Office works closely with FDOT Districts and regional and local traffic safety partners to develop the annual HSIP updates. Historic, risk-based, and predictive safety analyses are conducted to identify appropriate proven countermeasures to reduce fatalities and serious injuries associated with Florida's SHSP emphasis areas, resulting in a list of projects that reflect the greatest needs and are anticipated to achieve the highest benefit. While these projects and the associated policies and standards may take years to be implemented, they are built on proven countermeasures for improving safety and addressing serious crash risks or safety problems identified through a data-driven process. Florida continues to allocate all available HSIP funding to safety projects. FDOT's HSIP Guidelines provide detailed information on this data-driven process and funding eligibility.

Beginning in fiscal year 2024, HSIP funding will be distributed among FDOT Districts based on statutory formula to allow the Districts to have more clearly defined funding levels for which they can better plan to select and fund projects. MPOs and local agencies coordinate with FDOT Districts to identify and implement effective highway safety improvement projects on non-state roadways.

3.3.3 Additional FDOT Safety Planning Activities

In addition to HSIP, safety is considered as a factor in FDOT planning and priority setting for projects in preservation and capacity programs. Data is analyzed for each potential project, using traffic safety data and traffic demand modeling, among other data. The Florida PD&E Manual requires the consideration of safety when preparing a proposed project's purpose and need as part of the analysis of alternatives. Florida design and construction standards include safety criteria and countermeasures, which are incorporated in every construction project. FDOT also recognizes the importance of the American Association of State Highway Transportation Official (AASHTO) Highway Safety Manual (HSM). Through dedicated and consistent training and messaging over the last several years, the HSM is now an integral part of project development and design.

FDOT holds Program Planning Workshops annually to determine the level of funding to be allocated over the next 5 to 10 years to preserve and provide for a safe transportation system. Certain funding types are further analyzed and prioritized by FDOT Central Offices, after projects are prioritized collaboratively by the MPOs, local governments, and FDOT Districts; for example, the Safety Office is responsible for the HSIP and Highway Safety Program (HSP) and the Systems Implementation Office is responsible for the Strategic Intermodal System (SIS). Both the Safety and SIS programs consider the reduction of traffic fatalities and serious injuries in their criteria for ranking projects.

3.4 Safety Investments in the TIP

The **Collier MPO** recognizes the importance of linking goals, objectives and investment priorities to established performance objectives, and that this link is critical to the achievement of national transportation goals and statewide and regional performance targets. As such, the **Collier MPO 2045 LRTP** reflects the goals, objectives, performance measures, and targets as they are available and described in other state and public transportation plans and processes; specifically the Florida Strategic Highway Safety Plan (SHSP), the Florida Highway Safety Improvement Program (HSIP) and the Florida Transportation Plan (FTP). **In addition, the MPO adopted a Local Roads Safety Plan in 2020 and is implementing the Plan's recommendations through proactive public outreach and education, partnering with local and regional safety advocacy groups and setting aside a portion of its SU allocation to fund local safety projects and studies. The MPO is currently developing a Comprehensive Safety Action Plan (CSAP) funded by a federal Safe Streets and Roads for All (SS4A) grant. The anticipated completion date for the CSAP is September 30, 2025.**

The Collier MPO considered safety as a project evaluation factor in prioritizing projects for inclusion in the 2045 LRTP Cost Feasible Plan and in specific plans incorporated into the LRTP CFP by reference: The Transportation System Performance Report and Action Plan (2020), the Bicycle and Pedestrian Master Plan (2019) and the Local Roads Safety Plan (2020). The TIP includes bicycle and pedestrian infrastructure projects, Safe Routes to Schools Projects, and roadway projects that increase vehicular safety. None of these projects use HSIP funds.

4 – PAVEMENT & BRIDGE CONDITION MEASURES (PM2)

FHWA's Bridge & Pavement Condition Performance Measures Final Rule, which is also referred to as the PM2 rule, requires state DOTs and MPOs to establish targets for the following six performance measures:

1. Percent of NHS bridges (by deck area) classified as in good condition;
2. Percent of NHS bridges (by deck area) classified as in poor condition;
3. Percent of Interstate pavements in good condition;
4. Percent of Interstate pavements in poor condition;
5. Percent of non-Interstate National Highway System (NHS) pavements in good condition; and
6. Percent of non-Interstate NHS pavements in poor condition;

For the pavement measures, five pavement metrics are used to assess condition:

- International Roughness Index (IRI) - an indicator of roughness; applicable to asphalt, jointed concrete, and continuous concrete pavements;
- Cracking percent - percentage of pavement surface exhibiting cracking; applicable to asphalt, jointed concrete, and continuous concrete pavements;
- Rutting - extent of surface depressions; applicable to asphalt pavements only;
- Faulting - vertical misalignment of pavement joints; applicable to jointed concrete pavements only; and
- Present Serviceability Rating (PSR) – a quality rating applicable only to NHS roads with posted speed limits of less than 40 miles per hour (e.g., toll plazas, border crossings). States may choose to collect and report PSR for applicable segments as an alternative to the other four metrics.

4.1 Bridge & Pavement Condition Targets

Table 4.1. Statewide Pavement and Bridge Condition Performance Targets

Performance Measure	2023 Statewide Target	2025 Statewide Target
Percent of NHS bridges (by deck area) in good condition	50.0%	50.0%
Percent of NHS bridges (by deck area) in poor condition	10.0%	10.0%
Percent of Interstate pavements in good condition	60.0%	60.0%
Percent of Interstate pavements in poor condition	5.0%	5.0%
Percent of non-Interstate pavements in good condition	40.0%	40.0%
Percent of non-Interstate pavements in poor condition	5.0%	5.0%

4.1.1 Statewide Targets

Federal rules require state DOTs to establish two-year and four-year targets for the bridge and pavement condition measures. On December 16, 2022, FDOT established statewide bridge and pavement targets for the second performance period ending in 2025. These targets are identical to those set for 2019 and 2021, respectively. Florida's performance through 2021 exceeds the targets. The two-year targets represent bridge and pavement condition at the end of calendar year 2023, while the four-year targets represent condition at the end of 2025. Table 4.1 presents the statewide targets.

According to FDOT, 2023 Pavement conditions in Collier County were:

- 84.0% of NHS bridges in good condition / 0.2% in poor condition
- 64.5% of Interstate pavement in good condition / 0% in poor condition
- 42.7%% of Non-Interstate NHS in good condition / 0.3% in poor condition

For comparative purposes, the baseline (2021) conditions were as follows:

- 61.3 percent of NHS bridges (by deck area) is in good condition and 0.5 percent is in poor condition.
- 70.5 percent of the Interstate pavement is in good condition and 0.7 percent is in poor condition;
- 47.5 percent of the non-Interstate NHS pavement is in good condition and 1.1 percent is in poor condition; and

In determining its approach to establishing performance targets for the federal bridge and pavement condition performance measures, FDOT considered many factors. FDOT is mandated by Florida Statute 334.046 to preserve the state's bridges and pavement to specific state-defined standards. To adhere to the statutory guidelines, FDOT prioritizes funding allocations to ensure the current transportation system is adequately preserved and maintained before funding is allocated for capacity improvements. These state statutory guidelines envelope the statewide federal targets that have been established for pavements and bridges.

In addition, FDOT develops a Transportation Asset Management Plan (TAMP) for all NHS pavements and bridges within the state. The TAMP must include investment strategies leading to a program of projects that would make progress toward achievement of the State's targets for asset condition and performance of the NHS. FDOT's first TAMP was approved on June 28, 2019. The TAMP has since been updated in 2022 and 2023 and is waiting final approval from FHWA.

Further, the federal pavement condition measures require a methodology that is different from the methods historically used by FDOT. For bridge condition, the performance is measured in deck area under the federal measure, while FDOT programs its bridge repair or replacement work on a bridge-by-bridge basis. As such, the federal measures are not directly comparable to the methods that are most familiar to FDOT. For pavement condition, the methodology uses different ratings and pavement segment lengths, and FDOT only has one year of data available for non-Interstate NHS pavement using the federal methodology.

FDOT collects and reports bridge and pavement data to FHWA each year to track performance and progress toward the targets. The percentage of Florida's bridges in good condition is slowly decreasing, which is to be expected as the bridge inventory grows older. Reported bridge and pavement data through 2021 exceeded the established targets. Based on anticipated funding levels, FDOT believes the previous targets are still appropriate for 2023 and 2025.

In early 2022, FHWA determined that FDOT made significant progress toward the targets; FHWA's assessment of progress toward the 2023 targets is anticipated to be released in March 2024.

4.1.2 MPO Targets

MPOs must set four-year targets for the six bridge and pavement condition measures within 180 days of when FDOT established targets. MPOs can either agree to program projects that will support the statewide targets

On **November 9, 2018 and again on April 14, 2023, the Collier MPO** agreed to support FDOT's statewide bridge and pavement performance targets, thus agreeing to plan and program projects in the TIP that once implemented, are anticipated to make progress toward achieving the statewide targets.

Collier MPO's NHS roadways are:
- **I-75 (SR 93)**
- **US 41 (SSR 45, Tamiami Trail)**
- **CR 951 (Collier Blvd) between US 41 and I-75.**

There are no bridges on CR 951 between US 41 and I-75. The County resurfaced the roadway in calendar year 2024.

4.2 Bridge & Pavement Investments in the TIP

The Collier MPO's TIP reflects investment prioritized established by FDOT for I-75 and US 41 and is consistent with the 2045 LRTP. The focus of Collier MPO's investments in bridge and pavement condition on the NHS include:
- Pavement replacement and reconstruction
- New lanes or widenings of facilities including resurfacing associated with new capacity projects
- Bridge replacement or reconstruction
- New bridge capacity
- System resiliency projects that support bridge performance.

The projects included in the TIP are consistent with FDOT's Five Year Work Program, and therefore consistent with

FDOT's approach to prioritize funding to ensure the transportation system is adequately preserved and maintained. Per federal planning requirements, the state selects projects on the NHS in cooperation with the MPO from the approved TIP. Given the significant resources devoted in the TIP to pavement and bridge projects, the MPO anticipates that once implemented, the TIP will contribute to progress towards achieving the statewide pavement and bridge condition performance targets.

5 - SYSTEM PERFORMANCE, FREIGHT, & CONGESTION MITIGATION & AIR QUALITY IMPROVEMENT PROGRAM MEASURES (PM3)

FHWA's System Performance/Freight/CMAQ Performance Measures Final Rule, which is referred to as the PM3 rule, requires state DOTs and MPOs to establish targets for the following six performance measures:

National Highway Performance Program (NHPP)

1. Percent of person-miles traveled on the Interstate system that are reliable

2. Percent of person-miles traveled on the non-Interstate NHS that are reliable;

National Highway Freight Program (NHFP)

3. Truck Travel Time Reliability index (TTTR);

Congestion Mitigation and Air Quality Improvement Program (CMAQ)

4. Annual hours of peak hour excessive delay per capita (PHED);

5. Percent of non-single occupant vehicle travel (Non-SOV); and

6. Cumulative 2-year and 4-year reduction of on-road mobile source emissions (NOx, VOC, CO, PM10, and PM2.5) for CMAQ funded projects.

Because all areas in Florida meet current national air quality standards, the three CMAQ measures do not apply in Florida. A description of the first three measures is below.

The first two performance measures assess the percent of person-miles traveled on the Interstate or the non- Interstate NHS that are reliable. Reliability is defined as the ratio of longer travel times to a normal travel time over of all applicable roads, across four time periods between the hours of 6 a.m. and 8 p.m. each day.

The third performance measure assesses the reliability of truck travel on the Interstate system. The TTTR assesses how reliable the Interstate network is by comparing the worst travel times for trucks against the travel time they typically experience.

5.1 System Performance and Freight Targets

5.1.1 Statewide Targets

Federal rules require state DOTs to establish two-year and four-year targets for the system performance and freight targets. On December 16, 2022, FDOT established statewide performance targets for the second performance period ending in 2025. These targets are identical to those set for 2019 and 2021, respectively. Florida's performance through 2021 exceeds the targets. The two-year targets represent performance at the end of calendar year 2023, while the four-year targets represent performance at the end of 2025. Table 5.1 presents the statewide targets.

Table 5.1. Statewide System Performance and Freight Targets

Performance Measure	2023 Statewide Target	2025 Statewide Target
Percent of person-miles traveled on the Interstate system that are reliable	75.0%	70.0%
Percent of person-miles traveled on the non-Interstate NHS that are reliable	50.0%	50.0%
Truck travel time reliability (Interstate)	1.75	2.00

For comparative purposes, baseline (2021) statewide conditions are as follows:

- 87.5 percent of person-miles traveled on the Interstate are reliable;
- 92.9 percent of person-miles traveled on the non-Interstate are reliable; and
- 1.38 truck travel time reliability index.

In establishing these targets, FDOT reviewed external and internal factors that may affect reliability, analyzed travel time data from the National Performance Management Research Dataset (NPMRDS), and developed a sensitivity analysis indicating the level of risk for road segments to become unreliable.

FDOT collects and reports reliability data to FHWA each year to track performance and progress toward the reliability targets. Performance for all three measures improved from 2017 to 2021, with some disruption in the trend during the global pandemic in 2020. Actual performance in 2019 was better than the 2019 targets, and in early 2021 FHWA determined that FDOT made significant progress toward the 2019 targets. FHWA's assessment of progress toward the 2021 targets is anticipated to be released in March 2023.

The methodologies for the PM3 measures are still relatively new, and the travel time data source has changed since the measures were first introduced. As a result, FDOT only has three years (2017-2019) of pre-pandemic travel reliability trend data as a basis for future forecasts. Based on the current data, Florida's performance continues to exceed the previous targets. Given the uncertainty in future travel behavior, FDOT believes the previous targets are still appropriate for 2023 and 2025. System performance and freight are addressed through several statewide initiatives:

- Florida's Strategic Intermodal System (SIS) is composed of transportation facilities of statewide and interregional significance. The SIS is a primary focus of FDOT's capacity investments and is Florida's primary network for ensuring a strong link between transportation and economic competitiveness. These facilities, which span all modes and includes highways, are the workhorses of Florida's transportation system and account for a dominant share of the people and freight movement to, from and within Florida. The SIS includes 92 percent of NHS lane miles in the state. Thus, FDOT's focus on improving performance of the SIS goes hand-in-hand with improving the NHS, which is the focus of the FHWA's TPM program. The SIS Policy Plan was updated in early 2022 consistent with the updated FTP. The SIS Policy Plan defines the policy framework for designating which facilities are part of the SIS, as well as how SIS investments needs are identified and prioritized. The development of the SIS Five-Year Plan by FDOT considers scores on a range of measures including mobility, safety, preservation, and economic competitiveness as part of FDOT's Strategic Investment Tool (SIT).

- In addition, FDOT's Freight Mobility and Trade Plan (FMTP) defines policies and investments that will enhance Florida's economic development efforts into the future. The FMTP identifies truck bottlenecks and other freight investment needs and defines the process for setting priorities among these needs to receive funding from the National Highway Freight Program (NHFP). Project evaluation criteria tie back to the FMTP objectives to ensure high priority projects support the statewide freight vision. In May 2020, FHWA approved the FMTP as FDOT's State Freight Plan.

- FDOT also developed and refined a methodology to identify freight bottlenecks on Florida's SIS on an annual basis using vehicle probe data and travel time reliability measures. Identification of bottlenecks and estimation of their delay impact aids FDOT in focusing on relief efforts and ranking them by priority. In turn, this information is incorporated into FDOT's SIT to help identify the most important SIS capacity projects to relieve congestion.

5.1.2 MPO Targets

MPOs must establish four-year targets for all three performance measures. MPOs can either agree to program projects that will support the statewide targets or establish their own quantifiable targets for the MPO's planning area for one or more measures.

On **November 9, 2018 and again on April 14, 2023, the Collier MPO** agreed to support FDOT's statewide system performance and freight targets, thus agreeing to plan and program projects in the TIP that once implemented, are anticipated to make progress toward achieving the statewide targets.

FDOT reported on the **2023 conditions within Collier County** as follows:

- 91.2% of NHS Interstate Person-Miles Traveled are reliable
- 98.1% of NHS Non-Interstate Person-Miles Traveled are reliable
- 1.40 Truck Travel Time reliability index on the NHS.

5.2 System Performance and Freight Investments in the TIP

The Collier MPO TIP reflects investment priorities established in the **2045 LRTP**. The focus of **Collier MPO's** investments that address system performance and freight are:

- Corridor improvements
- Intersection improvements on NHS roads
- Projects evaluated in the CMP and selected for the TIP
- Investments in transit, bicycle, and pedestrian systems that promote mode shift
- **Additional lanes planned on I-75 between Golden Gate Parkway in Collier County and Bonita Beach Rd in Lee County**
- **Interchange improvements at I-75 and Pine Ridge (2025-2029 TIP) and at I-75 and Immokalee (2026-2030 TIP)**
- **Immokalee Loop Road and widening of SR 29**
- Freight improvements that increase reliability and safety

Collier MPO uses project selection criteria related to congestion relief, reliability, mode shift, and freight in the LRTP and in the project prioritization process for the use of the MPO's SU "box" funds.

The projects included in the TIP are consistent with FDOT's Five Year Work Program and therefore with FDOT's approach to prioritize funding to address performance goals and targets. Per federal planning requirements, the state selects projects on the NHS in cooperation with he MPO from the approved TIP. Given the significant resources devoted in the TIP to projects that address system performance and freight, the MPO anticipates that once implemented, the TIP will contribute to progress towards achieving the statewide reliability performance targets.

6 - TRANSIT ASSET MANAGEMENT MEASURES

Transit Asset Performance Measures

FTA's Transit Asset Management (TAM) regulations apply to all recipients and subrecipients of Federal transit funding that own, operate, or manage public transportation capital assets. The regulations define the term "state of good repair," require that public transportation providers develop and implement TAM plans, and established state of good repair standards and performance measures for four asset categories: equipment, rolling stock, transit infrastructure, and facilities. Table 6.1 identifies the TAM performance measures.

Table 6.1. FTA TAM Performance Measures

Asset Category	Performance Measure
1. Equipment	Percentage of non-revenue, support-service and maintenance vehicles that have met or exceeded their Useful Life Benchmark
2. Rolling Stock	Percentage of revenue vehicles within a particular asset class that have either met or exceeded their Useful Life Benchmark
3. Infrastructure	Percentage of track segments with performance restrictions
4. Facilities	Percentage of facilities within an asset class rated below condition 3 on the TERM scale

For equipment and rolling stock classes, useful life benchmark (ULB) is defined as the expected lifecycle of a capital asset, or the acceptable period of use in service, for a particular transit provider's operating environment. ULB considers a provider's unique operating environment such as geography, service frequency, etc.

Public transportation providers are required to establish and report TAM targets annually for the following fiscal year. Each public transportation provider or its sponsors must share its targets with each MPO in which the public transportation provider's projects and services are programmed in the MPO's TIP. MPOs are not required to establish TAM targets annually each time the transit provider establishes targets. Instead, MPO targets must be established when the MPO updates the LRTP (although it is recommended that MPOs reflect the most current transit provider targets in

6- TRANSIT ASSET MANAGEMENT MEASURES

Transit Asset Performance Measures

FTA's Transit Asset Management (TAM) regulations apply to all recipients and subrecipients of Federal transit funding that own, operate, or manage public transportation capital assets. The regulations define the term "state of good repair," require that public transportation providers develop and implement TAM plans, and established state of good repair standards and performance measures for four asset categories: equipment, rolling stock, transit infrastructure, and facilities. Table 6.1 identifies the TAM performance measures.

Table 6.1. FTA TAM Performance Measures

Asset Category	Performance Measure
1. Equipment	Percentage of non-revenue, support-service and maintenance vehicles that have met or exceeded their Useful Life Benchmark
2. Rolling Stock	Percentage of revenue vehicles within a particular asset class that have either met or exceeded their Useful Life Benchmark
3. Infrastructure	Percentage of track segments with performance restrictions
4. Facilities	Percentage of facilities within an asset class rated below condition 3 on the TERM scale

For equipment and rolling stock classes, useful life benchmark (ULB) is defined as the expected lifecycle of a capital asset, or the acceptable period of use in service, for a particular transit provider's operating environment. ULB considers a provider's unique operating environment such as geography, service frequency, etc.

Public transportation providers are required to establish and report TAM targets annually for the following fiscal year. Each public transportation provider or its sponsors must share its targets with each MPO in which the public transportation provider's projects and services are programmed in the MPO's TIP. MPOs are not required to establish TAM targets annually each time the transit provider establishes targets. Instead, MPO targets must be established when the MPO updates the LRTP (although it is recommended that MPOs reflect the most current transit provider targets in

the TIP if they have not yet taken action to update MPO targets). When establishing TAM targets, the MPO can either agree to program projects that will support the transit provider targets or establish its own separate regional TAM targets for the MPO planning area. MPO targets may differ from agency targets, especially if there are multiple transit agencies in the MPO planning area. To the maximum extent practicable, public transit providers, states, and MPOs must coordinate with each other in the selection of performance targets.

The TAM regulation defines two tiers of public transportation providers based on size parameters. Tier I providers are those that operate rail service, or more than 100 vehicles in all fixed route modes, or more than 100 vehicles in one non-fixed route mode. Tier II providers are those that are a subrecipient of FTA 5311 funds, or an American Indian Tribe, or have 100 or less vehicles across all fixed route modes or have 100 or less vehicles in one non-fixed route mode. A Tier I provider must establish its own TAM targets, as well as report performance and other data to FTA. A Tier II provider has the option to establish its own targets or to participate in a Group Plan with other Tier II providers whereby targets are established for the entire group.

6.1 Transit Asset Management Targets

The Collier MPO has a single Tier II transit provider operating in the region – the Board of County Commissioners (BCC) oversees the Collier Area Transit (CAT) system. CAT does not participate in the FDOT Group TAM Plan because it has too few busses to meet the criteria.

6.1.1 Transit Provider Targets

CAT's TAM targets are based on the condition of existing transit assets and planned investments in equipment, rolling stock, infrastructure, and facilities. The targets reflect the most recent data available on the number, age, and condition of transit assets, and capital investment plans for improving these assets. The table summarizes both existing conditions for the most recent year available, and the current targets.

Table 6.1 Transit /FY23 Performance and Performance Targets for FY24

** Collier County Facilities Management Division assists with conducting facilities condition assessments.*

General Condition Assessment Rating Scale

5 - Excellent
4 - Good
3 - Adequate
2 - Marginal
1 - Poor

Facility Performance Measure			
Number of Facilities	*Number of Facilities at or below 3.0*	*Percent facilities at or Below 3.0*	*Performance Target*
5	1	20%	25%

Collier County Public Transit & Neighborhood Division

INSERTED NEW TABLE PTNE PROVIDED IN MARCH 2025

FY24 Transit Asset Management Assets Performance & Performance Targets for FY25

Rolling Stock				
Fleet Size	*Veh Type*	*ULB*	*% Exceeds ULB*	*Performance Targets*
30	Over the road bus	14 years	0%	4%
28	Cutaway bus	10 years	0%	4%
5	Mini Van	8 years	20%	25%
1	Automobiles	8 years	100%	100%
5	Trucks and other Rubber Tire Vehicles	8 years	80%	40%

Rolling Stock Performance targets are based on the Useful life Benchmark, replacement schedule is based on ULB and mileage of vehicles.

Facilities			
Bus Passenger Transfer Station - Base 1			
Facility Type	*Component*	*Condition Rating - *Pre-Assessment*	*Performance Targets*
Administration		**4**	**4**
	Substructure	4	4
	Shell	3	4
	Interior	4	4
	Conveyance	4	4
	Plumbing	4	4
	HVAC	4	4
	Fire Protection	5	5
	Electrical	4	4
	Site	4	4

	Site	4	4
Maintenance		**3**	**4**
	Substructure	2	4
	Shell	1	3
	Interior	1	3
	Conveyance	4	4
	Plumbing	3	3
	HVAC	3	3
	Fire Protection	4	4
	Electrical	3	4
	Equipment	4	4
	Fare Collections	4	4
	Site	4	3
Fuel Station		**4**	**4**
	Substructure	4	4
	Shell	4	4
	Interior	4	4
	Plumbing	4	4
	HVAC		
	Fire Protection	5	5
	Electrical	4	4
	Equipment	5	4
	Site	4	4
Bus Wash		**4**	**4**
	Substructure	4	4
	Shell	4	4
	Interior	4	4
	Plumbing	4	4
	HVAC		
	Fire Protection	5	5
	Electrical	4	4
	Equipment	4	4
	Site	5	4

Intermodal Passenger Transfer Station - Base 2

Facility Type	*Component*	*Condition Rating -* Pre-Assessment*	*Performance Targets*
Administration		**4**	**4**
	Substructure	4	4
	Shell	4	4
	Interior	4	4
	Plumbing	4	4
	HVAC	4	4
	Fire Protection	4	4
	Electrical	4	4
	Site	4	4

6.2.2 MPO Transit Asset Management Targets

As discussed above, MPOs are not required to establish TAM targets annually each time the transit provider establishes targets. Instead, MPO's must revisit targets each time the MPO updates the LRTP. MPOs can either agree to program projects that will support the transit provider targets or establish separate regional TAM targets for the MPO planning area. MPO targets may differ from agency targets, especially if there are multiple transit agencies in the MPO planning area.

On October 12, 2018 and again on December 9, 2022, the Collier MPO agreed to support the Collier County BCC/CAT transit asset management targets, thus agreeing to plan and program projects in the TIP that once implemented, are anticipated to make progress toward achieving the transit provider targets.

6.3 Transit Asset Management Investments in the TIP

The Collier MPO TIP was developed and is managed in cooperation with CAT. It reflects investment priorities established in the 2045 LRTP. CAT submits a list of Transit Priority Projects to the MPO Board for approval on an annual basis. The priority projects reflect the investment priorities established in the 2045 LRTP which incorporates the Transit Development Plan as its transit element. FTA funding, as programmed by the MPO, CAT and FDOT is used for programs and products to improve the conditions of CAT's transit assets.

The focus of **Collier MPO's** investments that address transit state of good repair include:

- Bus and other vehicle purchases, repair and replacements
- Equipment purchases, repair and replacements
- Repair, rehabilitation and replacement of transit facilities

7 - TRANSIT SAFETY PERFORMANCE

FTA's Public Transportation Agency Safety Plan (PTASP) regulations established transit safety performance management requirements for providers of public transportation systems that receive federal financial assistance under 49 U.S.C. Chapter 53.

The regulations apply to all operators of public transportation that are a recipient or sub-recipient of FTA Urbanized Area Formula Grant Program funds under 49 U.S.C. Section 5307, or that operate a rail transit system that is subject to FTA's State Safety Oversight Program. The PTASP regulations do not apply to certain modes of transit service that are subject to the safety jurisdiction of another Federal agency, including passenger ferry operations regulated by the United States Coast Guard, and commuter rail operations that are regulated by the Federal Railroad Administration.

The PTASP must include performance targets for the performance measures established by FTA in the National Public Transportation Safety Plan, which was published on January 28, 2017. The transit safety performance measures are:

- Total number of reportable fatalities and rate per total vehicle revenue miles by mode.
- Total number of reportable injuries and rate per total vehicle revenue miles by mode.
- Total number of reportable safety events and rate per total vehicle revenue miles by mode.
- System reliability – mean distance between major mechanical failures by mode.

In Florida, each Section 5307 or 5311 public transportation provider must develop a System Safety Program Plan (SSPP) under Chapter 14-90, Florida Administrative Code. FDOT technical guidance recommends that Florida's transit agencies revise their existing SSPPs to be compliant with the new FTA PTASP requirements.[1]

Each public transportation provider that is subject to the PTASP regulations must certify that its SSPP meets the requirements for a PTASP, including transit safety targets for the federally required measures. Providers were required to certify their initial PTASP and safety targets by July 20, 2021. Once the public transportation provider establishes safety targets it must make the targets available to MPOs to aid in the planning process. MPOs are not required to establish transit safety targets annually each time the transit provider establishes targets. Instead, MPO targets must be established when the MPO updates the LRTP (although it is recommended that MPOs reflect the current transit provider targets in their TIPs). When establishing transit safety targets, the MPO can either agree to program projects that will support the transit provider targets or establish its own separate regional transit safety targets for the MPO planning area. In addition, the **Collier MPO** must reflect those targets in LRTP and TIP updates.

7.1 Transit Safety Targets

CAT is responsible for developing a PTASP and establishing transit safety targets. **Collier MPO** adopted the transit safety targets shown below on September 11, 2020.

Table 7-1 Collier Area Transit Safety Targets 2024 Report

SPT Category	2021		2022		2023		3-Year Average		Target	
	MB	DR	MB	DR	MB	DR	MB	DR	MB	DR
Total Number of Fatalities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
Fatality Rate per 100,000 VRM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
Total Number of Injuries	0.0	0.0	6.0	3.0	3.0	5.0	3.0	2.7	3	2
Injury Rate per 100,000 VRM	0.0	0.0	0.4	0.3	0.2	0.4	0.2	0.2	0.2	0.2
Total Number of Safety Events	0.0	0.0	6.0	3.0	4.0	5.0	3.3	2.7	3	3
Safety Event Rate per 100,000 VRM	0.0	0.0	0.4	0.3	0.3	0.4	0.2	0.2	0.3	0.2
Total Number of Major Mechanical System Failures	73.0	20.0	134.0	60.0	70.0	9.0	92.3	29.7	20	20
Vehicle Failures Per 100,000 VRM)	5.1	2.0	9.7	6.1	5.1	0.7	6.7	2.9	2	2
Annual VRM	1,422,532.00	995,771.00	1,381,925.00	989,918.00	1,366,218.00	1,306,827.00	1,390,225	1,097,505	1,400,000	1,000,000

7.2 Transit Safety Investments in the TIP

The **Collier MPO** TIP was developed and is managed in cooperation with **CAT.** It reflects the investment priorities established in the 2045 LRTP.

FTA funding, as programmed by the region's transit providers and FDOT, is used for programs and products to improve the safety of the region's transit systems. Transit safety is a consideration in the methodology **Collier MPO** uses to select projects for inclusion in the TIP. The TIP includes specific investment priorities that support all of the MPO's goals, including transit safety, using a prioritization and project selection process established in the LRTP. This process evaluates projects that, once implemented, are anticipated to improve transit safety in the MPO's planning area. **Collier MPO** relies on CAT to include transit safety-related projects in the annual list of Transit Priorities submitted to the MPO.

7A Attachment 2
TAC/CAC 3/24/25

COLLIER METROPOLITAN PLANNING ORGANIZATION

TRANSPORTATION IMPROVEMENT PROGRAM

FY2026 - FY2030

DRAFT

MPO Board Adoption June 13, 2025

2885 Horseshoe Dr

Naples, FL 34104

The preparation of this report has been financed in part through grants from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the Metropolitan Planning Program, Sections 134 and 135 of Title 23 U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

COLLIER METROPOLITAN PLANNING ORGANIZATION

Commissioner Dan Kowal, MPO Chair
Collier County (District 4)

Council Member Tony Pernas, MPO Vice-Chair
City of Everglades City

Commissioner Rick LoCastro
Collier County (District 1)

Commissioner Chris Hall
Collier County (District 2)

Commissioner Burt Saunders
Collier County (District 3)

Commissioner William McDaniel, Jr.
Collier County (District 5)

Council Member Bonita Schwan
City of Marco Island

Council Member Linda Penniman
City of Naples

Council Member Berne Barton
City of Naples

Anne McLaughlin
MPO Executive Director

Scott R. Teach, Esq.
Collier County Deputy Attorney

MPO RESOLUTION #2025-xx
A RESOLUTION OF THE COLLIER METROPOLITAN PLANNING ORGANIZATION ADOPTING THE FY 2024/25 – 2028/29 TRANSPORTATION IMPROVEMENT PROGRAM (TIP)

WHEREAS, the Collier Metropolitan Planning Organization is required to develop an annually updated Transportation Improvement Program pursuant to 23 U.S.C. 134(j), 23 C.F.R. 450.104, 23 C.F.R. 450.324(a), and F.S. 339.175(8)(c)(1); and

WHEREAS, the Collier Metropolitan Planning Organization has reviewed the proposed Transportation Improvement Program and determined that is consistent with its adopted Plans and Program; and

WHEREAS, in accordance with the Florida Department of Transportation's MPO Administrative Manual, the Transportation Improvement Program must be accompanied by an endorsement indicating official MPO approval;

THEREFORE, BE IT RESOLVED by the Collier Metropolitan Planning Organization that:

1. The FY 2025/26 – 2029/30 Transportation Improvement Program and the projects programmed therein are hereby adopted.
2. The Collier Metropolitan Planning Organization's Chairman is hereby authorized to execute this Resolution certifying the MPO Board's endorsement of the FY 2025/26 – 2029/30 Transportation Improvement Program and the projects programmed therein.

This Resolution PASSED and duly adopted by the Collier Metropolitan Planning Organization Board after majority vote on this 13th day of June 2025.

Attest:

By: ___________________________
Anne McLaughlin
MPO Executive Director

COLLIER METROPOLITAN PLANNNING ORGANIZATION

By: ____
Commissioner Dan Kowal
Collier MPO Chairman

Approved as to form and legality:

____
Scott R. Teach, Deputy County Attorney

Acronyms

Acronym	Description
ADA	Americans with Disabilities Act
AUIR	Annual Update and Inventory Report
BCC/BOCC	Board of County Commissioners (Collier County)
BIL	Bipartisan Infrastructure Law
BPAC	Bicycle & Pedestrian Advisory Committee
BPMP	Bicycle & Pedestrian Master Plan
BRT	Bus Rapid Transit
CAC	Citizens Advisory Committee
CAT	Collier Area Transit
CEI	Construction Engineering Inspection
CFR	Code of Federal Regulations
CIE	Capital Improvement Element
CIGP	County Incentive Grant Program
CIP	Capital Improvement Program
CMC	Congestion Management Committee
CMP	Congestion Management Process
CMS	Congestion Management System
COA	Comprehensive Operational Analysis
CPG	Consolidated Planning Grant
CR	County Road
CRA	Community Redevelopment Agency
CTC	Community Transportation Coordinator
CTD	Commission for the Transportation Disadvantaged
CTST	Community Traffic Safety Team
DBE	Disadvantaged Business Enterprise
DEO	Florida Department of Economic Opportunity

DSB	Design Build
EIS	Environmental Impact Study
EJ	Environmental Justice
EMO	Environmental Management Office
ENG	Engineering
FAA	Federal Aviation Administration
FAP	Federal Aid Program
FAST	Fixing America's Surface Transportation Act
FASTLANE	Fostering Advancement in Shipping and Transportation for the Long-term Achievement of National Efficiencies grants
FDOT	Florida Department of Transportation (the Department)
FHWA	Federal Highway Administration
FM	Financial Management
FMTP	Freight Mobility and Trade Plan
FPID	Financial Project Identification
FPN	Financial Project Number
FPL	Florida Power & Light
FS	Florida Statute
FTA	Federal Transit Administration
FTP	Florida Transportation Plan
FY	Fiscal Year
GIS	Geographic Information System
HSIP	Highway Safety Improvement Program
HWY	Highway
I	Interstate
ICE	Intergovernmental Coordination Element
IIJA	Infrastructure Investment & Jobs Act
IJR	Interchange Justification Report
INC	Contract Incentives

IT	Information Technology
ITS	Intelligent Transportation System
JACIP	Joint Airport Capital Improvement Program
JARC	Job Access and Reverse Commute
JPA	Joint Participation Agreement
LAP	Local Agency Program
LCB	Local Coordinating Board for the Transportation Disadvantaged
LinC	Lee in Collier Transit Service
LOPP	MPO's annual List of Project Priorities
LOS	level of service
LRSP	Local Road Safety Plan
LRTP	Long Range Transportation Plan
MAP-21	Moving Ahead for Progress in the 21st Century
MFF	Moving Florida Forward Infrastructure Initiative
MOD	Mobility-On-Demand
MPA	Metropolitan Planning Area
MPO	Metropolitan Planning Organization
MPOAC	Metropolitan Planning Organization Advisory Council
MPP	Metropolitan Planning Program
NHS	National Highway System
NHTSA	National Highway Traffic Safety Administration
PEA	Planning Emphasis Area
PIP	Public Involvement Plan
PL	FHWA Planning (PL) Funds
PL	Metropolitan Planning (PL) Program
PM	Performance Measure
PPP	Public Participation Plan
RACEC	Rural Area of Critical Economic Concern

ROW	Right-of-Way
RTP	Recreational Trails Program
SA	Surface Transportation Program – Any Area
SHS	State Highway System
SIS	Strategic Intermodal System
SLR	Sea Level Rise
SR	State Road
SRTS, SR2S	Safe Routes to School
STBG	Surface Transportation Block Grant Program
STIP	State Transportation Improvement Program
STP	Surface Transportation Program
SU	Surface Transportation Funds for Urbanized Area formula based – population over 200,000
SUN	Shared-Use Nonmotorized
TA	Transportation Alternatives
TAC	Technical Advisory Committee
TAP	Transportation Alternative Program
TAZ	Traffic Analysis Zone
TD	Transportation Disadvantaged
TDA	FDOT's Transportation Data & Analytics Office
TDM	Transportation Demand Management
TDP	Transit Development Plan
TDSP	Transportation Disadvantaged Service Plan
TDTF	Transportation Disadvantaged Trust Fund
TIP	Transportation Improvement Program
TMA	Transportation Management Area
TMC	Traffic Management Center
TPM	Transportation Performance Measure
TOC	Traffic Operations Center

TRIP	Transportation Regional Incentive Program
TSM	Transportation System Management
TSM&O	Transportation System Management and Operations
TSPR	Transportation System Performance Report
ULB	Useful Life Benchmark
UPWP	Unified Planning Work Programs
USC	U.S. Code
USDOT	United States Department of Transportation
UZA	Urbanized Area
V/C	volume-to-capacity
VMT	Vehicle Miles Traveled
VRM	Vehicle Revenue Miles
WP	FDOT 5-year Work Program
YOE	Year of Expenditure
ZDATA	Zonal Data (land use and socio-economic)

Phase Codes

CAP	Capital
CST	Construction
DSB	Design Build
ENV	Environmental
INC	Contract Incentives
MNT	Maintenance
OPS	Operations
PDE	Project Development & Environment (PD&E)
PE	Preliminary Engineering
PLN	Planning
ROW	Right-of-Way
RRU	Railroad & Utilities

FDOT Fund Codes

As Of: 2/21/2024

https://fdotewp1.dot.state.fl.us/fmsupportapps/WorkProgram/support/appendixd.aspx?CT=FC

Code	Description	Fund Group	Fund Group Description
ACBR	ADVANCE CONSTRUCTION (BRT)	F22	NH - AC FUNDING
ACBZ	ADVANCE CONSTRUCTION (BRTZ)	F22	NH - AC FUNDING
ACCM	ADVANCE CONSTRUCTION (CM)	F32	O.F.A. - AC FUNDING
ACER	ADVANCE CONSTRUCTION (ER)	F32	O.F.A. - AC FUNDING
ACFP	AC FREIGHT PROG (NFP)	F22	NH - AC FUNDING
ACID	ADV CONSTRUCTION SAFETY (HSID)	F22	NH - AC FUNDING
ACLD	ADV CONSTRUCTION SAFETY (HSLD)	F22	NH - AC FUNDING
ACNP	ADVANCE CONSTRUCTION NHPP	F22	NH - AC FUNDING
ACNR	AC NAT HWY PERFORM RESURFACING	F22	NH - AC FUNDING
ACPR	AC - PROTECT GRANT PGM	F22	NH - AC FUNDING
ACSA	ADVANCE CONSTRUCTION (SA)	F32	O.F.A. - AC FUNDING
ACSL	ADVANCE CONSTRUCTION (SL)	F32	O.F.A. - AC FUNDING
ACSM	STBG AREA POP. W/ 5K TO 49,999	F32	O.F.A. - AC FUNDING
ACSN	ADVANCE CONSTRUCTION (SN)	F32	O.F.A. - AC FUNDING
ACSS	ADVANCE CONSTRUCTION (SS,HSP)	F22	NH - AC FUNDING
ACSU	ADVANCE CONSTRUCTION (SU)	F32	O.F.A. - AC FUNDING
ARDR	ARPA- SCETS MOTOR FUEL TAX	F49	100% FEDERAL NON-FHWA
ARPA	AMERICAN RESCUE PLAN ACT	F49	100% FEDERAL NON-FHWA
ARSC	AMER. RESCUE PLAN SCOP PGM	F49	100% FEDERAL NON-FHWA
ARSR	AMER. RESCUE PLAN SCRAP PGM	F49	100% FEDERAL NON-FHWA
ART	ARTERIAL HIGHWAYS PROGRAMS	N11	100% STATE
ARTW	ARTERIAL WIDENING PROGRAM	N11	100% STATE
BNBR	AMENDMENT 4 BONDS (BRIDGES)	N31	BONDS
BNDS	BOND - STATE	N31	BONDS
BNIR	INTRASTATE R/W & BRIDGE BONDS	N31	BONDS
BRP	STATE BRIDGE REPLACEMENT	N11	100% STATE
BRRP	STATE BRIDGE REPAIR & REHAB	N11	100% STATE
BRRR	BRIDGE REPAIR RAILROADS	N11	100% STATE
BRTZ	FED BRIDGE REPL - OFF SYSTEM	F21	NH - REGULAR FUNDING

CARB	CARBON REDUCTION GRANT PGM	F31	O.F.A. - REGULAR FUNDS
CARL	CARB FOR URB. LESS THAN 200K	F31	O.F.A. - REGULAR FUNDS
CARM	CARB FOR SM. URB. 5K - 49,999	F31	O.F.A. - REGULAR FUNDS
CARN	CARB FOR RURAL AREAS < 5K	F31	O.F.A. - REGULAR FUNDS
CARU	CARB FOR URB. AREA > THAN 200K	F31	O.F.A. - REGULAR FUNDS
CD22	CONGRESS GF EARMARKS HIP 2022	F43	100% FEDERAL DEMO/EARMARK
CD23	CONGRESS GF EARMARKS HIP 2023	F43	100% FEDERAL DEMO/EARMARK
CIGP	COUNTY INCENTIVE GRANT PROGRAM	N12	100% STATE - SINGLE AUDIT ACT
CM	CONGESTION MITIGATION - AQ	F31	O.F.A. - REGULAR FUNDS
D	UNRESTRICTED STATE PRIMARY	N11	100% STATE
DC	STATE PRIMARY PE CONSULTANTS	N11	100% STATE
DDR	DISTRICT DEDICATED REVENUE	N11	100% STATE
DEM	ENVIRONMENTAL MITIGATION	N11	100% STATE
DER	EMERGENCY RELIEF - STATE FUNDS	N11	100% STATE
DFTA	FED PASS-THROUGH $ FROM FTA	F49	100% FEDERAL NON-FHWA
DI	ST. - S/W INTER/INTRASTATE HWY	N11	100% STATE
DIH	STATE IN-HOUSE PRODUCT SUPPORT	N11	100% STATE
DIOH	STATE 100% - OVERHEAD	N11	100% STATE
DIS	STRATEGIC INTERMODAL SYSTEM	N11	100% STATE
DITS	STATEWIDE ITS - STATE 100%.	N11	100% STATE
DL	LOCAL FUNDS - PTO - BUDGETED	N44	LOCAL
DPTO	STATE - PTO	N11	100% STATE
DRA	REST AREAS - STATE 100%	N11	100% STATE
DS	STATE PRIMARY HIGHWAYS & PTO	N11	100% STATE
DSB0	UNALLOCATED TO FACILITY	N41	TOLL CAPITAL IMPROVEMENT
DSB1	SKYWAY	N41	TOLL CAPITAL IMPROVEMENT
DSB2	EVERGLADES PKY/ALLIGATOR ALLEY	N41	TOLL CAPITAL IMPROVEMENT
DSB3	PINELLAS BAYWAY	N41	TOLL CAPITAL IMPROVEMENT
DSB7	MID-BAY BRIDGE AUTHORITY	N41	TOLL CAPITAL IMPROVEMENT
DSBC	GARCON POINT BRIDGE	N41	TOLL CAPITAL IMPROVEMENT
DSBD	I-95 EXPRESS LANES	N41	TOLL CAPITAL IMPROVEMENT
DSBF	I-595	N41	TOLL CAPITAL IMPROVEMENT
DSBG	I-75 ML TOLL CAP IMPROVEMENT	N41	TOLL CAPITAL IMPROVEMENT
DSBH	I-4 ML TOLL CAP IMPROVEMENT	N41	TOLL CAPITAL IMPROVEMENT

DSBI	PALMETTO ML TOLL CAP IMPROVE	N41	TOLL CAPITAL IMPROVEMENT
DSBJ	I-295 EXPRESS LANES - CAPITAL	N41	TOLL CAPITAL IMPROVEMENT
DSBK	TAMPA BAY EXPRESS LANES	N41	TOLL CAPITAL IMPROVEMENT
DSBT	TURNPIKE/REIMBURSED BY TOLL	N41	TOLL CAPITAL IMPROVEMENT
DSBW	WEKIVA PARKWAY	N41	TOLL CAPITAL IMPROVEMENT
DSPC	SERVICE PATROL CONTRACT	N11	100% STATE
DU	STATE PRIMARY/FEDERAL REIMB	F49	100% FEDERAL NON-FHWA
DUCA	TRANSIT CARES/CRRSAA ACT	F49	100% FEDERAL NON-FHWA
DWS	WEIGH STATIONS - STATE 100%	N11	100% STATE
EB	EQUITY BONUS	F31	O.F.A. - REGULAR FUNDS
EM19	GAA EARMARKS FY 2019	N11	100% STATE
EM22	GAA EARMARKS FY 2022	N11	100% STATE
ER17	2017 EMERGENCY RELIEF EVENTS	F42	100% FEDERAL EMERGENCY FUNDS
ER20	2020 EMERGENCY RELIEF EVENTS	F42	100% FEDERAL EMERGENCY FUNDS
ER22	2022 EMERGENCY RELIEF EVENTS	F42	100% FEDERAL EMERGENCY FUNDS
F001	FEDERAL DISCRETIONARY - US19	F33	O.F.A. - DEMO/EARMARK FUNDS
FAA	FEDERAL AVIATION ADMIN	F49	100% FEDERAL NON-FHWA
FBD	FERRYBOAT DISCRETIONARY	F33	O.F.A. - DEMO/EARMARK FUNDS
FCO	PRIMARY/FIXED CAPITAL OUTLAY	N11	100% STATE
FEDR	FEDERAL RESEARCH ACTIVITIES	F43	100% FEDERAL DEMO/EARMARK
FEMA	FED EMERGENCY MGT AGENCY	F49	100% FEDERAL NON-FHWA
FHPP	FEDERAL HIGH PRIORITY PROJECTS	F33	O.F.A. - DEMO/EARMARK FUNDS
FINC	FINANCING CORP	N51	FINC - FINANCING CORP.
FLAP	FEDERAL LANDS ACCESS PROGRAM	F41	100% FEDERAL FUNDS
FLEM	FL DIV OF EMERGENCY MANAGEMENT	N49	OTHER NON-FEDERAL FUNDS
FRA	FEDERAL RAILROAD ADMINISTRATN	F49	100% FEDERAL NON-FHWA
FTA	FEDERAL TRANSIT ADMINISTRATION	F49	100% FEDERAL NON-FHWA
FTAT	FHWA TRANSFER TO FTA (NON-BUD)	F43	100% FEDERAL DEMO/EARMARK
GFBR	GEN FUND BRIDGE REPAIR/REPLACE	F21	NH - REGULAR FUNDING
GFBZ	GENERAL FUND BRIDGE OFF-SYSTEM	F31	O.F.A. - REGULAR FUNDS
GFEV	GEN. FUND EVEHICLE CHARG. PGM	F21	NH - REGULAR FUNDING
GFNP	NP FEDERAL RELIEF GENERAL FUND	F31	O.F.A. - REGULAR FUNDS
GFSA	GF STPBG ANY AREA	F31	O.F.A. - REGULAR FUNDS
GFSL	GF STPBG <200K<5K (SMALL URB)	F31	O.F.A. - REGULAR FUNDS

GFSN	GF STPBG <5K (RURAL)	F31	O.F.A. - REGULAR FUNDS
GFSU	GF STPBG >200 (URBAN)	F31	O.F.A. - REGULAR FUNDS
GMR	GROWTH MANAGEMENT FOR SIS	N11	100% STATE
GR23	GAA EARMARKS FY2023	N11	100% STATE
GR24	GAA EARMARKS FY2024	N11	100% STATE
GRSC	GROWTH MANAGEMENT FOR SCOP	N11	100% STATE
GRTR	FY2024 SB106 TRAIL NETWORK	N11	100% STATE
HP	FEDERAL HIGHWAY PLANNING	F31	O.F.A. - REGULAR FUNDS
HPP	HIGH PRIORITY PROJECTS	F43	100% FEDERAL DEMO/EARMARK
HR	FEDERAL HIGHWAY RESEARCH	F31	O.F.A. - REGULAR FUNDS
HSP	SAFETY (HIWAY SAFETY PROGRAM)	F21	NH - REGULAR FUNDING
HSPT	SAFETY EDUCATIONAL-TRANSFERRED	F31	O.F.A. - REGULAR FUNDS
LF	LOCAL FUNDS	N44	LOCAL
LFB	LOCAL FUNDS BUDGET	N44	LOCAL
LFBN	LOCAL TO RESERVE BNDS BUDGET	N31	BONDS
LFD	"LF" FOR STTF UTILITY WORK	N11	100% STATE
LFF	LOCAL FUND - FOR MATCHING F/A	N44	LOCAL
LFI	LOCAL FUNDS INTEREST EARNED	N44	LOCAL
LFNE	LOCAL FUNDS NOT IN ESCROW	N44	LOCAL
LFP	LOCAL FUNDS FOR PARTICIPATING	N44	LOCAL
LFR	LOCAL FUNDS/REIMBURSABLE	N44	LOCAL
LFRF	LOCAL FUND REIMBURSABLE-FUTURE	N44	LOCAL
LFU	LOCAL FUNDS_FOR UNFORSEEN WORK	N11	100% STATE
MCOR	MULTI-USE COR S.338.2278,F.S.	N11	100% STATE
MFF	MOVING FLORIDA FOWARD	N11	100% STATE
NFP	NATIONAL FREIGHT PROGRAM	F21	NH - REGULAR FUNDING
NFPD	NAT FREIGHT PGM-DISCRETIONARY	F31	O.F.A. - REGULAR FUNDS
NH	PRINCIPAL ARTERIALS	F21	NH - REGULAR FUNDING
NHBR	NATIONAL HIGWAYS BRIDGES	F21	NH - REGULAR FUNDING
NHPP	IM, BRDG REPL, NATNL HWY-MAP21	F21	NH - REGULAR FUNDING
NHRE	NAT HWY PERFORM - RESURFACING	F21	NH - REGULAR FUNDING
NHTS	NATIONAL HWY TRAFFIC SAFETY	F49	100% FEDERAL NON-FHWA
NSTP	NEW STARTS TRANSIT PROGRAM	N11	100% STATE
NSWR	2015 SB2514A-NEW STARTS TRANST	N11	100% STATE

PKBD	TURNPIKE MASTER BOND FUND	N21	TURNPIKE CAPITAL IMPROVEMENT
PKED	2012 SB1998-TURNPIKE FEEDER RD	N11	100% STATE
PKER	TPK MAINTENANCE RESERVE-ER	N24	TURNPIKE EMERGENCY
PKLF	LOCAL SUPPORT FOR TURNPIKE	N45	LOCAL - TURNPIKE
PKM1	TURNPIKE TOLL MAINTENANCE	N21	TURNPIKE CAPITAL IMPROVEMENT
PKOH	TURNPIKE INDIRECT COSTS	N21	TURNPIKE CAPITAL IMPROVEMENT
PKYI	TURNPIKE IMPROVEMENT	N21	TURNPIKE CAPITAL IMPROVEMENT
PKYO	TURNPIKE TOLL COLLECTION/OPER.	N22	TURNPIKE OPERATIONS
PKYR	TURNPIKE RENEWAL & REPLACEMENT	N21	TURNPIKE CAPITAL IMPROVEMENT
PL	METRO PLAN (85% FA; 15% OTHER)	F41	100% FEDERAL FUNDS
PLH	PUBLIC LANDS HIGHWAY	F41	100% FEDERAL FUNDS
PLHD	PUBLIC LANDS HIGHWAY DISCR	F43	100% FEDERAL DEMO/EARMARK
POED	2012 SB1998-SEAPORT INVESTMENT	N11	100% STATE
PORB	PORT FUNDS RETURNED FROM BONDS	N11	100% STATE
PORT	SEAPORTS	N11	100% STATE
PROT	PROTECT GRANT PROGRAM	F21	NH - REGULAR FUNDING
RBRP	REIMBURSABLE BRP FUNDS	N11	100% STATE
RECT	RECREATIONAL TRAILS	F31	O.F.A. - REGULAR FUNDS
RED	REDISTR. OF FA (SEC 1102F)	F31	O.F.A. - REGULAR FUNDS
REPE	REPURPOSED FEDERAL EARMARKS	F43	100% FEDERAL DEMO/EARMARK
RHH	RAIL HIGHWAY X-INGS - HAZARD	F31	O.F.A. - REGULAR FUNDS
RHP	RAIL HIGHWAY X-INGS - PROT DEV	F31	O.F.A. - REGULAR FUNDS
ROWR	ROW LEASE REVENUES	N11	100% STATE
S117	STP EARMARKS - 2005	F43	100% FEDERAL DEMO/EARMARK
SA	STP, ANY AREA	F31	O.F.A. - REGULAR FUNDS
SABR	STP, BRIDGES	F21	NH - REGULAR FUNDING
SAFE	SECURE AIRPORTS FOR FL ECONOMY	N11	100% STATE
SCED	2012 SB1998-SMALL CO OUTREACH	N11	100% STATE
SCHR	SCOP - HURRICANES	N11	100% STATE
SCMC	SCOP M-CORR S.338.2278,F.S.	N11	100% STATE
SCOP	SMALL COUNTY OUTREACH PROGRAM	N12	100% STATE - SINGLE AUDIT ACT
SCRA	SMALL COUNTY RESURFACING	N12	100% STATE - SINGLE AUDIT ACT
SCRC	SCOP FOR RURAL COMMUNITIES	N11	100% STATE
SCWR	2015 SB2514A-SMALL CO OUTREACH	N12	100% STATE - SINGLE AUDIT ACT

SE	STP, ENHANCEMENT	F31	O.F.A. - REGULAR FUNDS
SIB1	STATE INFRASTRUCTURE BANK	N48	OTHER SIB FUNDS
SIBF	FEDERAL FUNDED SIB	F49	100% FEDERAL NON-FHWA
SIWR	2015 SB2514A-STRATEGIC INT SYS	N11	100% STATE
SL	STP, AREAS <= 200K	F31	O.F.A. - REGULAR FUNDS
SM	STBG AREA POP. W/ 5K TO 49,999	F31	O.F.A. - REGULAR FUNDS
SN	STP, MANDATORY NON-URBAN <= 5K	F31	O.F.A. - REGULAR FUNDS
SPN	PROCEED FROM SPONSOR AGREEMENT	N11	100% STATE
SR2S	SAFE ROUTES - INFRASTRUCTURE	F31	O.F.A. - REGULAR FUNDS
SR2T	SAFE ROUTES - TRANSFER	F31	O.F.A. - REGULAR FUNDS
SROM	SUNRAIL REVENUES FOR O AND M	N49	OTHER NON-FEDERAL FUNDS
SSM	FED SUPPORT SERVICES/MINORITY	F41	100% FEDERAL FUNDS
ST10	STP EARMARKS - 2010	F43	100% FEDERAL DEMO/EARMARK
STED	2012 SB1998-STRATEGIC ECON COR	N11	100% STATE
SU	STP, URBAN AREAS > 200K	F31	O.F.A. - REGULAR FUNDS
TALL	TRANSPORTATION ALTS- <200K	F31	O.F.A. - REGULAR FUNDS
TALM	TAP AREA POP. 5K TO 50,000	F31	O.F.A. - REGULAR FUNDS
TALN	TRANSPORTATION ALTS- < 5K	F31	O.F.A. - REGULAR FUNDS
TALT	TRANSPORTATION ALTS- ANY AREA	F31	O.F.A. - REGULAR FUNDS
TALU	TRANSPORTATION ALTS- >200K	F31	O.F.A. - REGULAR FUNDS
TCP	FUEL TAX COMPLIANCE PROJECT	F41	100% FEDERAL FUNDS
TD24	TD COMMISSION EARMARKS FY 2024	N11	100% STATE
TDDR	TRANS DISADV - DDR USE	N49	OTHER NON-FEDERAL FUNDS
TDED	TRANS DISADV TRUST FUND - $10M	N49	OTHER NON-FEDERAL FUNDS
TDPD	TD PAYROLL REDIST D FUNDS	N11	100% STATE
TDTF	TRANS DISADV - TRUST FUND	N49	OTHER NON-FEDERAL FUNDS
TGR	TIGER/BUILD GRANT THROUGH FHWA	F43	100% FEDERAL DEMO/EARMARK
TIGR	TIGER/BUILD HIGHWAY GRANT	F49	100% FEDERAL NON-FHWA
TLWR	2015 SB2514A-TRAIL NETWORK	N11	100% STATE
TM01	SUNSHINE SKYWAY	N43	TOLL MAINTENANCE
TM02	EVERGLADES PARKWAY	N43	TOLL MAINTENANCE
TM03	PINELLAS BAYWAY	N43	TOLL MAINTENANCE
TM06	TAMPA-HILLSBOROUGH EXPR. AUTH.	N43	TOLL MAINTENANCE
TM07	MID-BAY BRIDGE AUTHORITY	N43	TOLL MAINTENANCE

TM11	ORLANDO-ORANGE CO. EXPR. SYSTE	N43	TOLL MAINTENANCE
TMBC	GARCON POINT BRIDGE	N43	TOLL MAINTENANCE
TMBD	I-95 EXPRESS LANES	N43	TOLL MAINTENANCE
TMBG	I-75 ML TOLL MAINTENANCE	N43	TOLL MAINTENANCE
TMBI	PALMETTO ML TOLL MAINTENANCE	N43	TOLL MAINTENANCE
TMBJ	I-295 EXPRESS LANES - MAINT	N43	TOLL MAINTENANCE
TMBK	TAMPA BAY EXPRESS LANES-MAINT	N43	TOLL MAINTENANCE
TMBW	WEKIVA PARKWAY TOLL MAINT	N43	TOLL MAINTENANCE
TO01	SUNSHINE SKYWAY	N42	TOLL OPERATIONS
TO02	EVERGLADES PARKWAY	N42	TOLL OPERATIONS
TO03	PINELLAS BAYWAY	N42	TOLL OPERATIONS
TO04	MIAMI-DADE EXPRESSWAY AUTH.	N42	TOLL OPERATIONS
TO06	TAMPA-HILLSBOROUGH EXPR. AUTH.	N42	TOLL OPERATIONS
TO07	MID-BAY BRIDGE AUTHORITY	N42	TOLL OPERATIONS
TO11	ORLANDO-ORANGE CO. EXPR. SYST.	N42	TOLL OPERATIONS
TOBC	GARCON POINT BRIDGE	N42	TOLL OPERATIONS
TOBD	I-95 EXPRESS LANES	N42	TOLL OPERATIONS
TOBF	I-595	N42	TOLL OPERATIONS
TOBG	I-75 ML TOLL OPERATIONS	N42	TOLL OPERATIONS
TOBH	I-4 ML TOLL OPERATIONS	N42	TOLL OPERATIONS
TOBI	PALMETTO ML TOLL OPERATIONS	N42	TOLL OPERATIONS
TOBJ	I-295 EXPRESS LANES-OPERATING	N42	TOLL OPERATIONS
TOBK	TAMPA BAY EXP LANES OPERATING	N42	TOLL OPERATIONS
TOBW	WEKIVA PARKWAY TOLL OPERATIONS	N42	TOLL OPERATIONS
TRIP	TRANS REGIONAL INCENTIVE PROGM	N12	100% STATE - SINGLE AUDIT ACT
TRWR	2015 SB2514A-TRAN REG INCT PRG	N12	100% STATE - SINGLE AUDIT ACT
TSM	TRANSPORT SYSTEMS MANAGEMENT	F41	100% FEDERAL FUNDS

EXECUTIVE SUMMARY

The Collier MPO Transportation Improvement Program (TIP) is the federally mandated, collaboratively developed, five-year program of surface transportation projects that will receive federal funding or are subject to federal review or action within the Collier Metropolitan Planning Area (MPA). (Figures 1 & 2 on following pages) The Collier MPA encompasses all of Collier County, and the Cities of Naples, Everglades City, and Marco Island. The Collier MPO is the federally designated Metropolitan Planning Organization (MPO) for the Collier MPA and is the body designated by federal and state statutes to develop and administer the TIP. The TIP is updated annually, and all projects in the TIP must be consistent with the Collier MPO Long Range Transportation Plan (LRTP).

The TIP represents the transportation improvement priorities for the Collier MPO planning area and is financially constrained. This means that each project programmed in the TIP has been vetted by the MPO, Florida Department of Transportation (FDOT), Federal Highway Administration (FHWA), Federal Transit Administration (FTA), and local partners to address the planning area's transportation needs and provides sufficient financial information to demonstrate that the projects can be funded as programmed. Only projects with funds that are reasonably expected to be available may be programmed in the TIP. The TIP is subject to approval by FDOT, FHWA, and FTA, and may be periodically amended or modified to reflect changes to a project's scope, schedule, and/or cost, or to add a new or remove an existing project. In addition to federal and FDOT approvals, the TIP is also reviewed by the Florida Department of Economic Opportunity (DEO) to ensure the projects programmed in the TIP are consistent with local government comprehensive plans.

The Collier MPO's TIP has been developed with input and assistance from FDOT, FHWA, FTA, elected officials, municipal staff, and the public. Projects identified in the TIP are prioritized by the MPO and its partners to implement, support, and enhance regional mobility, and improve the safety, condition, and efficiency of the region's transportation system. The TIP includes projects for all transportation modes including roadways, bicycle and pedestrian, transit, and aviation. Development of the TIP includes input from all transportation system users, including those traditionally underserved by existing transportation systems who may face challenges accessing employment and other services.

Figure 1: Collier Metropolitan Planning Area (MPA)

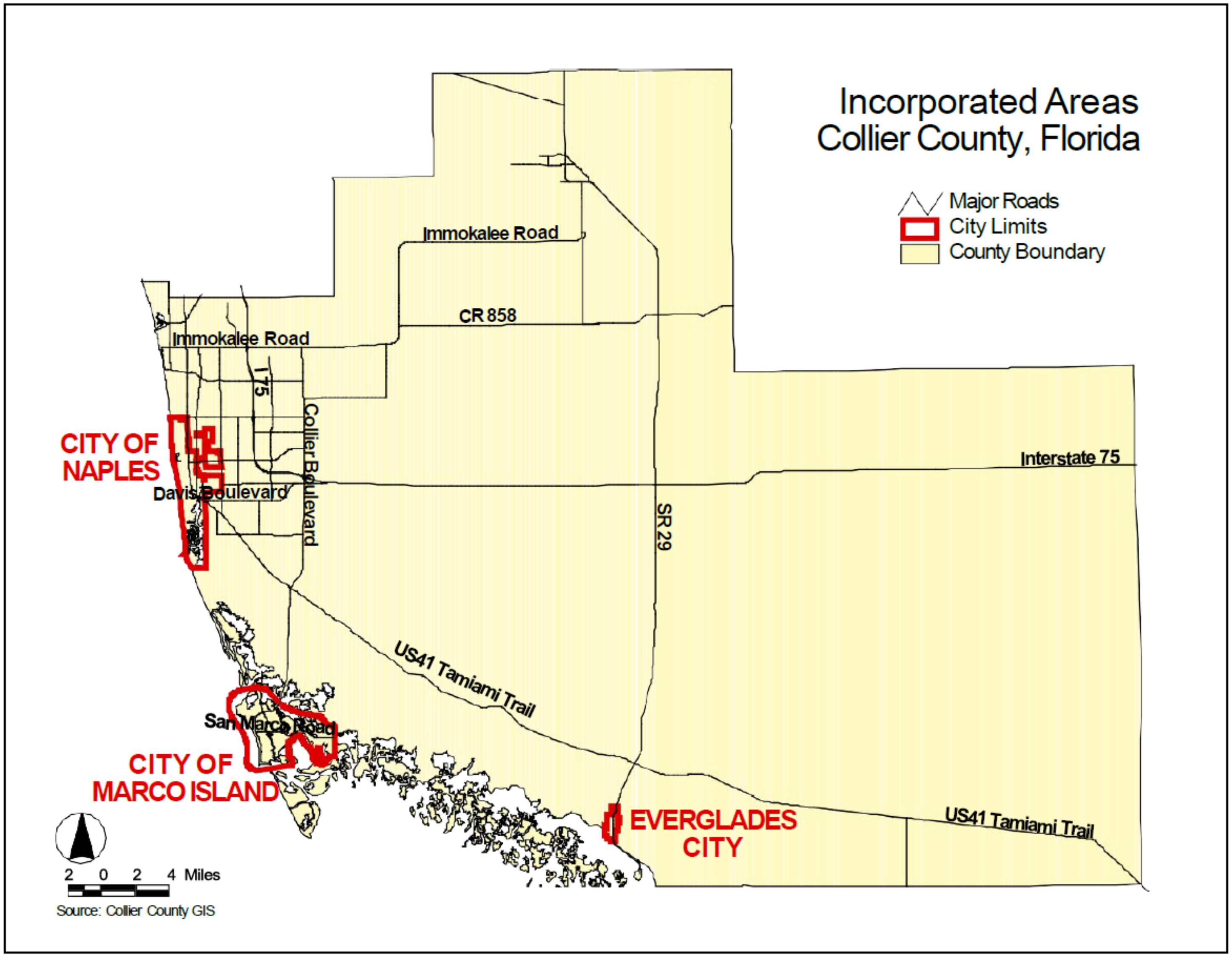
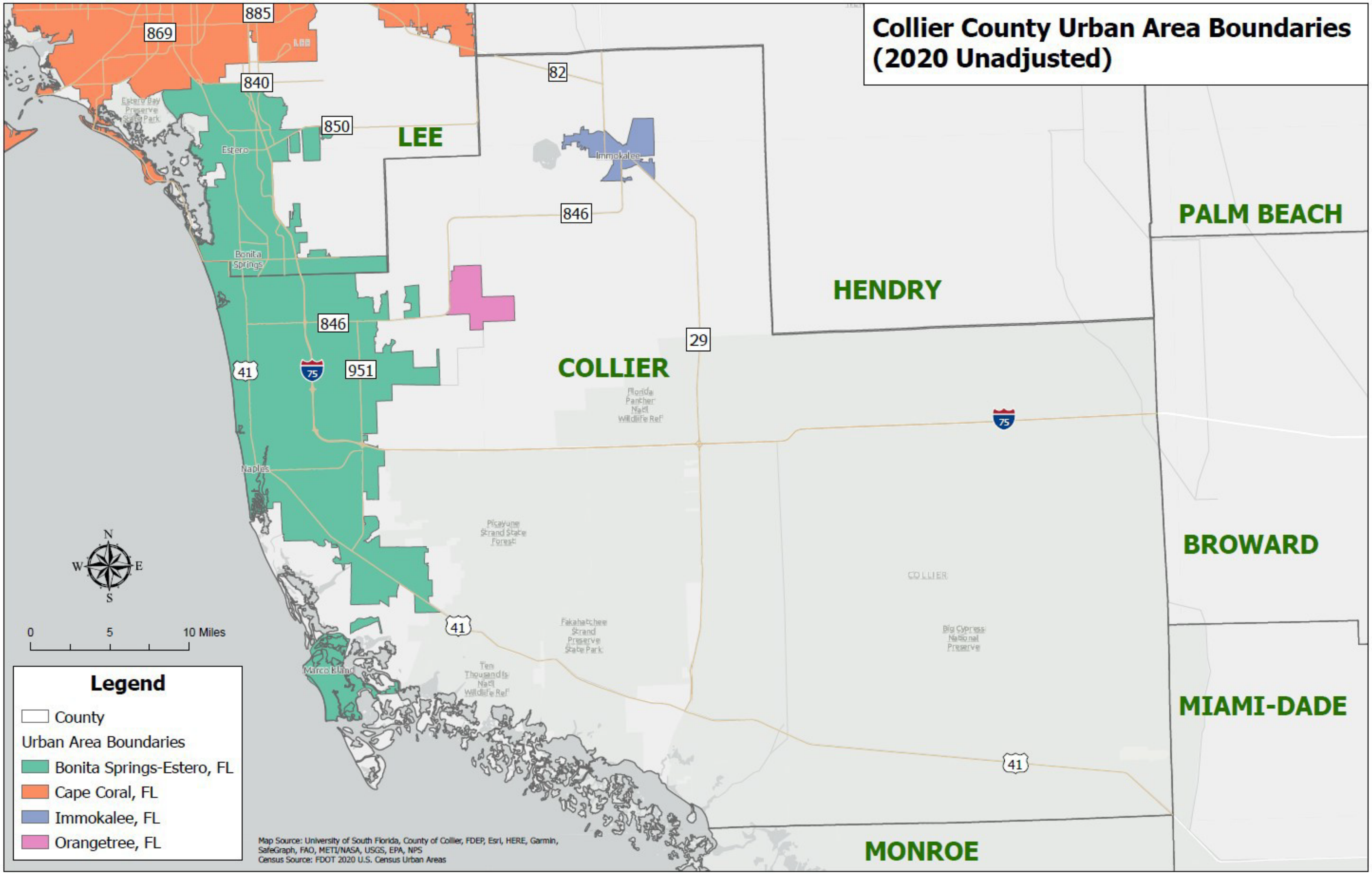


Figure 2: Bonita Springs – Estero Urbanized Area Map



NARRATIVE

PURPOSE

The Collier Metropolitan Planning Organization (MPO) is required by Federal and State Statutes[1]; and Federal Transportation Legislation, Moving Ahead for Progress in the Twenty-First Century Act (MAP-21) and the Fixing America's Surface Transportation Act (FAST Act) signed into law in December 2015, to develop a Transportation Improvement Program (TIP) that is approved by both the MPO and the Governor of Florida (or the Governor's delegate). The FAST Act (23 U.S.C. 133(h) §1109) carries forward policies initiated by MAP-21, which created a streamlined and performance-based surface transportation program that builds on many of the highway, transit, bike, and pedestrian programs and policies established in previous transportation legislation. These programs address the many challenges facing the U.S. transportation system including improving safety, maintaining infrastructure condition, reducing traffic congestion, improving efficiency of the system and of freight movement, protecting the environment, and reducing delays in project delivery. The FAST Act added reducing or mitigating storm water impacts of surface transportation, and enhancing travel and tourism to the nationwide transportation goals identified in MAP-21.The FAST Act establishes the Nationally Significant Freight and Highway Projects (NSFHP) program to provide competitive grants – Fostering Advancement in Shipping and Transportation for the Long-term Achievement of National Efficiencies (FASTLANE) – to nationally and regionally significant freight and highway projects that align with national transportation goals.

In November 2021 the Infrastructure Investment and Jobs Act (IIJA), commonly referred to as the Bipartisan Infrastructure Law (BIL), was signed into law. (Public Law 117-58). This legislation carries forward the policies, programs and initiatives established by preceding legislation and addresses new and emerging issues that face the nation's transportation system. These issues include mitigating impacts to existing infrastructure due to climate change, developing and maintaining system resiliency, ensuring equity, researching and deploying new technologies, and improving safety for all users. Project eligibility and flexibility have been added to existing programs such as the Surface Transportation Block Grant Program (STBG) and the Highway Safety Improvement Program (HSIP). For example, the STBG program project eligibility has been expanded to include electric vehicle charging infrastructure and the HSIP has been expanded to introduce new eligible project types to calm traffic and reduce vehicle speeds to improve pedestrian and bicycle safety. The legislation also introduced new competitive grant programs that require further guidance from federal and state governments before they are put into effect.

[1] 23 United States Code (U.S.C.) 134(j) and (k)(3) and (4); 23 U.S.C. 204; 49 U.S.C. 5303; 23 Code of Federal Regulations Part 450 Sections 326, 328, 330, 332 and 334; and Florida Statutes (F.S.) s.339.175, s339.135(4)(c) and 4(d), and 427.015(1)

The TIP is developed by the MPO in cooperation with the Florida Department of Transportation (FDOT), state and local governments, and public transit operators who are each responsible for providing the MPO with estimates of available federal and state funds. This collaborative effort ensures that projects programmed in the FDOT Work Program address the MPO's highest transportation project priorities and are consistent with the overall transportation goals of the surrounding metropolitan area. Following approval by the MPO Board and the Governor of Florida, the TIP is included in the FDOT State Transportation Improvement Program (STIP). The TIP is a five-year, fiscally constrained, multi-modal program of transportation projects within the Collier Metropolitan Planning Area (MPA). The MPA is the geographic planning region for the MPO (see Figure 1 above). The projects in the TIP are presented in Year of Expenditure (YOE) dollars which takes inflation into account. TIP projects include highway, transit, sidewalk/bicycle paths and/or facilities, congestion management, road and bridge maintenance, transportation planning, and transportation alternative program activities to be funded (see 23 CFR. 450.326(e). The TIP also includes aviation projects; and all regionally significant transportation projects for which Federal Highway Administration (FHWA) or Federal Transit Administration (FTA) approval is required. (see 23 CFR 450.326(f). For informational purposes, this TIP also identifies other transportation projects that are not funded with federal funds. (see Sec. 339.175 (8)(c) , F.S.).

The TIP for the Collier MPO is fiscally constrained by year so that financial resources can be directed towards high priority transportation needs in the area. Consequently, the level of authorized funding (both current and projected) available to the state and the MPO is used as the basis for financial restraint and scheduling of federally funded projects within the MPO's jurisdiction. FDOT uses the latest project cost estimates, and the latest projected revenues based on a district-wide statutory formula to implement projects within the Collier MPO in the Work Program, and this is reflected in the TIP as well. The TIP is also constrained due to local funds from local governments' Capital Improvement Programs committed to certain projects in the TIP. This TIP has been developed in cooperation with the FDOT. FDOT provided the MPO with estimates of available federal and state funds are shown in Appendix G – Fiscal Constraint.

The TIP is updated annually by adding a "new fifth year" which maintains a five-year rolling time frame for the TIP. In addition to carrying forward existing projects, the MPO annually approves a new List of Project Priorities (LOPP) and submits these to FDOT prior to July 1st. This new set of priorities is drawn from the Collier 2045 Long Range Transportation Plan (LRTP). Projects are selected based on their potential to improve transportation safety and/or performance; increase capacity or relieve congestion; and preserve existing infrastructure. FDOT uses, in part, the MPO's priorities in developing the new fifth year of the FDOT Five-Year Work Program which is also a rolling five-year program. The MPO's LRTP and TIP are developed with consideration of the ten planning factors from MAP-21 and the FAST Act which are listed below.

Planning Factors

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
2. Increase the safety of the transportation system for motorized and non-motorized users.
3. Increase the security of the transportation system for the motorized and non-motorized users.
4. Increase the accessibility and mobility of people and for freight.
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
7. Promote efficient system management and operation.
8. Emphasize the preservation of the existing transportation system.
9. Reduce or mitigate storm water impacts of surface transportation.
10. Enhance travel and tourism.

FUNDING SUMMARY

The projects identified in this TIP are funded with Federal, State, and local revenues as shown in the FDOT Fiscal Year (FY) 2026- 2030 Work Program approved by the State Legislature. The tables and charts below compare funding amounts from year to year and by project type. The total funding fluctuates from one TIP to the next and from one fiscal year to another based on the phases that projects are in, and the size and number of projects programmed in that year. (See Figure 4 on the following page.)

Total funding for the current TIP, based on the FDOT download files for the Draft Tentative Work Program dated 11/14/24, is roughly $683 million. The major funding source is State (53%), followed by Federal (39%), and Collier County (8%), as shown in Figure 5 on the following page. Major investment categories are shown as percentages in Figure 6. The largest percentage (69%) is attributable to Highway Capacity Enhancements, due to the State's investment in the Governor's Moving Florida Forward Initiative. Investment in Multimodal projects are 21% and Maintenance and Operations are 9%.

Figure 4: Total Initial Funding Amounts, Last 5 TIPs

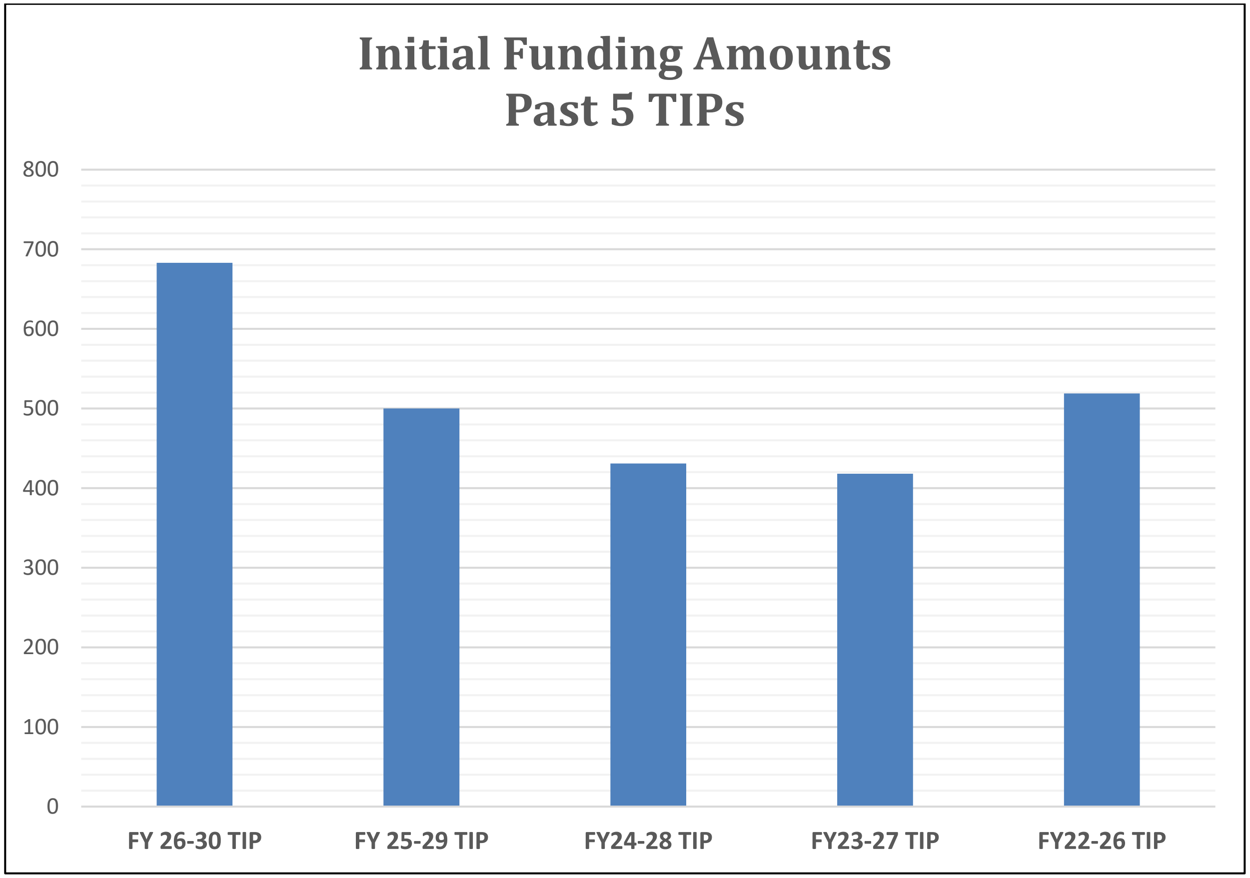


Figure 5: Funding Sources

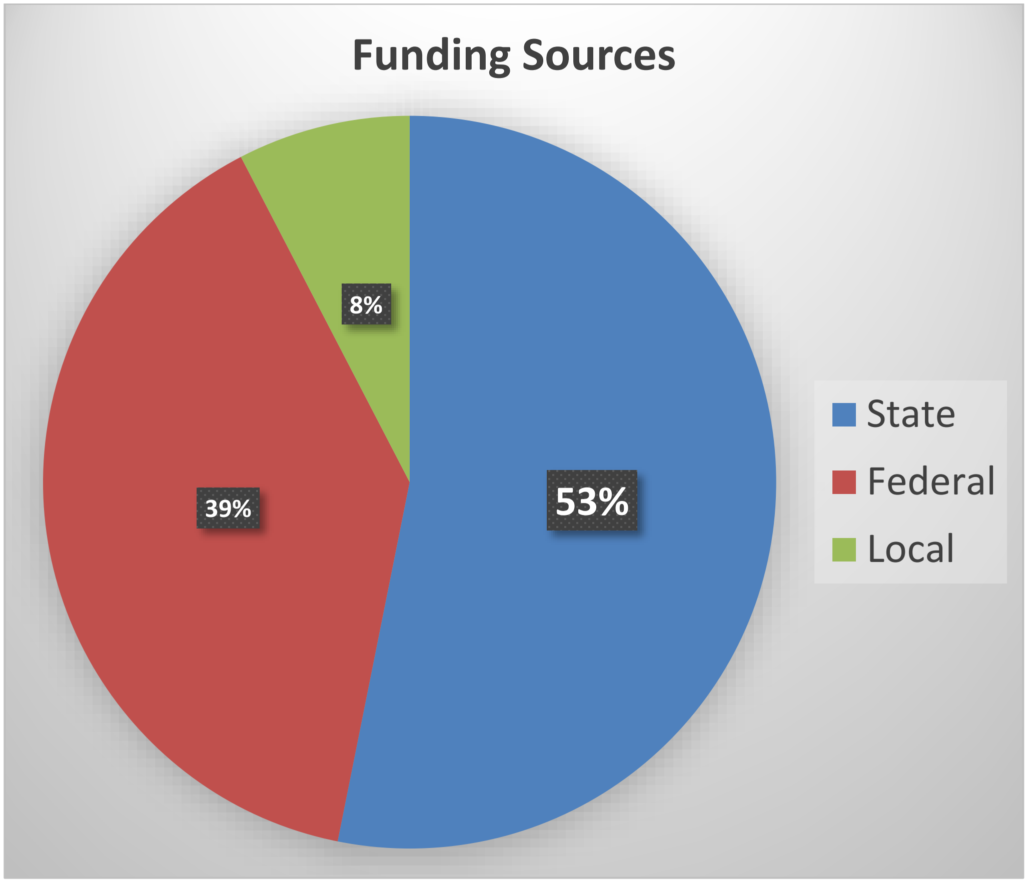
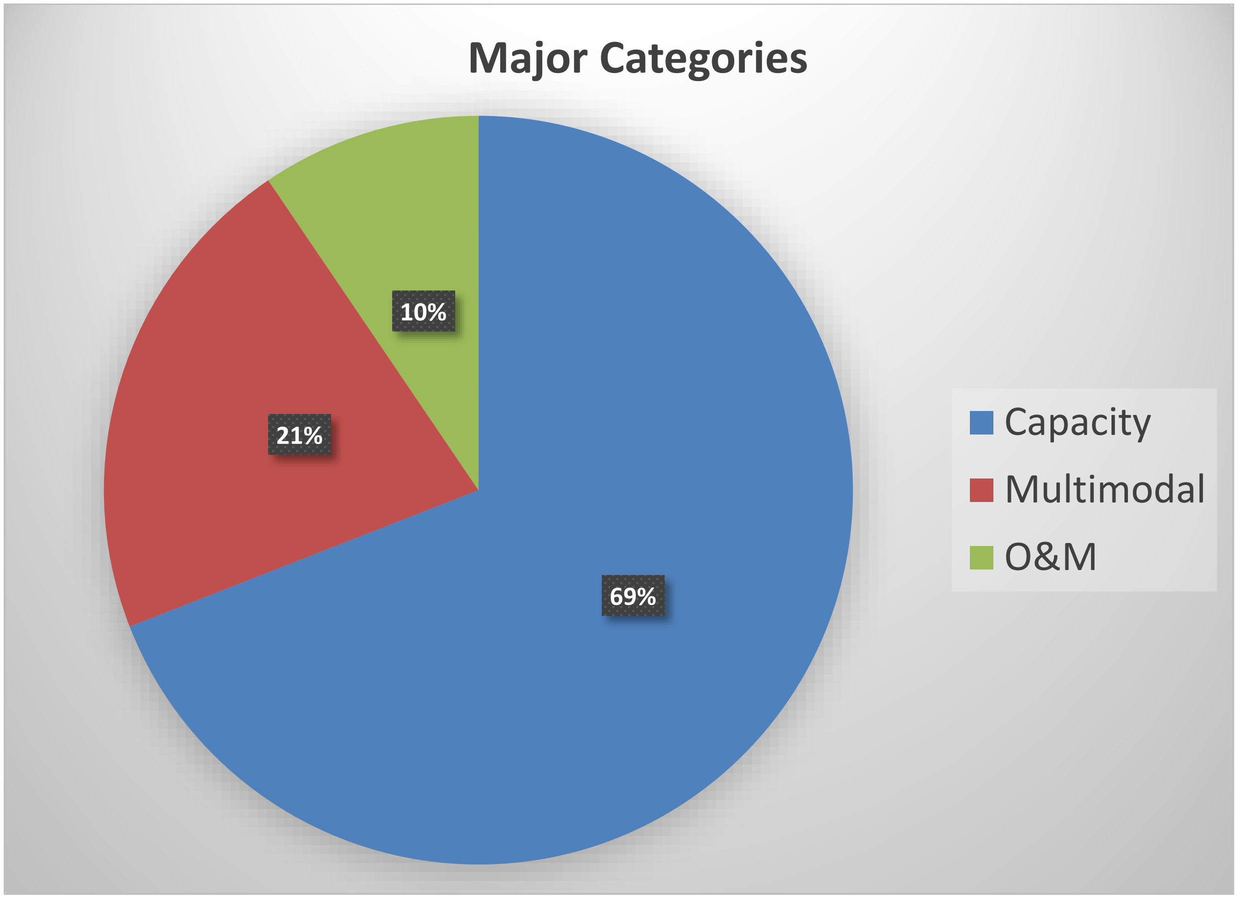


Figure 6: Percent Funding by Major Category



HIGHWAY FUNDING SOURCES

The following highlights the primary federal and state funding sources used to support MPO planning activities; the design and construction of transportation projects; and facilitation of transit operations and capital acquisitions.

Federal (FHWA)

Surface Transportation Block Group Program (STBGP): The STBGP provides legislatively specified flexible funding that may be used by states and localities for projects on any Federal-aid eligible highway including the National Highway System (NHS), bridge projects on any public road, transit capital projects, and intra-city and inter-city bus terminals and facilities. These flexible funds are not based on a restrictive definition of program eligibility and allow local areas to choose local planning priorities. There are also flexible FTA Urban Formula Funds. STBGP funds can be used to increase capacity, improve safety, relieve congestion and enhance transportation systems. The level of STBGP funding is determined by a formula. STBGP-Urban (SU) funds are allocated to MPOs with over 200,000 population, such as Collier MPO. Such MPOs are referred to as Transportation Management Areas (TMA).

Transportation Alternatives Program (TAP): The TAP was established by MAP-21 as a new funding program and is currently set aside from the STBGP (23 U.S.C. 133(h). Eligible activities include Transportation Alternatives (TA) as defined in 23 U.S.C. 133 (h) and MAP-21 §1103. TA funds are primarily used for the construction, planning and design of bicycle and pedestrian facilities, traffic calming techniques, compliance with the Americans with Disabilities Act of 1990 [42 U.S.C. 1201 et seq.], environmental mitigation activities, the Recreational Trails Program (RTP) under 23 U.S.C. 206, and Safe Routes to School under 23 U.S.C. 208. TA funds cannot be used for routine maintenance and operations.

Highway Safety Improvement Program (HSIP): HSIP funds highway safety improvements and may be used to fund any identified highway safety improvement project on any public road or publicly owned bicycle or pedestrian pathway or trail; or any project to maintain minimum levels of retro reflectivity with respect to a public road without regard to whether the project is included in an applicable State strategic highway safety plan. Terms, including “highway safety improvement project” are defined in 23 U.S.C. 148.

Metropolitan Planning Program (PL): FHWA allocates funding for this program to FDOT, which in turn allocates funds by formula to MPOs to carry out the metropolitan transportation planning process required by 23 U.S.C. 134, including development of the Unified Planning Work Program (UPWP), the Long Range Transportation Plan (LRTP), the Transportation Improvement Program (TIP) and other planning documents.

State (FDOT)

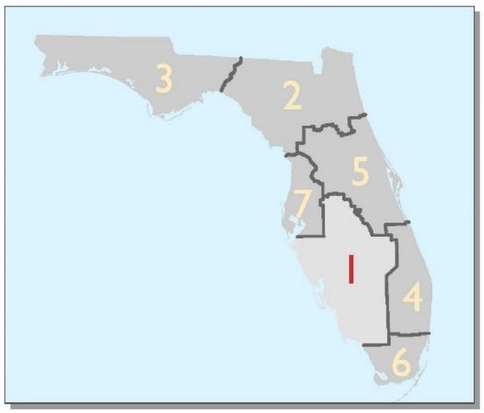
Strategic Intermodal System (SIS): Created in 2003, the SIS is a high priority network of transportation facilities critical to Florida's economic competitiveness and quality of life. The SIS, shown in Figure 8 on the following page, includes the State's largest and most significant highways, commercial service airports, spaceports, waterways and deep-water seaports, rail corridors, freight rail terminals, and passenger rail and intercity bus terminals.

I-75, State Route 29 and State Route 82 are identified as SIS facilities. FDOT programs SIS funds through the development of the Strategic Intermodal System Funding Strategy (Appendix A). See Figure 8 on the following page.

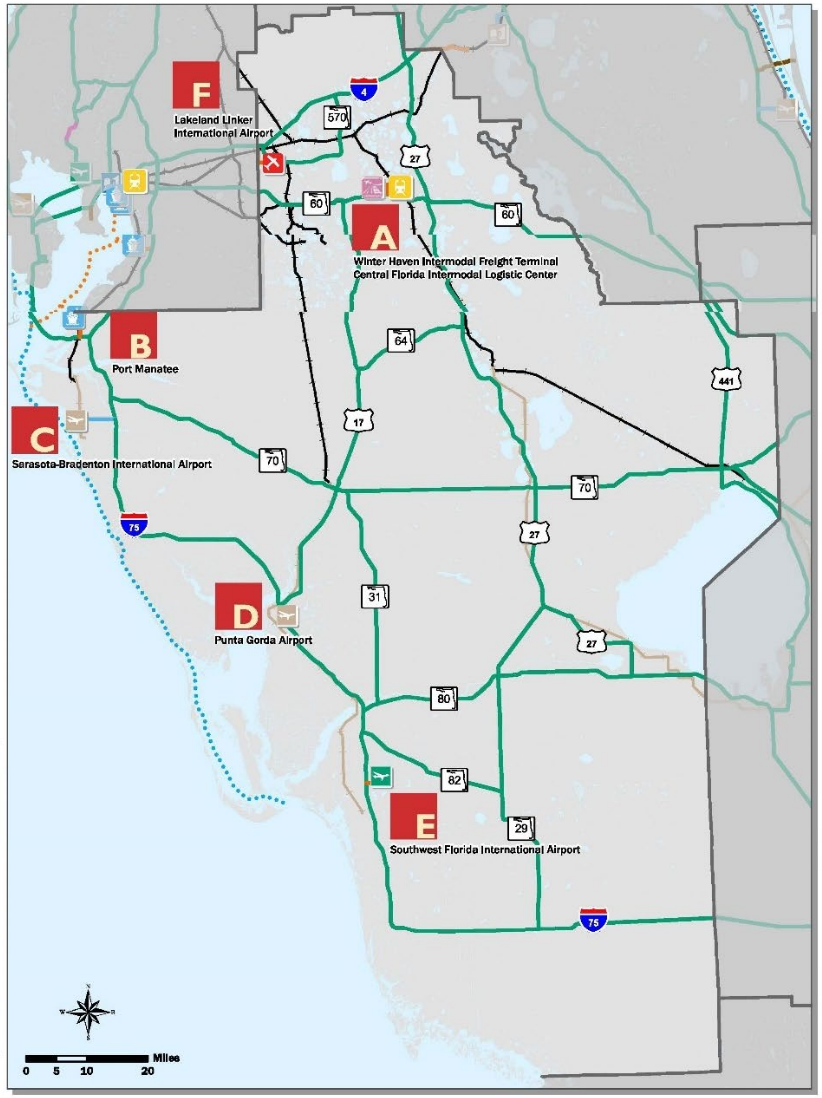
Moving Florida Forward Infrastructure Initiative (MFF): During the 2023 Legislative Session, Governor DeSantis proposed, and the Florida Legislature then passed the *Moving Florida Forward Infrastructure Initiative*. As part of the initiative, FDOT identified a selection of critical needs on state-owned roadways. Additionally, FDOT identified previously approved projects with broad community support that only lacked funding to begin construction. The Legislature dedicated $4 billion from the General Revenue Surplus to the *Moving Florida Forward Infrastructure Initiative* to advance construction on these projects around the state that will address congestion, improve safety, ensure the resiliency of our transportation network, and enhance Florida's supply chain and economic growth. The funds are allocated to projects under Funding Code FINC (Financing Corp) in the FY25-29 TIP.

Figure 8: SIS District 1 Overview

DISTRICT I
overview



DESIGNATED SIS AND STRATEGIC GROWTH FACILITIES						
Facility Type	Active and Planned Drop Facilities					Future Facility
	Corridor / Hub		Connector		Military Access Facility	
	SIS	Strategic Growth	SIS	Strategic Growth		
Commercial Service Airport	1	2	-	-	-	-
GAR Airport	1	-				
Seaports	1	-	-	-	-	-
Freight Terminals	1	-	-	-	-	-
Intermodal Logistic Centers	-	1	-	-	-	-
Rail Miles	250	155	1	-	-	-
Highway Miles (Centerline)	882	-	7	8	-	-



Florida Department of Transportation
Strategic Intermodal System

Transportation Regional Incentive Program (TRIP): The TRIP was created pursuant to § 339.2819 and §339.155 Florida Statutes to provide an incentive for regional cooperation to leverage investments in regionally significant transportation facilities including both roads and public transportation. TRIP funds provide state matching funds for improvements identified and prioritized by regional partners which meet certain criteria. TRIP funds are used to match local or regional funds by providing up to 50% of the total project cost for public transportation projects. In-kind matches such as right-of-way donations and private funds made available to the regional partners are also allowed. The Collier MPO and Lee County MPO Boards jointly adopt regional priorities to access TRIP funds. Regionally significant projects are projects that are located on the Lee County/Collier MPO Joint Regional Roadway Network (see Appendix B). FDOT may program State dedicated revenues to fund prioritized regionally significant projects.

Local

Local Funds: Local Funds are programmed when a portion of a project's funding is being provided from a local or third-party source. This source could be a city, a county, an expressway authority, etc. Local funds may be used for all program areas and may be required for some federal and state programs. For example, projects funded under the Transportation Regional Incentive Program and County Incentive Grant Program require up to a 50% local match. Projects funded with federal aid that are off-system - off the state highway system (SHS) - also require up to a 50% local match. Please refer to Individual program areas for these requirements.

TRANSIT FUNDING SOURCES

FDOT and the FTA both provide funding opportunities for transit and transportation disadvantaged projects through specialized programs. In addition, FHWA transfers funds to FTA which provide substantial additional funding for transit and transportation disadvantaged projects. When FHWA funds are transferred to FTA, they are transferred to FTA Urbanized Area Formula Program (§5307). According to FTA Circular 9070.1G, at a State's discretion Surface Transportation funds may be "flexed" for transit capital projects through the Non-Urbanized Area Formula Program (§5311), and according to FTA Circular 9040.1G with certain FHWA funds to Elderly and Persons with Disabilities Program (§5310). In urbanized areas over 200,000 in population, the decision on the transfer of flexible funds is made by the MPO. In areas under 200,000 in population, the decision is made by the MPO in cooperation with FDOT. In rural areas, the transfer decision is made by FDOT. The decision to transfer funds flows from the transportation planning process and established priorities.

§5305: Metropolitan Transportation Planning Program Funds: State Departments of Transportation sub-allocate §5305 formula-based program funding to MPOs including the Collier MPO. The program provides funding to support cooperative, continuous, and comprehensive planning for making transportation investment decisions in metropolitan areas as well as statewide. Funds are available for planning activities that (a) support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency; (b) increase the safety and security of the transportation system for motorized and non-motorized users; (c) increase the accessibility and mobility of people and freight; (d) protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns; (e) enhance the integration and connectivity of the transportation system for people and freight across and between modes; (f) promote efficient system management and operation; and (g) emphasize preservation of the existing transportation system.

FDOT and the MPOs began participation in the Consolidated Planning Grant (CPG) program, starting in FY 2023. This program merges FTA 5305(d) Metropolitan Planning funds with FHWA Planning (PL) funds. The consolidated funds are administered by FHWA and are considered to be FHWA PL funds. The CPG streamlines the delivery of MPO funds, provides the MPO greater flexibility to use their planning funds and reduces the number of grants being administered by the MPO. The MPO's Unified Planning Work Program is still expending 4305(d) funds from prior fiscal years that are subject to FTA oversight.

§5307 - Urbanized Area (UZA) Formula Program Funds: The Bonita Springs (Naples) FL UZA receives an annual allocation of § 5307 funding which may be used for: (a) transit capital and operating assistance in urbanized areas; (b) transportation-related planning; (c) planning, engineering, design and evaluation of transit projects; and (d) other technical transportation-related studies. Eligible capital investments include: (a) replacement, overhaul and rebuilding of buses; (b) crime prevention and security equipment; (c) construction of maintenance and passenger facilities; (d) new and existing fixed guide-way systems including rolling stock and rail stations; and (e) overhaul and rebuilding of vehicles, track, signals, communications, and computer hardware and software. All preventive maintenance and some Americans with Disabilities Act (ADA) complementary paratransit service costs are considered eligible capital costs. MAP-21 amended this program to include expanded eligibility for operating expenses for systems with 100 or fewer buses. Collier County receives at least $2 million dollars each year to assist in transit capital expenses. Local/State matches for §5307 consist of toll revenue credits issued by FDOT and local funds which follow FTA match guidelines. For urbanized areas with populations greater than 200,000, including Collier County, funds are apportioned and flow directly to a locally selected designated recipient. Collier County is the designated recipient for the urbanized area §5307 funding.

<u>§5310 – Transportation for Elderly Persons and Persons with Disabilities</u>: The Federal goal of the §5310 program is to provide assistance in meeting the needs of elderly persons and persons with disabilities where public transit services are unavailable, insufficient or inappropriate. Funds are apportioned based on each state's population share of these groups of people. Eligible activities for §5310 funding include: (a) services developed that are beyond what is required by the Americans with Disabilities Act; (b) projects that will improve access to fixed route service and/or decrease reliance by individuals with disabilities on complementary paratransit; and (c) projects that provide an alternative to public transportation that assists seniors and individuals with disabilities.

MAP-21 apportions these funds to designated recipients based on a formula. In Florida, the §5310 Program is administered by FDOT on behalf of FTA with funding allocated to the Bonita Springs (Naples) Urbanized Area. Projects selected must be included in a locally developed, coordinated public transit human services transportation plan. FDOT calls for § 5310 applications annually and awards funds through a competitive process.

<u>§ 5311 - Rural Area Formula Grant</u>: This program (49 U.S.C. 5311) provides formula funding to states to support public transportation in areas with populations less than 50,000. Program funds are apportioned to each state based on a formula that uses land area, population, and transit service. According to Federal program rules, program funds may be used for capital operating, state administration, and project administration expenses; however, Florida allows eligible capital and operating expenses.

In Florida, the §5311 Program is administered by FDOT. Program funds are distributed to each FDOT district office based on its percentage of the state's rural population. Each district office allocates program funds to designated eligible recipients through an annual grant application process. §5311 funds in Collier County are used to provide fixed route service to rural areas such as Immokalee and Golden Gate Estates.

<u>§5339 – Bus and Bus Facilities Funds</u>: This program makes federal resources available to state and direct recipients to replace, rehabilitate and purchase buses and related equipment, and to construct bus-related facilities including technological changes or innovations to modify low or no emission vehicles or facilities. Funding is provided through formula allocations and competitive grants. A sub-program provides competitive grants for bus

and bus facility projects that support low and zero-emission vehicles. Eligible recipients include direct recipients that operate fixed-route bus service or that allocate funding to fixed route bus operators; state or local governmental entities; and federally recognized Native American tribes that operate fixed route bus service that are eligible to receive direct grants under §5307 and §5311.

Transportation Disadvantaged Program Funds: Chapter 427, Florida Statutes, established the Florida Commission for the Transportation Disadvantaged (CTD) with the responsibility to coordinate transportation services provided to the transportation disadvantaged through the Florida Coordinated Transportation System. The CTD also administers the Transportation Disadvantaged Trust Fund. Transportation disadvantaged individuals are those who cannot obtain their own transportation due to disability, age, or income.

The Collier MPO, through the Local Coordinating Board (LCB), identifies local service needs and provides information, advice and direction to the Community Transportation Coordinator (CTC) on the coordination of services to be provided to the transportation disadvantaged [Chapter 427, Florida Statutes]. The Collier County Board of County Commissioners (BCC) is designated as the CTC for Collier County and is responsible for ensuring that coordinated transportation services are provided to the transportation disadvantaged population of Collier County.

Public Transit Block Grant Program: The Public Transit Block Grant Program was established by the Florida Legislature to provide a stable source of funding for public transit [341.052 Florida Statutes]. Specific program guidelines are provided in FDOT Procedure Topic Number 725-030-030. Funds are awarded by FDOT to those public transit providers eligible to receive funding from FTA's §5307 and §5311 programs and to CTCs. Public Transit Block Grant funds may be used for eligible capital and operating costs of providing public transit service. Program funds may also be used for transit service development and transit corridor projects. Public Transit Block Grant projects must be consistent with applicable approved local government comprehensive plans.

Public Transit Service Development Program: The Public Transit Service Development Program was enacted by the Florida Legislature to provide initial funding for special projects [341Florida Statutes]. Specific program guidelines are provided in FDOT Procedure Topic Number 725-030-005. The program is selectively applied to determine whether new or innovative techniques or measures could be used to improve or expand public transit services. Service Development Projects specifically include projects involving the use of new technologies for services, routes or vehicle frequencies; the purchase of special transportation services; and other such techniques for increasing service to the riding public. Projects involving the application of new technologies or methods for improving operations, maintenance, and marketing in public transit systems are also eligible for Service Development Program funding. Service Development projects are subject to specified times of duration with a maximum of three years. If determined to be successful, Service Development Projects must be continued by the public transit provider without additional Public Transit Service Development Program Funds.

PROJECT PRIORITY AND PROJECT SELECTION PROCESSES

The method to select projects for inclusion in the TIP depends on whether the metropolitan area has a population of 200,000 or greater. Metropolitan areas with populations greater than 200,000 are called Transportation Management Areas (TMA). The Collier MPO is a TMA. In a TMA, the MPO selects many of the Title 23 and FTA funded projects for implementation in consultation with FDOT and local transit operators. Projects on the National Highway System (NHS) and projects funded under the bridge maintenance and interstate maintenance programs are selected by FDOT in cooperation with the MPO. Federal Lands Highway Program projects are selected by the respective federal agency in cooperation with FDOT and the MPO [23 C.F.R. 450.332(c)]. FDOT coordinates with the MPO to ensure that projects are also consistent with MPO priorities.

Federal and State transportation programs help the Collier MPO complete transportation projects. Many of these projects require multiple phases which must be completed sequentially. Some phases may require multi-year efforts to complete, therefore it is often necessary to prioritize only one or two phases of a project within a TIP with the next phase(s) being included in subsequent TIPs. Project phases may include:

CAP	Capital
CST	Construction
DSB	Design Build
ENV	Environmental
INC	Contract Incentives
MNT	Maintenance
OPS	Operations
PDE	Project Development & Environment (PD&E)
PE	Preliminary Engineering
PLN	Planning

ROW	Right-of-Way
RRU	Railroad & Utilities

All projects in the TIP must be consistent with the Collier MPO 2045 Long Range Transportation Plan (LRTP) approved on December 11, 2020. Projects were included in the LRTP based on their potential to improve the safety and/or performance of a facility; increase capacity or relieve congestion; and preserve existing transportation investments. TIP projects are also consistent, to the extent feasible, with the Capital Improvement Programs and Comprehensive Plans of Collier County, the City of Naples, the City of Marco Island, and the City of Everglades as well as the Master Plans of the Collier County Airport Authority and the Naples Airport Authority. With minor exceptions, projects in the TIP must also be included in the FDOT Five-Year Work Program (WP) and the State Transportation Improvement Program (STIP).

The MPO's 2024 Transportation Project Priorities, for inclusion in the FY2026 – FY2030 TIP, were adopted by the MPO Board as a separate item from the adoption of the FY2025 - FY2029 TIP, on the same day of June 14, 2024. The MPO and FDOT annually update the TIP, FDOT Work Program (WP) and STIP by adding a "new fifth year" which maintains rolling five-year programs. FDOT coordinates this process with the MPO to ensure that projects are consistent with MPO priorities. Each year, the MPO prioritizes projects derived from its adopted LRTP and based on the MPO's annual allocation of SU funds, State Transportation Trust Funds and other funding programs. The MPO's LOPP is formally reviewed by the Technical Advisory Committee (TAC), Citizens Advisory Committee (CAC), Bicycle and Pedestrian Advisory Committee (BPAC), and Congestion Management Committee (CMC), and is approved by the MPO Board before being transmitted to FDOT for funding consideration (see Appendix H for a description of the criteria used for project prioritization). The LOPP includes Highway, Bicycle/Pedestrian, Congestion Management, Safety, Bridge, Transit and Planning projects which are illustrated on the following pages. All projects funded through the FDOT Work Program are included in Part I of this TIP. Table 2 shows the general timeframe for the MPO's establishment of project priorities and the development of the FY2026 – FY2030 TIP.

Safety has always been an important part of the MPO's project prioritization process. Safety criteria are included in the prioritization process for bicycle and pedestrian, congestion management and bridge priorities. Highway and SIS priorities are generated by the Long Range Transportation Plan which emphasizes safety. As the MPO develops new lists of project priorities, the new federal performance measures will be incorporated into the criteria.

Table 2: General Timeframe for FY2025-2029 TIP Process

Mar 2023 - March 2024	MPO solicits candidate projects for potential funding in the new 5th year of FDOT's FY2026 - FY2030 Work Program, aka the MPO's FY 2026-2030 TIP.
June 2024	MPO adopts prioritized list of projects for funding in the MPO FY 2026-2030 Work Program/TIP
Nov 2024 – April 2025	FDOT releases Tentative Five-year Work Program for FY 2026-2030
March – June 2025	MPO produces draft FY –2026-2030 TIP; MPO Board and committees review draft TIP; MPO advisory committees endorse TIP
June 2025	MPO Board adopts FY 2026-2030 TIP which is derived from FDOT's Tentative Five-year Work Program. MPO adopts LOPP for funding in the FY 2027-2031 TIP
July 2025	FDOT's Five-Year Work Program FY 2026-2030 (which includes the MPO TIP) is adopted and goes into effect. (The Statewide Transportation Improvement Program goes into effect October 1, 2025)
September 2025	MPO adopts TIP Amendment for inclusion of Roll Forward Report

2024 HIGHWAY (& FREIGHT) PRIORITIES

Highway priorities submitted in 2024 are consistent with the 2045 LRTP Cost Feasible Plan. The MPO Board approved the Highway priorities list on June 14, 2024 (Table 3 on the following two pages). These were forwarded to FDOT for consideration of future funding.

Table 3 Highway, Freight & Safety Priorities – updated per FY26-30 Draft Tentative Work Program

LRTP MAP ID	Facility	Limit From	Limit To	Final Proposed Improvement - 2045 LRTP	Total Project Cost (PDC)	Construction Time Frame	5-Year Window in which CST is Funded by Source				PROJECT STATUS FY26-30 Draft Tentative Work Program	
							2026-2030 PLAN PERIOD 2			Projects Funded in CFP		
							Phase	Source	YOE Cost	YOE	FPN	Amount
50	SR 29	N of New Market Rd	SR 82	Widen from 2 lanes to 4-lanes (with center turn lane)	$89,502,250	2026-30	CST	SIS	$30,360,000	$30,360,000	417540-6	$57,814,847
							ROW RUU ENV					$1,327,403
23	I-75 (SR93) Interchange	Golden Gate Pkwy		Interchange Improvement	$9,590,000	2026-30	PE	OA	$580,000	$12,820,000		
							CST	OA	$12,240,000			
25	I-75 (SR93) Interchange	Immokalee Rd		Interchange Improvement (DDI Proposed)	$9,590,000	2026-30	PE, ROW	OA	$580,000	$12,820,000	452544-4	$13,700,000
							DB	OA	$12,240,000			$57,328,977
57	US41 (SR90)(Tamiami Trail E)	Goodlette-Frank Rd		Major Intersection Improvement	$13,000,000	2026-30	PE	OA	$630,000	$17,010,000		
							ROW	OA	$2,970,000			
							CST	OA	$13,410,000			
58	US41 (SR90)(Tamiami Trail E)	Greenway Rd	6 L Farm Rd	Widen from 2-lane to 4-lanes	$31,880,000	2026-30	PE	OA	$ 3,910,000	$41,900,000	dropped from FDOT STIP	
							ROW	OA	$ 4,460,000			
							CST	OA	$ 33,530,000			
111	US41 (SR90) (Tamiami Trail)	Immokalee Rd		Intersection Innovation / Improvements	$17,500,000	2026-30	PE	OA	$ 3,130,000	$23,250,000		
							CST	OA	$ 20,120,000			
					$171,062,250							**$130,171,227**

Plan Period 3 & 4 Construction Funded Projects - Initiated in Plan Period 2							2026-2030			CFP	FPN	
MAP ID	Facility	Limit From	Limit To	Project Description	Total Project Cost (PDC)	CST Time Frame	Phase	Source	Funding Request	2026-2030 TOTAL	PROJECT STATUS	Amount
39	Old US41	US41	Lee/Collier County Line	Widen from 2 lanes to 4-lanes	$22,590,000	2031-2035	PE	~~OA~~	$3,850,000	$4,020,000	435110-2	3,001,000
							ROW	~~OA~~	$170,000			
59	US 41 (SR90) (Tamiami Trail)	Collier Blvd		Major Intersection Improvement	$17,250,000	2031-2035	PE	OA	$2,810,000	$2,810,000		
60	US41 (SR90)(Tamiami Trail)	Immokalee Rd	Old US 41	Complete Streets Study for TSM&O Improvements	$17,250,000	2031-2035	PE	OA	$460,000	$460,000		
22	I-75 (SR93) New Interchange	Vicinity of Everglades Blvd		New Interchange	$42,260,000	2036-2045	PE	OA	$3,760,000	$3,760,000		
C1	Connector Roadway from New I-75 Interchange	Golden Gate Blvd	Vanderbilt Beach Rd	4-lane Connector Roadway from New Interchange (Specific Location TBD during Interchange PD&E	$17,570,000	2036-2045	PE	OA	$440,000	$440,000		
C2	Connector Roadway from New I-75 Interchange	I-75 (SR93)	Golden Gate Blvd	4-lane Connector Roadway from New Interchange (Specific Location TBD during Interchange PD&E	$80,590,000	2036-2045	PE	OA	$2,000,000	$2,000,000		
				Subtotal	**$197,510,000**				**$13,490,000**			**$3,001,000**

HIGHWAYS - FREIGHT PRIORITIES							2026-2030			CFP		
MAP ID	Facility	Limit From	Limit To	Project Description	Total Project Cost (PDC)	CST Time Frame	Phase	Source	Funding Request	YOE	PROJECT STATUS	Amount
60	I-75	Immokalee	Interchange	Major Interchange Improvement (DDI)	$22,395,503		CST		$20,000,000		452544-4	$71,000,000
39	Old 41	US 41	Bonita Beach Rd (Lee County)	widen from 2-4 lanes with buffered bike lanes, SUP on west side and sidewalks on east side.	$186,100,000		PE		$20,000,000		435110-2	$3,001,000
				Subtotal	**$208,495,503**				**$40,000,000**			**$74,001,000**

HIGHWAYS - SAFETY							2026-2030			CFP		
	Facility	Limit From	Limit To	Project Description	Total Project Cost (PDC)	CST Time Frame	Phase	Source	Funding Request	YOE	PROJECT STATUS	Amount
	SR 29	Oil Well Rd	Intersection	Street Lighting	$1,000,000	FY25	DB	SU	$1,000,000			
				Subtotal	**$1,000,000**				**$1,000,000**			

2024 BRIDGE PRIORITIES

Bridge related priorities are consistent with the 2045 LRTP and the County's East of CR951 Bridge Reevaluation Study approved on May 25, 2021.The 2024 Bridge Priorities (Table 4) were approved by the MPO Board on June 9, 2023 and readopted on June 14, 2024, then forwarded to FDOT for consideration of future funding.

	Location		
1	16th St NE,from Golden Gate Blvd to Randall Blvd	$16,400,000	FPN 451283-1 FY24-28 TIP $4.715m SU FY24
2	47th Avenue NE, from Everglades Blvd to Immokalee Rd	$20,112,000*	FY25-29 TIP: FPN 453421-1 $4.8mi SU FY29

*per 6/15/23 D1 Project Application

2024 TRANSIT PRIORITIES

Florida State Statutes require each transit provider in Florida that receives State Transit Block Grant funding to prepare an annual Transit Development Plan (TDP). The TDP is a ten-year plan for Collier Area Transit (CAT) that provides a review of existing transportation services and a trend analysis of these services. The TDP is incorporated into the 2045 LRTP – Cost Feasible Plan. Table 5 on the following page shows the 2023 Transit Priorities approved by the MPO Board on June 10, 2022 and readopted on June 9, 2023 and June 14, 2024. These were submitted to FDOT for consideration of future funding.

Table 5: 2024 Transit Priorities – adopted 6/10/22, 6/9/23 and 6/14/24

Improvement	Category	Ranking	Implementation Year	Annual Cost	3-Year Operating Cost	10-Year Operating Cost	Capital Cost	Funding Status
Maintenance and Operations Facility Replacement	**Transit Asset Management (TAM)**	**1**	**2025**	**$ -**	**$ -**	**$ -**	**$7,900,000**	**$5,000,000**
Administration/Passenger Station Roof Replacement	Transit Asset Management (TAM)	2	2022	$ -	$ -	$ -	$357,000	
Route 15 from 90 to 45 minutes	Increase Frequency	3	2023	$163,238	$489,715	$1,632,384	$503,771	
Route 11 from 30 to 20 minutes	Increase Frequency	4	2023	$652,954	$1,958,861	$6,529,536	$503,771	
Route 12 from 90 to 45 minutes	Increase Frequency	5	2023	$282,947	$848,840	$2,829,466	$503,771	
Route 16 from 90 to 45 minutes	Increase Frequency	6	2024	$156,105	$468,316	$1,561,054	$503,771	
Immokalee Transfer Facility (Building)	Transit Asset Management (TAM)	7	2025		$0		$585,000	
Fixed Route Bus - Replacement	Transit Asset Management (TAM)	8	2023	$ -	$ -	$ -	$520,000	
Route 14 from 60 to 30 minutes	Increase Frequency	9	2024	$243,915	$731,744	$2,439,146	$512,698	
Site SL-15 Creekside	Park and Ride	20	2024	$ -	$ -	$ -	$564,940	
Beach Lot Vanderbilt Beach Rd	Park and Ride	11	2024	$ -	$ -	$ -	$2,318,200	
Route 17/18 from 90 to 45 minutes	Increase Frequency	12	2024	$258,550	$775,649	$2,585,495	$503,771	
Route 13 from 40 to 30 minutes	Increase Frequency	13	2024	$83,712	$251,135	$837,115	$512,698	
New Island Trolley	New Service	14	2025	$551,082	$1,653,246	$5,510,821	$864,368	
Study: Mobility on Demand	Other Improvements	15	2025	$ -	$ -	$ -	$150,000	
Study: Fares	Other Improvements	16	2025	$ -	$ -	$ -	$150,000	
Support Vehicle - Replacement	Transit Asset Management (TAM)	17	2024	$ -	$ -	$ -	$30,000	
New Bayshore Shuttle	New Service	18	2026	$201,000	$602,999	$2,009,995	$531,029	
Support Vehicle - Replacement	Transit Asset Management (TAM)	19	2025	$ -	$ -	$ -	$30,000	
Radio Rd Transfer Station Lot	Park and Ride	20	2027	$ -	$ -	$ -	$479,961	
Beach Lot Pine Ridge Rd	Park and Ride	21	2027	$ -	$ -	$ -	$2,587,310	
Immokalee Rd - Split Route 27 creating EW Route	Route Network Modifications	22	2028	$189,885	$569,654	$1,898,846	$550,016	
Fixed Route Bus - Replacement	Transit Asset Management (TAM)	23	2027	$ -	$ -	$ -	$525,000	
Collier Blvd - Split Route 27 creating NS Route	Route Network Modifications	24	2028	$189,885	$569,654	$1,898,846	$550,016	
Fixed Route Bus - Replacement	Transit Asset Management (TAM)	25	2027	$ -	$ -	$ -	$525,000	
New Route 19/28 - Extend Hours to 10:00 PM	Service Expansion	26	2028	$29,288	$87,863	$292,876	$0	
Fixed Route Bus - Replacement	Transit Asset Management (TAM)	27	2027	$ -	$ -	$ -	$525,000	
Route 24 - Extend Hours to 10:00 PM	Service Expansion	28	2028	$30,298	$90,893	$302,976	$0	
Fixed Route Bus - Replacement	Transit Asset Management (TAM)	29	2027	$ -	$ -	$ -	$525,000	
Goodlette Frank Rd - Split Route 25 creating NS Route	Route Network Modifications	30	2028	$183,805	$551,416	$1,838,052	$550,016	
MOD – North Naples	New Service	31	2030	$81,723	$245,169	$817,230	$81,961	
New Autonomous Circulator	New Service	32	2030	$52,411	$157,232	$524,105	$569,681	
MOD – Marco Island	New Service	33	2030	$108,912	$326,736	$1,089,119	$81,961	
MOD – Golden Gate Estates	New Service	34	2030	$163,446	$490,338	$1,634,460	$81,961	
New Naples Pier Electric Shuttle	New Service	35	2030	$82,213	$246,638	$822,125	$569,681	
MOD – Naples	New Service	36	2030	$193,889	$581,666	$1,938,887	$81,961	

2024 CONGESTION MANAGEMENT PRIORITIES

Transportation Management Areas (urbanized areas with populations over 200,000) are required by 23 C.F.R. 450.322 to have a Congestion Management Process (CMP) that provides for the effective and systematic management and operation of new and existing facilities by using travel demand reductions and operational management strategies. CMP projects that are eligible for Federal and state funding include sidewalk/bicycle paths and/or facilities and congestion management projects that alleviate congestion, do not require the acquisition of right-of-way and demonstrate quantifiable performance measures.

The MPO allocates its SU funds[2] on a five-year rotating basis. The 2024 congestion management priorities are shown in Table 6 (next page). The projects are consistent with the 2022 Congestion Management Process, the 2020 Transportation System Performance Report and the 2045 LRTP. They were adopted by the MPO Board on June 14, 2024.

[2] Surface Transportation Funds for Urbanized Area – with population greater than 200,000. Allocation of funds is determined by a formula.

Table 6: 2024 Congestion Management Project Priorities – updated per Draft FY26-30 Work Program

Project Name	Submitting Agency	Description	Funding Request	CMC Ranking	Funding Status in Draft FY26-30 Work Program
ATMS and Controller Update	Collier County	ATMS and Controller Update	$1,622,000	1	
Fiber connections from US-41 to Mooring Line Drive & Crayton and Harbour & Crayton span-wire to mast arm intersection improvements	City of Naples	Fiber connections to intersections and upgrades from the existing span- wire assembly	$1,998,153	2	455927-1 Harbor Dr & Mooring Line Dr Between US41 & Crayton Rd - Traffic Signal Update $1,998,000 FY30, SU
ITS Retiming of Arterials	Collier County	ITS Retiming of Arterials	$633,000	3	
US41 from 3rd Ave to SR 84 Intersection / Mobility Improvements PD&E	City of Naples	Analyze cumulative effects of redevelopment projects on US41's functionality from a Complete Streets Perpective and address Bike - Ped Safety Concerns utilizing a Safe Systems approach.	$1,118,220	4	453415-1 US 41 from 3rd Ave to SR 84 Intersection/Mobility Improvements PD&E - PD&E/EMO Study $1,188,222 FY27, SU
		Grand Total	**$5,371,373**		

BICYCLE and PEDESTRIAN PRIORITIES

The priorities were derived from the 2019 Collier MPO Bicycle and Pedestrian Master Plan (BPMP), which is incorporated by reference into the 2045 LRTP. The BPMP continues the MPO's vision of providing a safe, connected and convenient on- road and off-road network throughout the Collier MPA to accommodate bicyclists and pedestrians as well as a similar goal of improving transportation efficiency and enhancing the health and fitness of the community while allowing for more transportation choices. Table 7A below shows the 2023 Bike/Ped priorities, all of which are underway in various stages in the FY26-30 TIP. Table 7B on the following page shows the status of the Board's adopted SUN Trail priorities.

Table 7A: 2024 Bicycle and Pedestrian Priorities – status updated per Draft FY26-30 Work Program

2024 BICYCLE & PEDESTRIAN PROJECT PRIORITIES - adopted June 10, 2022, June 2023, & June 2024						
Rank	**Project Name**	**Submitting Agency**	**LAP**	**Funding Request**	**Updated CST Cost**	**Status FY26-30 Draft W.P.**
1	Immokalee Sidewalks (FPN 451542-1)	Collier County	County	$1,079,000	$1,081,000	CST FY30
2	Bayshore CRA Sidewalks (FPN 451543-1)	Collier County	County	$ 239,824	TBD	PE FY26, CST FY28
3	Naples Manor Sidewalks (FPN 448129-1)	Collier County	County	$1,100,000	$2,346,880	CST FY26
4	Golden Gate City Sidewalks (FPN 452065-1)	Collier County	County	$ 309,100	TBD	PE FY28, CST FY30
5	Everglades City Phase 4 Bike/Ped Improvements (FPN 452052-1)	Everglades City	FDOT	$ 563,380	TBD	PE FY28
6	Marco Island - Bald Eagle Dr Bike Lanes (FPN 452209-1)	Marco Island	Marco Is.	$ 802,475	$1,467,281	CST FY27
7	Naples Park Sidewalks - 106 Ave North (FPN 452208-1)	Collier County	County	$ 621,000	TBD	PE FY30
8	Naples Park Sidewalks - 108 Ave North (FPN 452211-1)	Collier County	County	$ 627,000	TBD	PE FY30
9	Naples Park Sidewalks - 109 Ave North (FPN 452210-1)	Collier County	County	$ 622,000	TBD	PE FY30
10	Vanderbilt Beach Rd Pathway (FPN 452207-1)	Collier County	County	$ 703,000	TBD	PE FY30
			Total	**$6,666,779**		

Table 7B 2024 Project Priorities for SUN Trail Funding

2025 Update PROJECT PRIORITIES for SUN TRAIL FUNDING from 2024					Funding Status
Rank	**Project Name**	**Submitting Agency**	**PM**	**Funding Request**	
1	Collier to Polk Regional Trail PD&E Study	Collier MPO	FDOT	$ 4,000,000	MPO Board adopted 2/9/24 & 6/14/24. PD&E Funded in FY24 Statewide FPN 453914-1 $20.3M
2	Bonita-Estero Rail Trail ROW Acquisition	Collier MPO	County	$ 7,800,000	MPO Board adopted 6/14/24; Included in SUN Trail application for ROW acquisition submitted by Lee County 2025, status pending
			Total	**$ 11,800,000**	

REGIONAL PRIORITIES – TRANSPORTATION REGIONAL INCENTIVE PROGRAM (TRIP)

In addition to local MPO priorities, the Collier MPO coordinates with the Lee County MPO to set regional priorities. The Lee County and Collier MPOs entered an Interlocal Agreement by which they set policies to prioritize regional projects. The Transportation Regional Incentive Program (TRIP). TRIP is a discretionary program that funds regional projects prioritized by the two MPOs. The TRIP priorities approved by the MPO Board on June 14, 2024, are shown in Table 9 on the following page.

Table 8: 2024 Regional Priorities – Joint List for Lee and Collier Counties

Joint TRIP Priorities for Lee and Collier for 2024

Sponsor	Route	From	To	Proposed Improvement	Requested Phase	Total Cost	Requested TRIP Funds	STATUS	State Funding Level	Fiscal Year
2023/2024										
Collier County	Collier Blvd	Golden Gate Main Canal	Golden Gate Pkwy	4L to 6L	Des/Build	$38,664,000	$5,000,000			
Collier County	Vanderbilt Beach Rd	US 41	E. of Goodlette	4L to 6L	CST	$8,428,875	$4,214,438	**Funded**	$4,214,438	FY 24/25
Collier County	Veterans Memorial Boulevard	High School Entrance	US 41	New 4L/6L	CST	$14,800,000	$6,000,000			
2024/2025										
Collier County	Vanderbilt Beach Rd	16th Street	Everglades Blvd	New 2L	CST	$19,050,000	$4,125,000			
Lee County	Three Oaks Ext, Phase II	Pony Drive	Daniels Parkway	New 4L/8L CR 876	CST	$131,200,000	$7,500,000			
Collier County	Santa Barbara/Logan Blvd.	Painted Leaf Lane	Pine Ridge Road	Operational Imp.	CST	$8,000,000	$4,000,000			
Lee County	Alico Extension – Phase I	Airport Haul Rd	E. of Alico Road	New 4L	CST	$54,159,583	$6,000,000			
Collier County	Goodlette Road	Vanderbilt Beach Road	Immokalee Road	2L to 4L	CST	$5,500,000	$2,750,000	**Funded**	$2,750,000	FY 23/24
2025/2026										
Lee County	Burnt Store Rd	Van Buren Pkwy.	1,000' N.of Charlotte Co/L.	2L to 4L	ROW	$33,500,000	$4,000,000			
2026/2027										
Lee County	Alico Extension – Phase II & III	E. of Alico Road	SR 82	New 4L	CST	$441,974,282	$10,000,000			
2027/2028										
Collier County	Oil Well Road	Everglades	Oil Well Grade Rd.	2L to 6L	CST	$54,000,000	$6,000,000			
Collier County	Immokalee Road – Shoulder Project	Logan Blvd	Livingston Rd	Shoulders	CST	$15,000,000	$4,000,000	**Funded**	$985,275	FY24?
Collier County	Immokalee Road	At Livingston Road		Major Intersect.	PE	$4,500,000	$1,000,000	**Funded**	$2,500,000	FY24
Collier County	Randall Blvd	Everglades	8th	2L to 6L	PE	$5,760,000	$2,880,000	**Funded**	$2,880,000	FY25
2028/2029										
Lee County	Sunshine Extension	75th Street West	SR 80	New 4L	PD&E	$6,283,770	$3,100,000			
Collier County	Immokalee Road	At Livingston Road		Major Intersect.	CST	$38,000,000	$10,000,000			
2029/2030										
Collier County	Golden Gate Pkwy	At/Livingston Rd		Major Intersect.	PE	$6,000,000	$3,000,000			
Lee County	Ortiz Avenue	SR 82	Luckett Road	2L to 4L	CST	$52,457,000	$8,000,000			

PLANNING PRIORITIES

The MPO prioritizes the use of SU funds to supplement the MPO's PL (planning) funds to prepare the Long Range Transportation Plan update every five years and the plans that feed into the LRTP. These include the Local Roads Safety Plan, Transportation System Performance Report, Congestion Management Process, Bicycle and Pedestrian Master Plan and Transit Development Plan shown in Table 9 below.

Table 9: 2024 Planning Priorities – Adopted June 14, 2024 – updated per FY26-30 Draft Work Program

MPO Board adopted on 6-14-24.

Priority	Fiscal Year	SU Request	Project Cost	Plan or Study	Status FY26-30 Draft W.P.
1	2025	$379,416	$379,416	2050 LRTP	$379,416
	2026	$350,000	$350,000	2050 LRTP, CMP	$350,000
1	2027	$350,000	$350,000	CMP, BPMP, TDP, 2055 LRTP	$350,000
	2028	$350,000	$350,000		$350,000
	2029	$450,000	$450,000		$450,000
	2030	$450,000	$450,000		$450,000
		TOTAL	**$2,329,416**		**$2,329,416**

Note: The Congestion Management Process (CMP), Bicycle/Pedestrian Master Plan (BPMP), and Transit Development Plan (TDP) support the development of the LRTP and are incorporated by reference in the LRTP.

Major Projects Implemented or Delayed from the Previous TIP (FY2026-2030)

23 CFR §450.326(n)(2) requires MPOs to list major projects from the previous TIP that were implemented and to identify any significant delays in the planned implementation of major projects. ***Major Projects* are defined as *multi-laning or a new facility type capacity improvement*.**

Major Projects - Phases Implemented/Completed/Advanced

- 417540-5 SR 29 from CR 846 E to N of New Market Road W, new road construction with freight priority; increased funding for ROW and advanced to construction phase in FY27 as part of the *Moving Florida Forward Infrastructure Initiative (*MFF*).*
- 445296-1 I-75 at Pine Ridge Interchange Improvement, additional construction funds provided in FY25 by MFF.

Major Projects - Phases Significantly Delayed, Reason for Delay and Revised Schedule

- 435111-2 SR 951 from Manatee Rd to N of Tower Rd, add lanes and resurface, bike-ped improvements, CST deferred out beyond FY30

Major Projects in the FY2026-2030 TIP

Multi-Laning or New Facility Capacity Improvement Projects

- 452544-3 I-75 from Immokalee to Bonita Beach, add lanes, Design/Build FY26-28
- 452544-4 Immokalee Interchange, DDI, Design/Build FY 26-30
- 452544-5 I-75 from Immokalee to Pine Ridge, add lanes, Design/Build FY 26-30
- 452544-6 I-75 from Pine Ridge to Golden Gate, add lanes, Design/Build FY26-30
- 417540-5 SR 29 from N CR 845 E to N of New Market Road, widen from 3 to 4 lanes, ROW, RRU, ENV FY26, CST FY 27
- 417540-6 SR 29 from N of New Market to SR 82, widen from 2 to 4 lanes with freight priority; ROW, RRU, ENV FY26, CST FY 27.
- 435110-2 Old US 41 from US 41 to Lee/Collier C/L, widen 2-4 lanes, bike-ped improvements, PE FY28
- 446341-1 Goodlette Frank Rd from Vanderbilt Rd to Immokalee Rd, add lanes & reconstruct; CST FY27.
- 440441-1 Airport Pulling Rd from Vanderbilt Beach Rd to Immokalee Rd, CST FY26

- 446451-1 SR 45 (US 41) at CR 886 (Golden Gate Pkwy), intersection improvement, CST FY27

PUBLIC INVOLVEMENT

The MPO's Public Participation Plan (PPP) follows Federal regulations for TIP related public involvement [23 C.F.R. 450.326(b)] and [23 U.S.C. 134 (i)(6) and (7) providing adequate public notice of public participation activities and time for public review and comment at key decision points. During the time period that the FDOT Work Program and MPO TIP for FY 2025-2029 were out for public comment, the MPO held in-person advisory committee meetings. MPO Board meetings were conducted as hybrid remote/in-person.

The TIP and all amendments to the TIP are presented at multiple meetings of the Technical Advisory Committee (TAC), Citizens Advisory Committee (CAC) and MPO Board; the public may attend and comment at all MPO meetings. The MPO also conducts outreach by way of its monthly eNewsletter, website postings and email distribution lists. Public comments on the 2026 – FY2030 TIP may be found in Appendix F.

TIP AMENDMENTS

Occasionally amendments need to be made to the TIP. There are three types of amendments. The first type, **Administrative Modification**, is used for minor cost changes in a project/project phase, minor changes to funding sources, minor changes to the initiation of any project phase, and correction of scrivener errors. Administrative Modifications do not need MPO Board approval and may be authorized by the MPO's Executive Director.

The second type of amendment – a **Roll Forward Amendment** – is used to add projects to the TIP that were not added prior to June 30th but were added to the FDOT Work Program between July 1st and September 30th. Roll Forward Amendments are regularly needed largely due to the different state and federal fiscal years. Many of the projects that get rolled forward are FTA projects because these projects do not automatically roll forward in the TIP. Roll Forward Amendments do not have any fiscal impact on the TIP.

A **TIP Amendment** is the third and most substantive type of amendment. These amendments are required when a project is added or deleted (excluding those projects added between July 1st and September 30th), a project impacts the fiscal constraint of the TIP, project phase initiation dates, or if there is a substantive change in the scope of a project. TIP Amendments require MPO Board approval, are posted on the MPO website along with comment forms and distributed to listserv(s) via email. The Collier MPO's PPP defines the process to be followed for TIP amendments.

CERTIFICATION

The entire MPO process, including the TIP, must be certified by FDOT on an annual basis. The 2024 MPO process was certified by FDOT and the MPO Board on March 18, 2025. In addition, every four years the MPO must also be certified by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). The MPO's transportation planning process was jointly certified by FHWA and FTA on December 30, 2024.. The next FHWA / FTA joint certification site visit will occur in 2028.

PROJECT ORGANIZATION

Projects are listed in ten different categories. Within each category projects are listed in numerical order using the **FPN** (**Financial Project Number**) which is in the upper left corner of each project page. Several of the roads are listed by their county or state road designation. The table below lists these designations along with the commonly used name.

Common Name	Name in TIP
Vanderbilt Drive	CR 901
Vanderbilt Beach Road	CR 862
San Marco Road	CR 92
US 41/Tamiami Trail	SR 90 SR 45
Collier Boulevard	SR 951

EXPLANATION OF PROJECT COSTS

Part I of the TIP contains all projects that are listed in the FY2025 – FY2029 TIP. Each project is listed on a separate project page.

Projects often require multiple phases which may include any or all of the following, as listed at the beginning of this document:

CAP	Capital
CST	Construction
DSB	Design Build
ENV	Environmental
INC	Contract Incentives
MNT	Maintenance
OPS	Operations
PDE	Project Development & Environment (PD&E)
PE	Preliminary Engineering
PLN	Planning
ROW	Right-of-Way
RRU	Railroad & Utilities

Phases of projects are funded and may have multiple funding sources. There are many sources, as listed before the phase list at the beginning of this document.

Large projects are sometimes constructed in smaller segments and may be shown in multiple TIPs. When this happens, the project description will indicate that the current project is a segment/ phase of a larger project.

PART I: PROJECT SHEETS FROM FDOT'S FIVE-YEAR WORK PROGRAM FY 2026-2030

Project sheets are based on FDOT's April 9, 2025 Work Program snapshot.

PROJECT SHEETS WILL BE INSERTED AFTER 4/9/25 SNAPSHOT RECEIVED

TRANSPORTATION DISADVANTAGED PROJECTS

This section includes the Transportation Disadvantaged program projects in FY2026 – FY2030. The Community Transportation Coordinator (CTC) for the Transportation Disadvantaged program in Collier County is the Collier County Board of County Commissioners (BCC) which provide services under a memorandum of agreement with the Florida Commission for the Transportation Disadvantaged. The Collier MPO, as the Designated Official Planning Agency for the program (DOPA) confirms that projects programmed through FY 2030 are all consistent with the Transportation Disadvantaged Service Plan (TDSP) major update which was adopted by the Collier Local Coordinating Board (LCB) on October 4th, 2023. The two Transportation Disadvantaged program projects are listed below.

The amount of the MPO's LCB assistance and the Transportation Disadvantaged Trust Fund (TDTF) for FY2026 was not yet available when this TIP was adopted. The amounts listed below were submitted for funding in June 2024. The next application submittal will occur in June 2025, for FY 2026.

Collier MPO LCB Assistance
The amount of the FY 2025 Planning Grant Allocations for the Transportation Disadvantaged Trust Fund is $30,780. This grant allocation is used by the Collier MPO to support the LCB.

Collier County FY 2025 TDTF / Trip and Equipment Grant
The TDTF and Trip and Equipment Grant are funded by the Florida Commission for the Transportation Disadvantaged. The FY 2025 amount of the grant is projected to be $765,322 with a local match of $85,035 for a total funding amount of $850,357, pending approval by the BCC. These funds are used to cover a portion of the operating expenses for the Collier Area Paratransit Program.

PAGE INTENTIONALLY BLANK

PART II: REQUIRED DOCUMENTATION

Section A. COLLIER COUNTY CAPITAL IMPROVEMENT PROJECTS

The projects included in this section of the TIP are generally located outside of the Cities of Marco Island and Naples. The projects are funded through a variety of funding sources including local gas taxes, road impact fees, state and federal grants, and developer commitments.

Priorities are established by the Collier County Board of County Commissioners based upon an analysis of existing conditions and project needs. Some reconstruction and resurfacing projects may have been initially requested by citizens. Other projects are part of the overall maintenance and improvement program, utilizing various funds, with priorities established through careful and continuous monitoring of conditions.

The five-year schedule of Capital Improvement Projects approved by the Board of County Commissioners is shown on the next page. All improvements are consistent with the Collier County Comprehensive Plan and Collier County Growth Management Plan. (Source: County's Annual Update and Inventory Report 2024)

Attachment D
2025 Year Work Program
(Dollars shown in Thousands)

Project #	Project Name SUMMARY OF PROJECTS	FY25 Amount		FY26 Amount		FY27 Amount		FY28 Amount		FY29 Amount		FY 25-29 Amount
60201	Pine Ridge Rd (Livingston to I75)			6,224	C							6,224
60147	Randall/Immokalee Road Intersection			16,226	C							16,226
60190	Airport Rd Vanderbilt Bch Rd to Immk Rd			29,751	C							29,751
60212	47th Ave NE Bridge							12,265	R	27,980	C	40,245
60212	Wilson Blvd South Bridge			2,615	R							2,615
60212	13th St NW Bridge			7,855	R							7,855
60212	62nd Ave NE Bridge					6,275	R					6,275
60212	10th Ave SE Bridge					4,535	R	17,677	C			22,212
60212	16th Street NE Bridge	24,853	C									24,853
60228	Sidewalks-surtax			4,713	C							4,713
60198	Veterans Memorial PH II	1,300	D	10,131	R	4,716	C					16,147
60199	VBR (US41 to E of Goodlette)	10,629	C									10,629
60129	Wilson Benfield (Lord's Way to City Gate N)							1,000	A	750	S	1,750
60144	Oil Well (Everglades to Oil Well Grade)	7,174	DM			56,522	C					63,696
68056	Collier Blvd (Green to GG Main Canal)	36,502	C									36,502
60263	Everglades Blvd - VBR to Oil Well Rd	5,578	DM	11,330	R	53,452	C					70,360
60268	Immk-Livingston Flyover	3,640	DRM	500	R	65,452	C					69,592
60259	Goodlette Rd (VBR to Immokalee Rd)	400	M	26,502	C							26,902
60229	Wilson Blvd (GG Blvd to Immokalee)	-		5,945	R							5,945
60249	Vanderbilt Bch Rd (16th to Everglades)	5,020	R	30,231	C							35,251
60264	Golden Gate Parkway at Livingston					-		6,000	DA			6,000
TBD	I75 Immokalee Rd FDOT			40,000	C							40,000
TBD	Santa Barbara/Logan 6 laning									12,255	DA	12,255
TBD	Immk Rd Livingston to Logan Paved Should			1,500	D			20,498	C			21,998
TBD	Pine Ridge Rd (Shirley to Airport)							500	S			500
TBD	VBR (Airport to Livingston)			431	S					1,500	D	1,931
TBD	VBR Logan Blvd to Collier Blvd									500	S	500
TBD	VBR Imp Golf Pavilion to Vanderbilt Dr					431	S					431
60016	Intersections Improvements Shoulder Wide	583	C	165		600	C	2,600	C	850	C	4,798
60231	Oil Well Rd (Camp Keals Rd to SR 29)	750	C	750	C	750	C					2,250
60253	Immk Rd Shoulder Imp	1,200	C	1,200	C	1,200	C	1,200	C	1,200	C	6,000
60225	White Blvd (Collier to 23rd ST S.W)							2,800	C			2,800
60272	Livingston Rd at Entrada Ave	1,500	DC									1,500
TBD	Immokalee Rd at Oil Well Rd EB Dual RT			1,400	DC							1,400
TBD	Pine Ridge and Napa Intersection Imp			1,700	DC							1,700
TBD	23rd St SW at 16th Ave SW					2,200	DC					2,200
TBD	Oil Well at Desoto			785	DC							785
60240	Traffic Calming											-
	Contingency	290										290
	Subtotal Capacity Improvement Projects	99,419		199,954		196,133		64,540		45,035		605,081

	Operations Improvements/Programs						
66066	Bridge Repairs/Improvements**	161	6,000	6,000	6,000	6,000	24,161
60130	Wall/Barrier Replacement	1,500	250	250	250	250	2,500
60131	Road Resurfacing 1011/1001	10,000	14,000	14,500	14,500	14,500	67,500
60077	Striping and Marking	800	800	800	800	800	4,000
60197	RM Facility Fund 3081	500	500	500	500	500	2,500
60090	Traffic Signal Timing	500					500
60172	Traffic Ops Upgrades/Enhancements	1,441	2,110	2,000	2,000	2,000	9,551
60260	Mast Arm Painting	225	225	225	225	225	1,125
60118	Countywide Pathways/Sidewalks Non PIL /LAP	300	2,500	5,000	4,000	1,000	12,800
60037	Asset Management	250	250	250	250	250	1,250
50285	TMSD Building R&M	100					100
60265	Median Maintenance	9,782	8,000	8,000	8,000	8,000	41,782
69331-339	District 1,2,3,4,5,6 Sidewalk PIL						-
	Subtotal Operations Improvements/Programs	25,559	34,635	37,525	36,525	33,525	167,769
60085	TIS Review	-	250	$ 250	$ 250	$ 250	$ 1,000
60109	Planning Consulting	500	$ 500	$ 500	$ 500	$ 500	$ 2,500
60163	Traffic Studies	100	$ 300	$ 300	$ 300	$ 300	$ 1,300
	Transfer to 2023 Commercial Paper	478					478
	Impact Fee Refunds	245	200	200	200	200	1,045
	Debt Service Payments	13,417					13,417
					-	-	-
	Total Funding Request All Funds	139,718	235,839	234,908	102,315	79,810	792,590
	REVENUES						
	Sales Tax						-
	Impact Fees Revenue	24,827	20,000	20,000	20,000	20,000	104,827
	COA Revenue						-
	Gas Tax Revenue	25,100	25,100	25,100	25,100	25,100	125,500
	Grants/Reimbursements	3,770	9,844	985	14,199	5,795	34,593
	Transfer from road funds to 1842						-
	Transfer 0001 to 3081	9,660	9,660	9,660	9,660	9,660	48,300
	Transfer 1011 to 3081	14,280	14,280	14,280	14,280	14,280	71,400
							-
	Interest Gas Tax-Impact Fees	4,346	2,500	2,500	2,500	2,500	14,346
	Carry Forward 3083-3081-Impact Fees	39,208					39,208
	Potential Debt Funding/Unfunded Needs	21,136	156,480	164,408	18,601	4,500	365,125
	Revenue Reserve 5%	(2,609)	(2,025)	(2,025)	(2,025)	(2,025)	(10,709)
	Total Revenues	139,718	235,839	234,908	102,315	79,810	792,590

Grant Funds for Projects

	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
Immk Rd CR846Shoulders	985	985	985	985	985	-
Immk Rd at Livingston						
Immk Rd Liv to Logan		750		10,214		
Goodlette VBR to Imm		2,750				
VBR Airport to Liv		431				
Airport VBR to Immk		4,928				
GLGT Pkwy at Livings				3,000		
Oil Well (Everglades to Oil Well Grade)	2,785					
47th Ave Ne Bridge					4,810	
Totals	3,770	9,844	985	14,199	5,795	

Key:
A = Adv Construction / S = Study / D = Design
M = Mitigation / C = Construction / R = ROW
LS = Landscape / L = Litigation / I = Inspection
AM = Access Mgmt / LP = SIB Loan Repayment
* = Project constructed with funds appropriated in previous years
**The 5-cent Local Option Fuel Tax is earmarked towards debt service, bridges, and intersection improvements.

Section B: CITY OF NAPLES CAPITAL IMPROVEMENT PROJECTS – TRANSPORTATION

The projects included in this section of the TIP are located inside the City of Naples. The projects are funded through a variety of funding sources including local gas taxes, road impact fees, state and federal grants, and developer commitments. Priorities are established by the Naples City Council based upon an analysis of existing conditions and project needs. Some reconstruction and resurfacing projects may have been initially requested by citizens. Other projects are part of the overall maintenance and improvement program, utilizing various funds, with priorities established through careful and continuous monitoring of conditions.

The following table shows City of Naples' FY 2025-2029 Capital Improvement Program Budget for Streets & Traffic (Fund 190):

CAPITAL PROJECTS - ALL FUNDS

FISCAL YEARS 2025-2029

CIP NUMBER	PROJECT DESCRIPTION	AMENDED BUDGET 2023-24	REQUEST 2024-25	2025-26	2026-27	2027-28	2028-29
	Land Acquisition 170 10th St N	4,915,000	0	0	0	0	0
	1st Ave South Public Parking Garage (FY24 c/o)	17,848,057	0	0	0	0	0
	6th Avenue South Streetscape	0	0	0	800,000	0	0
	Infrastructure Improvements including bike/ped	0	0	0	3,000,000	1,000,000	1,000,000
	Park and Open Space Improvements	0	0	0	0	500,000	500,000
TOTAL CRA FUND		**23,363,057**	**13,587,500**	**7,600,000**	**5,300,000**	**6,000,000**	**6,000,000**
STREETS & TRAFFIC FUND (Fund 190)							
	Annual Pavement Resurfacing Program	1,500,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
25U29	Pedestrian & Bicycle Master Plan Projects	150,000	150,000	150,000	150,000	150,000	150,000
25U05	South Golf Drive Improvements (partial FDOT reimb.)	0	3,000,000	0	0	0	0
	Intersection/Signal System Improvements	700,000	0	700,000	0	700,000	200,000
	American Disablity Aact (ADA) Infrastructurre Improvem	0	0	75,000	75,000	75,000	75,000
	Annual Alleyway Improvement Project	0	0	TBD	TBD	TBD	TBD
TOTAL STREETS AND TRAFFIC FUND		**2,350,000**	**4,150,000**	**1,925,000**	**1,225,000**	**1,925,000**	**1,425,000**

Section C: CITY OF MARCO ISLAND CAPITAL IMPROVEMENT PROJECTS – TRANSPORTATION

The projects included in this section of the TIP are located inside the City of Marco Island. The projects are funded through a variety of funding sources including local gas taxes, road impact fees, state and federal grants, and developer commitments. Priorities are established by the Marco Island City Council based upon an analysis of existing conditions and project needs. Some reconstruction and resurfacing projects may have been initially requested by citizens. Other projects are part of the overall maintenance and improvement program, utilizing various funds, with priorities established through careful and continuous monitoring of conditions. Marco Island's Five-Year Capital Improvements Program Summary is shown below.

City of Marco Island FY 2025-2029 Capitall Funding Plan

Five Year Capital Funding Plan - General Fund (300)

ITEM #	PROJ	PUBLIC WORKS INFRASTRUCTURE & OTHER	COST	FY2025	FY2026	FY2027	FY2028	FY2029	TOTAL 5 YR FUNDING
1	16024	PW - Annual Bridge Rehabilitation Project	300,000	500,000	500,000	500,000	500,000	500,000	2,500,000
2	16027	PW - Citywide Drainage Improvement Projects	302,000	302,000	302,000	302,000	302,000	302,000	1,510,000
3	16028	PW - Master Plan Drainage Project - Citywide	295,000	295,000	295,000	295,000	295,000	295,000	1,475,000
4	16031	PW - Street Resurfacing - Citywide	500,000	1,500,000	500,000	500,000	500,000	500,000	3,500,000
5	16035	PW - Bike Paths -Design & Construction	214,000	224,080	224,080	224,080	224,080	224,080	1,120,400
6	20004	PW - Swale & Stormwater Improvements	Varies	100,000	100,000	100,000	100,000	100,000	500,000
7	21030	PW - Shared Use Pathway - Design	Varies	90,000	90,000	90,000	90,000	90,000	450,000
	TBD	Traffic Signal Control Replacement	500,000	500,000	500,000	125,000	-	-	1,125,000
	TBD	Pedestrian Safety Improvements	500,000	500,000	500,000	-	-	-	1,000,000
	TBD	N. Collier Blvd/N. Barfield Dr. Intersection Improvements	1,720,000	1,720,000	-	-	-	-	1,720,000
	TBD	New LCEC Street Lights for Dark Streets	50,000	50,000	50,000	-	-	-	100,000
	TBD	Roadway Restriping	200,000	200,000	200,000	200,000			600,000
	TBD	Smokehouse Creek (W. Winterberry) Bridge Rehab	2,000,000	2,000,000	-	-	-	-	2,000,000
	TBD	S Barfield Dr Flood Remediation	2,500,000	2,500,000	-	-	-	-	2,500,000
	TBD	Sand Hill St. Shared Path	400,000	400,000	-	-	-	-	400,000
	TBD	Exfiltration Swales	3,000,000	3,000,000	-	-	-	-	3,000,000
	TBD	Tide Leveling/Dead End Canal Interconnects (Project 22001)	2,096,500	2,096,500	-	-	-	-	2,096,500
		Public Works Infrastructure & Other Total	14,577,500	15,977,580	3,261,080	2,336,080	2,011,080	2,011,080	25,596,900

Section D: CITY OF EVERGLADES CAPITAL IMPROVEMENT PROJECTS – TRANSPORTATION

The City of Everglades City continues to focus attention primarily on repairs to local roadways, addressing longstanding drainage issues and constructing bicycle/pedestrian improvements. Through collaboration with FDOT serving as the lead agency on behalf of the City, two projects from the Everglades City Bike/Ped Masterplan are programmed in the FY26-30 TIP: FPN 448265-1 Phase 3 and FPN 452052-1 Phase 4 Bike/Ped Improvements. (The City's 2025 Budget is not yet available.)

CITY OF EVERGLADES CITY – FISCAL YEAR 2024-2025
540.00 TRANSPORTATION
541.00 ROAD & STREET FACILITIES
5410.10 PERSONNEL SERVICES

	GENERAL FUND - 001-0000-	Total UTILITY FUND - 401-0000-	TOTAL
541.12 · REGULAR SALARIES & WAGES	46,586.00		46,586.00
541.14 · OVERTIME	5,982.00		5,982.00
541.21 · FICA TAXES	4,022.00		4,022.00
541.23 · LIFE & HEALTH INSURANCE	19,200.00		19,200.00
541.24 · WORKERS' COMPENSATION	5,276.00		5,276.00
Total 541.10 · PERSONNEL SERVICES	81,066.00		81,066.00
541.30 · OPERATING EXPENDITURES/EXPENSES			
541.31 · PROFESSIONAL SERVICES	1,500.00		1,500.00
541.34 · OTHER SERVICES	28,000.00		28,000.00
541.41 · COMMUNICATION SERVICES & DEVICE	2,600.00		2,600.00
541.42 · FREIGHT & POSTAGE SERVICES	400.00		400.00
541.43 · UTILITY SERVICES	7,500.00		7,500.00
541.45 · INSURANCE	27,743.00		27,743.00
541.46 · REPAIR & MAINTENANCE SERVICES	30,000.00		30,000.00
541.49 · OTHER CURRENT CHGS & OBLIGATION	7,500.00		7,500.00
541.51 · OFFICE SUPPLIES	600.00		600.00
541.52 · OPERATING SUPPLIES	6,000.00		6,000.00
541.53 · ROAD MATERIALS & SUPPLIES	20,000.00		20,000.00
Total 541.30 · OPERATING EXPENDITURES/EXPENSES	131,843.00		131,843.00
Total 541.00 · ROAD & STREET FACILITIES	212,909.00		212,909.00
Total 540.00 · TRANSPORTATION	212,909.00		212,909.00

Section E: FEDERAL FUNDING OBLIGATIONS

The Florida Department of Transportation – Work Program Office produces an annual list of projects for which federal funds have been obligated in the preceding year. The list is shown beginning on the following pages.

source: Federal Obligations by MPO Area (fdot.gov)

https://www.fdot.gov/workprogram/federal/fa-mpo-obligdet.shtm

FLORIDA DEPARTMENT OF TRANSPORTATION
OFFICE OF WORK PROGRAM
ANNUAL OBLIGATIONS REPORT

================
HIGHWAYS
================

ITEM NUMBER:417540 1 PROJECT DESCRIPTION:SR 29 FROM OIL WELL ROAD TO SR 82 *SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:PD&E/EMO STUDY
ROADWAY ID:03080000 PROJECT LENGTH: 16.961MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 0

FUND CODE	2024
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	25,000
TOTAL 417540 1	**25,000**
TOTAL 417540 1	**25,000**

ITEM NUMBER:417540 3 PROJECT DESCRIPTION:SR 29 FROM SUNNILAND NURSERY ROAD TO S OF AGRICULTURE WAY *SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:ADD LANES & RECONSTRUCT
ROADWAY ID:03080000 PROJECT LENGTH: 2.548MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 2

FUND CODE	2024
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SA	1,000
TOTAL 417540 3	**1,000**
TOTAL 417540 3	**1,000**

ITEM NUMBER:417540 4 PROJECT DESCRIPTION:SR 29 FROM S OF AGRICULTURE WAY TO CR 846 E *SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:ADD LANES & RECONSTRUCT
ROADWAY ID:03080000 PROJECT LENGTH: 2.251MI LANES EXIST/IMPROVED/ADDED: 4/ 2/ 2

FUND CODE	2024
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SA	30,713
TOTAL 417540 4	**30,713**
TOTAL 417540 4	**30,713**

ITEM NUMBER:430848 1 PROJECT DESCRIPTION:SR 82 FROM HENDRY COUNTY LINE TO GATOR SLOUGH LANE *SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:ADD LANES & RECONSTRUCT
ROADWAY ID:03050000 PROJECT LENGTH: 3.826MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 1

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
PROT	6,659,628
SA	60,000
SU	1,841,574
TALT	900,101
PHASE: GRANTS AND MISCELLANEOUS / RESPONSIBLE AGENCY: MANAGED BY FDOT	
TALT	100,000
TOTAL 430848 1	**9,561,303**
TOTAL 430848 1	**9,561,303**

HIGHWAYS

ITEM NUMBER:435030 1 PROJECT DESCRIPTION:SUNSHINE BLVD FROM 17TH AVE SW TO GREEN BLVD *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:SIDEWALK
ROADWAY ID:03000000 PROJECT LENGTH: .001MI LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	-7,960
TOTAL 435030 1	**-7,960**
TOTAL 435030 1	**-7,960**

ITEM NUMBER:435110 1 PROJECT DESCRIPTION:CR 887 (OLD US 41) FROM US 41 TO LEE COUNTY LINE *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:PD&E/EMO STUDY
ROADWAY ID:03514000 PROJECT LENGTH: 1.550MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 2

FUND CODE	2024
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	5,100
TOTAL 435110 1	**5,100**
TOTAL 435110 1	**5,100**

ITEM NUMBER:437096 1 PROJECT DESCRIPTION:COPELAND AVE SIDEWALK FROM CHOKOLOSKEE BAY BRDG TO N OF BROADWAY AVE *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:SIDEWALK
ROADWAY ID:03600000 PROJECT LENGTH: 1.277MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	21,351
TALT	63,011
TALU	24,250
TOTAL 437096 1	**108,612**
TOTAL 437096 1	**108,612**

ITEM NUMBER:437924 1 PROJECT DESCRIPTION:TRAVEL TIME DATA COLLECTION COLLIER COUNTY ITS ARCH ATMS *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:OTHER ITS
ROADWAY ID:03000000 PROJECT LENGTH: .001MI LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: GRANTS AND MISCELLANEOUS / RESPONSIBLE AGENCY: MANAGED BY COLLIER COUNTY	
CM	440,450
TOTAL 437924 1	**440,450**
TOTAL 437924 1	**440,450**

HIGHWAYS

ITEM NUMBER:435030 1 PROJECT DESCRIPTION:SUNSHINE BLVD FROM 17TH AVE SW TO GREEN BLVD *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:SIDEWALK
ROADWAY ID:03000000 PROJECT LENGTH: .001MI LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	-7,960
TOTAL 435030 1	**-7,960**
TOTAL 435030 1	**-7,960**

ITEM NUMBER:435110 1 PROJECT DESCRIPTION:CR 887 (OLD US 41) FROM US 41 TO LEE COUNTY LINE *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:PD&E/EMO STUDY
ROADWAY ID:03514000 PROJECT LENGTH: 1.550MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 2

FUND CODE	2024
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	5,100
TOTAL 435110 1	**5,100**
TOTAL 435110 1	**5,100**

ITEM NUMBER:437096 1 PROJECT DESCRIPTION:COPELAND AVE SIDEWALK FROM CHOKOLOSKEE BAY BRDG TO N OF BROADWAY AVE *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:SIDEWALK
ROADWAY ID:03600000 PROJECT LENGTH: 1.277MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	21,351
TALT	63,011
TALU	24,250
TOTAL 437096 1	**108,612**
TOTAL 437096 1	**108,612**

ITEM NUMBER:437924 1 PROJECT DESCRIPTION:TRAVEL TIME DATA COLLECTION COLLIER COUNTY ITS ARCH ATMS *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:OTHER ITS
ROADWAY ID:03000000 PROJECT LENGTH: .001MI LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: GRANTS AND MISCELLANEOUS / RESPONSIBLE AGENCY: MANAGED BY COLLIER COUNTY	
CM	440,450
TOTAL 437924 1	**440,450**
TOTAL 437924 1	**440,450**

FLORIDA DEPARTMENT OF TRANSPORTATION
OFFICE OF WORK PROGRAM
ANNUAL OBLIGATIONS REPORT

================
HIGHWAYS
================

ITEM NUMBER:437926 1 PROJECT DESCRIPTION:SIGNAL TIMING US41 FROM SR951/COLLIER BLVD TO OLD US41 *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:TRAFFIC SIGNAL UPDATE
ROADWAY ID:03010000 PROJECT LENGTH: 19.960MI LANES EXIST/IMPROVED/ADDED: 6/ 0/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	-7,381
TOTAL 437926 1	**-7,381**
TOTAL 437926 1	**-7,381**

ITEM NUMBER:438059 1 PROJECT DESCRIPTION:SR90(US 41) TAMIAMI TRL FM E OF SR84(DAVIS BLVD) TO COURTHOUSE SHADOWS *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:RESURFACING
ROADWAY ID:03010000 PROJECT LENGTH: 1.465MI LANES EXIST/IMPROVED/ADDED: 3/ 3/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
NHRE	-491
SA	10,890
TOTAL 438059 1	**10,399**
TOTAL 438059 1	**10,399**

ITEM NUMBER:438091 1 PROJECT DESCRIPTION:COUNTY BARN ROAD FROM RATTLESNAKE HAMMOCK TO SR 84(DAVIS BLVD) *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:BIKE PATH/TRAIL
ROADWAY ID:03633000 PROJECT LENGTH: 2.045MI LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
CARU	185,000
SU	125,024
TOTAL 438091 1	**310,024**
TOTAL 438091 1	**310,024**

ITEM NUMBER:438091 2 PROJECT DESCRIPTION:COUNTY BARN ROAD FROM RATTLESNAKE HAMMOCK TO SR 84(DAVIS BLVD) *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:BIKE PATH/TRAIL
ROADWAY ID:03633000 PROJECT LENGTH: 2.045MI LANES EXIST/IMPROVED/ADDED: 1/ 0/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY COLLIER COUNTY	
SU	-125,022
TOTAL 438091 2	**-125,022**
TOTAL 438091 2	**-125,022**

FLORIDA DEPARTMENT OF TRANSPORTATION
OFFICE OF WORK PROGRAM
ANNUAL OBLIGATIONS REPORT

================
HIGHWAYS
================

ITEM NUMBER:437926 1 PROJECT DESCRIPTION:SIGNAL TIMING US41 FROM SR951/COLLIER BLVD TO OLD US41 *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:TRAFFIC SIGNAL UPDATE
ROADWAY ID:03010000 PROJECT LENGTH: 19.960MI LANES EXIST/IMPROVED/ADDED: 6/ 0/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	-7,381
TOTAL 437926 1	**-7,381**
TOTAL 437926 1	**-7,381**

ITEM NUMBER:438059 1 PROJECT DESCRIPTION:SR90(US 41) TAMIAMI TRL FM E OF SR84(DAVIS BLVD) TO COURTHOUSE SHADOWS *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:RESURFACING
ROADWAY ID:03010000 PROJECT LENGTH: 1.465MI LANES EXIST/IMPROVED/ADDED: 3/ 3/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
NHRE	-491
SA	10,890
TOTAL 438059 1	**10,399**
TOTAL 438059 1	**10,399**

ITEM NUMBER:438091 1 PROJECT DESCRIPTION:COUNTY BARN ROAD FROM RATTLESNAKE HAMMOCK TO SR 84(DAVIS BLVD) *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:BIKE PATH/TRAIL
ROADWAY ID:03633000 PROJECT LENGTH: 2.045MI LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
CARU	185,000
SU	125,024
TOTAL 438091 1	**310,024**
TOTAL 438091 1	**310,024**

ITEM NUMBER:438091 2 PROJECT DESCRIPTION:COUNTY BARN ROAD FROM RATTLESNAKE HAMMOCK TO SR 84(DAVIS BLVD) *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:BIKE PATH/TRAIL
ROADWAY ID:03633000 PROJECT LENGTH: 2.045MI LANES EXIST/IMPROVED/ADDED: 1/ 0/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY COLLIER COUNTY	
SU	-125,022
TOTAL 438091 2	**-125,022**
TOTAL 438091 2	**-125,022**

FLORIDA DEPARTMENT OF TRANSPORTATION
OFFICE OF WORK PROGRAM
ANNUAL OBLIGATIONS REPORT

HIGHWAYS

ITEM NUMBER:438092 1 PROJECT DESCRIPTION:CR 901/VANDERBILT DR FROM VANDERBILT BEACH RD TO 109TH AVENUE N *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:SIDEWALK
ROADWAY ID:03000046 PROJECT LENGTH: 1.214MI LANES EXIST/IMPROVED/ADDED: 2/ 0/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
GFSU	96,348
SU	68,227
TOTAL 438092 1	**164,575**
TOTAL 438092 1	**164,575**

ITEM NUMBER:438093 1 PROJECT DESCRIPTION:GREEN BLVD FROM SANTA BARBARA BLVD TO SUNSHINE BLVD *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:BIKE LANE/SIDEWALK
ROADWAY ID:03000036 PROJECT LENGTH: 1.040MI LANES EXIST/IMPROVED/ADDED: 2/ 0/ 0

FUND CODE	2024
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	-177
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
GFSU	100,000
SU	110,530
TOTAL 438093 1	**210,353**
TOTAL 438093 1	**210,353**

ITEM NUMBER:438093 2 PROJECT DESCRIPTION:GREEN BLVD FROM SANTA BARBARA BLVD TO SUNSHINE BLVD *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:BIKE LANE/SIDEWALK
ROADWAY ID:03000036 PROJECT LENGTH: 1.040MI LANES EXIST/IMPROVED/ADDED: 2/ 0/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY COLLIER COUNTY	
GFSU	8,860
SU	825,278
TOTAL 438093 2	**834,138**
TOTAL 438093 2	**834,138**

ITEM NUMBER:439555 1 PROJECT DESCRIPTION:SR 951 FROM JUDGE JOLLEY BRIDGE TO FIDDLERS CREEK PARKWAY *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:RESURFACING
ROADWAY ID:03030000 PROJECT LENGTH: 3.031MI LANES EXIST/IMPROVED/ADDED: 4/ 4/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SA	1,000
TOTAL 439555 1	**1,000**
TOTAL 439555 1	**1,000**

FLORIDA DEPARTMENT OF TRANSPORTATION
OFFICE OF WORK PROGRAM
ANNUAL OBLIGATIONS REPORT

HIGHWAYS

ITEM NUMBER:438092 1 PROJECT DESCRIPTION:CR 901/VANDERBILT DR FROM VANDERBILT BEACH RD TO 109TH AVENUE N *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:SIDEWALK
ROADWAY ID:03000046 PROJECT LENGTH: 1.214MI LANES EXIST/IMPROVED/ADDED: 2/ 0/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
GFSU	96,348
SU	68,227
TOTAL 438092 1	**164,575**
TOTAL 438092 1	**164,575**

ITEM NUMBER:438093 1 PROJECT DESCRIPTION:GREEN BLVD FROM SANTA BARBARA BLVD TO SUNSHINE BLVD *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:BIKE LANE/SIDEWALK
ROADWAY ID:03000036 PROJECT LENGTH: 1.040MI LANES EXIST/IMPROVED/ADDED: 2/ 0/ 0

FUND CODE	2024
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	-177
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
GFSU	100,000
SU	110,530
TOTAL 438093 1	**210,353**
TOTAL 438093 1	**210,353**

ITEM NUMBER:438093 2 PROJECT DESCRIPTION:GREEN BLVD FROM SANTA BARBARA BLVD TO SUNSHINE BLVD *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:BIKE LANE/SIDEWALK
ROADWAY ID:03000036 PROJECT LENGTH: 1.040MI LANES EXIST/IMPROVED/ADDED: 2/ 0/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY COLLIER COUNTY	
GFSU	8,860
SU	825,278
TOTAL 438093 2	**834,138**
TOTAL 438093 2	**834,138**

ITEM NUMBER:439555 1 PROJECT DESCRIPTION:SR 951 FROM JUDGE JOLLEY BRIDGE TO FIDDLERS CREEK PARKWAY *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:RESURFACING
ROADWAY ID:03030000 PROJECT LENGTH: 3.031MI LANES EXIST/IMPROVED/ADDED: 4/ 4/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SA	1,000
TOTAL 439555 1	**1,000**
TOTAL 439555 1	**1,000**

FLORIDA DEPARTMENT OF TRANSPORTATION
OFFICE OF WORK PROGRAM
ANNUAL OBLIGATIONS REPORT

DATE RUN: 10/01/2024
TIME RUN: 15.20.41
MBROBLTP

HIGHWAYS

ITEM NUMBER:440435 2 PROJECT DESCRIPTION:COLLIER COUNTY TRAFFIC SIGNAL TIMING OPTIMIZATION AT VARIOUS LOCATIONS *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:TRAFFIC SIGNAL UPDATE
ROADWAY ID: PROJECT LENGTH: .000 LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	-23
TOTAL 440435 2	**-23**
TOTAL 440435 2	**-23**

ITEM NUMBER:440438 1 PROJECT DESCRIPTION:SAN MARCO RD FROM VINTAGE BAY DRIVE TO GOODLAND RD *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:BIKE PATH/TRAIL
ROADWAY ID:03060000 PROJECT LENGTH: 1.440MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY CITY OF MARCO ISLAND	
SU	-68,000
TOTAL 440438 1	**-68,000**
TOTAL 440438 1	**-68,000**

ITEM NUMBER:441480 1 PROJECT DESCRIPTION:EDEN PARK ELEMENTARY *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:SIDEWALK
ROADWAY ID: PROJECT LENGTH: .000 LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY COLLIER COUNTY	
SR2T	-3,581
TOTAL 441480 1	**-3,581**
TOTAL 441480 1	**-3,581**

ITEM NUMBER:441480 2 PROJECT DESCRIPTION:EDEN PARK ELEMENTARY *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:SIDEWALK
ROADWAY ID: PROJECT LENGTH: .000 LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SR2T	54,738
TOTAL 441480 2	**54,738**
TOTAL 441480 2	**54,738**

================
HIGHWAYS
================

ITEM NUMBER:441846 1 PROJECT DESCRIPTION:111TH AVE NORTH FROM BLUEBILL AVE BRIDGE TO 7TH ST NORTH *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:BIKE LANE/SIDEWALK
ROADWAY ID:03518000 PROJECT LENGTH: .877MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	1,000
TOTAL 441846 1	**1,000**
TOTAL 441846 1	**1,000**

ITEM NUMBER:441878 1 PROJECT DESCRIPTION:BALD EAGLE DRIVE FROM COLLIER BLVD TO OLD MARCO LN *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:SIDEWALK
ROADWAY ID:03510000 PROJECT LENGTH: .895MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	-745
TOTAL 441878 1	**-745**
TOTAL 441878 1	**-745**

ITEM NUMBER:441879 1 PROJECT DESCRIPTION:INLET DRIVE FROM ADDISON CT TO TRAVIDA TERRACE *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:SIDEWALK
ROADWAY ID:03000601 PROJECT LENGTH: .604MI LANES EXIST/IMPROVED/ADDED: 2/ 0/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY CITY OF MARCO ISLAND	
SA	1,000
TOTAL 441879 1	**1,000**
TOTAL 441879 1	**1,000**

ITEM NUMBER:441975 1 PROJECT DESCRIPTION:SR 90 (US 41) AT OASIS VISITOR CENTER *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:ADD TURN LANE(S)
ROADWAY ID:03040000 PROJECT LENGTH: .809MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 1

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	62,343
TOTAL 441975 1	**62,343**
TOTAL 441975 1	**62,343**

ITEM NUMBER:442685 5 PROJECT DESCRIPTION:HURRICANE IAN INTERSTATE (03) SIGN REPAIR/REPLACEMENT *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:EMERGENCY OPERATIONS
ROADWAY ID: PROJECT LENGTH: .000 LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
ER22	7,938

HIGHWAYS

PHASE: GRANTS AND MISCELLANEOUS / RESPONSIBLE AGENCY: MANAGED BY FDOT

FUND CODE	2024
ER22	66,150
TOTAL 442685 5	**74,088**
TOTAL 442685 5	**74,088**

ITEM NUMBER:446253 1 PROJECT DESCRIPTION:BICYCLE DETECTION CITY OF NAPLES ITS *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:ITS SURVEILLANCE SYSTEM
ROADWAY ID: PROJECT LENGTH: .000 LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: GRANTS AND MISCELLANEOUS / RESPONSIBLE AGENCY: MANAGED BY CITY OF NAPLES	
SU	179,065
TOTAL 446253 1	**179,065**
TOTAL 446253 1	**179,065**

ITEM NUMBER:446320 1 PROJECT DESCRIPTION:I-75 (SR 93) FROM TOLL BOOTH TO COLLIER BLVD *SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:RESURFACING
ROADWAY ID:03175000 PROJECT LENGTH: 1.585MI LANES EXIST/IMPROVED/ADDED: 3/ 3/ 0

FUND CODE	2024
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY FDOT	
NHPP	1,000
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
NHPP	168,877
TOTAL 446320 1	**169,877**
TOTAL 446320 1	**169,877**

ITEM NUMBER:446451 1 PROJECT DESCRIPTION:SR 45 (US 41) AT CR 886 (GOLDEN GATE PKWY) *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:INTERSECTION IMPROVEMENT
ROADWAY ID:03010000 PROJECT LENGTH: .006MI LANES EXIST/IMPROVED/ADDED: 6/ 0/ 0

FUND CODE	2024
PHASE: RIGHT OF WAY / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	596,025
TOTAL 446451 1	**596,025**
TOTAL 446451 1	**596,025**

ITEM NUMBER:446550 1 PROJECT DESCRIPTION:SHADOWLAWN ELEMENTARY - SRTS *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:SIDEWALK
ROADWAY ID:03000000 PROJECT LENGTH: .510MI LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SR2T	90,943
TOTAL 446550 1	**90,943**
TOTAL 446550 1	**90,943**

HIGHWAYS

ITEM NUMBER:448028 1 PROJECT DESCRIPTION:MARCO LOOP TRAIL STUDY *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:PRELIMINARY ENGINEERING
ROADWAY ID:03030000 PROJECT LENGTH: 13.241MI LANES EXIST/IMPROVED/ADDED: 3/ 3/ 0

FUND CODE	2024
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	1,000
TOTAL 448028 1	**1,000**
TOTAL 448028 1	**1,000**

ITEM NUMBER:448126 1 PROJECT DESCRIPTION:GOODLETTE-FRANK RD SIDEWALKS - VARIOUS LOCATIONS *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:SIDEWALK
ROADWAY ID: PROJECT LENGTH: .000 LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY FDOT	
TALU	116,350
TOTAL 448126 1	**116,350**
TOTAL 448126 1	**116,350**

ITEM NUMBER:448127 1 PROJECT DESCRIPTION:COLLIER ALTERNATE - MULTIPLE SEGMENTS *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:BIKE LANE/SIDEWALK
ROADWAY ID:03000039 PROJECT LENGTH: 1.667MI LANES EXIST/IMPROVED/ADDED: 2/ 2/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY CITY OF MARCO ISLAND	
CARU	1,117,947
GFSU	67,114
SU	340,956
TALU	439,992
TOTAL 448127 1	**1,966,009**
TOTAL 448127 1	**1,966,009**

ITEM NUMBER:448129 2 PROJECT DESCRIPTION:NAPLES MANOR SIDEWALK - VARIOUS LOCATION 4 SEGMENTS *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:SIDEWALK
ROADWAY ID: PROJECT LENGTH: .000 LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY FDOT	
SU	4,430
TOTAL 448129 2	**4,430**
TOTAL 448129 2	**4,430**

FLORIDA DEPARTMENT OF TRANSPORTATION
OFFICE OF WORK PROGRAM
ANNUAL OBLIGATIONS REPORT

================
HIGHWAYS
================

ITEM NUMBER:451283 1 PROJECT DESCRIPTION:16TH ST BRIDGE NE FROM GOLDEN GATE TO 12TH AVE NE *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:NEW BRIDGE CONSTRUCTION
ROADWAY ID:03000302 PROJECT LENGTH: 1.512MI LANES EXIST/IMPROVED/ADDED: 2/ 0/ 2

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY COLLIER COUNTY	
SU	3,300,000
TOTAL 451283 1	**3,300,000**
TOTAL 451283 1	**3,300,000**

ITEM NUMBER:452524 1 PROJECT DESCRIPTION:HURRICANE IAN PERMANENT LIGHTING REPAIR *SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:EMERGENCY OPERATIONS
ROADWAY ID:03010000 PROJECT LENGTH: 25.574MI LANES EXIST/IMPROVED/ADDED: 4/ 4/ 0

FUND CODE	2024
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY FDOT	
ER22	13,836
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
ER22	22,360
TOTAL 452524 1	**36,196**
TOTAL 452524 1	**36,196**
TOTAL DIST: 01	**18,143,019**
TOTAL HIGHWAYS	**18,143,019**

FLORIDA DEPARTMENT OF TRANSPORTATION
OFFICE OF WORK PROGRAM
ANNUAL OBLIGATIONS REPORT

================
PLANNING
================

ITEM NUMBER:439314 4 PROJECT DESCRIPTION:COLLIER COUNTY MPO FY 2022/2023-2023/2024 UPWP *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:TRANSPORTATION PLANNING
ROADWAY ID: PROJECT LENGTH: .000 LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: RESPONSIBLE AGENCY NOT AVAILABLE	
PL	489,429
TOTAL 439314 4	**489,429**
TOTAL 439314 4	**489,429**

ITEM NUMBER:439314 5 PROJECT DESCRIPTION:COLLIER COUNTY MPO FY 2024/2025-2025/2026 UPWP *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:TRANSPORTATION PLANNING
ROADWAY ID: PROJECT LENGTH: .000 LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY COLLIER COUNTY BOARD OF COUNTY	
PL	323,620
SU	379,416
TOTAL 439314 5	**703,036**
TOTAL 439314 5	**703,036**
TOTAL DIST: 01	**1,192,465**
TOTAL PLANNING	**1,192,465**

MISCELLANEOUS

ITEM NUMBER:435013 1 PROJECT DESCRIPTION:ITS INTEGRATE/STANDARDIZE NETWORK COMMUNICATION *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:ITS COMMUNICATION SYSTEM
ROADWAY ID:03000000 PROJECT LENGTH: .001MI LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: GRANTS AND MISCELLANEOUS / RESPONSIBLE AGENCY: MANAGED BY COLLIER COUNTY	
GFSU	-15,346
TOTAL 435013 1	**-15,346**
TOTAL 435013 1	**-15,346**

ITEM NUMBER:451803 1 PROJECT DESCRIPTION:HURRICANE IAN DISASTER RECOVERY - COLLIER COUNTY *NON-SIS*
DISTRICT:01 COUNTY:COLLIER TYPE OF WORK:EMERGENCY OPERATIONS
ROADWAY ID: PROJECT LENGTH: .000 LANES EXIST/IMPROVED/ADDED: 0/ 0/ 0

FUND CODE	2024
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT	
ER22	8,487
PHASE: GRANTS AND MISCELLANEOUS / RESPONSIBLE AGENCY: MANAGED BY FDOT	
ER22	58,220
TOTAL 451803 1	**66,707**
TOTAL 451803 1	**66,707**
TOTAL DIST: 01	**51,361**
TOTAL MISCELLANEOUS	**51,361**
GRAND TOTAL	19,386,845

Section F: FTA OBLIGATED PROJECTS FOR 2024

The Federal Transit Administration (FTA) produces an annual list of projects for which federal funds have been obligated in the preceding year. The list is shown below.

FY 2023 Obligated FTA Funds			
Description	FTA FL#	Awarded Amount	Executed Date
FY22 5307 and 5339 Funds; Super Grant; Capital, ADA, Operating; Collier & Lee County , Bonita Springs/Naples UZA, FL	FL-2023-011-00	$4,037,183.00	Wednesday, April 19, 2023
FY23 5307 and 5339 Funds; Super Grant; Capital, ADA, Operating; Collier & Lee County, Bonita Springs/Naples UZA, FL	FL-2023-084-00	$4,296,031.00	Friday, September 22, 2023

APPENDICES

APPENDIX A: FDOT'S STRATEGIC INTERMODAL SYSTEM FUNDING STRATEGY

The following pages illustrate the FDOT Strategic Intermodal System (SIS) Plans for District 1. The plans may be downloaded at: https://www.fdot.gov/planning/systems/sis/plans.shtm

Strategic Intermodal System Funding Strategy

First Five Year Plan

MULTI-MODAL

FY 2024/2025 through
FY 2028/2029

Capacity Projects on the Strategic Intermodal System

State of Florida Department of Transportation

SIS ADOPTED 1ST FIVE YEAR PROGRAM

District 1 Interstate Plan

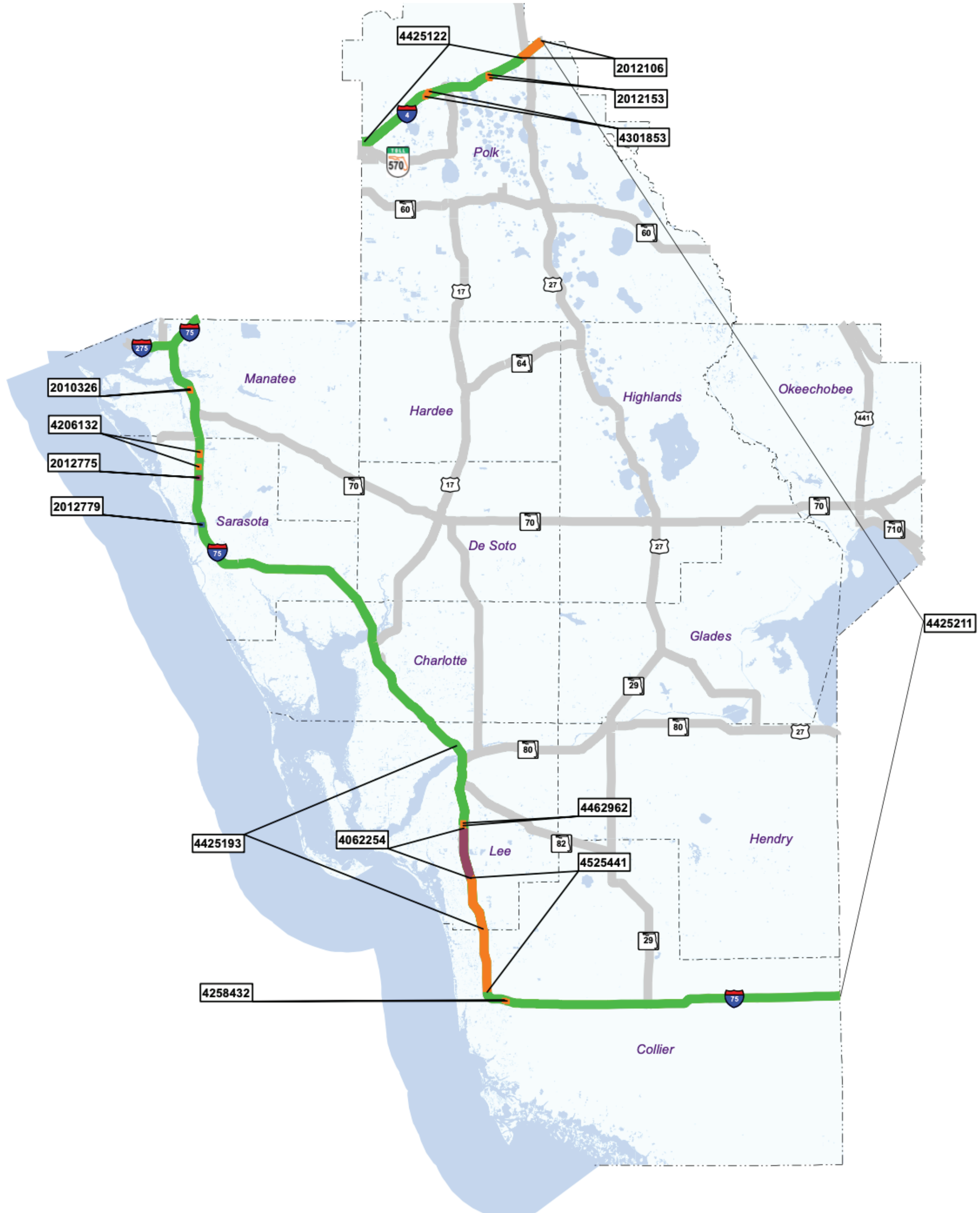
FM # ITEMSEG	COUNTY NAME	FACILITY	WORK MIX DESCRIPTION	IMPROVEMENT TYPE DESCRIPTION	2025	2026	2027	2028	2029	TOTAL STATE MANAGED	TOTAL DISTRICT MANAGED	TOTAL LOCAL FUNDS	TOTAL COST BY PHASE ROLL-UP					MLD
													PD&E	PE	ENV	ROW	CON	
4301853	Polk	I-4 (SR 400) AT SR 33 INTERCHANGE MODIFICATION	0236: INTERCHANGE - ADD LANES	M-INCH: MODIFY INTERCHANGE	$12,094	$0	$0	$0	$0	$1,939	$8,931	$1,223	$0	$0	$70	$1,945	$10,079	
2012153	Polk	I-4 (SR 400) AT SR 557	0231: INTERCHANGE (MODIFY)	M-INCH: MODIFY INTERCHANGE	$39	$0	$0	$0	$0	$38	$1	$0	$0	$1	$0	$0	$38	
4425122	Polk	I-4 (SR 400) FROM W OF SR 570 (POLK PARKWAY) TO W OF US 27 INTERCHANGE	9999: PDE/EMO STUDY	PDE: PROJECT DEV. & ENV.t	$25	$0	$0	$0	$0	$0	$25	$0	$25	$0	$0	$0	$0	
2012106	Polk	I-4 (SR 400) MANAGED LANES FROM WEST OF US 27 TO OSCEOLA	0213: ADD LANES AND RECONSTRUCT	A4-10: ADD 4 TO BUILD 10 LANES	$89,586	$0	$514,156	$0	$0	$173,253	$430,489	$0	$0	$7,251	$7,200	$85,329	$503,962	
2012775	Sarasota	I-75 (SR 93) AT BEE RIDGE ROAD	0236: INTERCHANGE - ADD LANES	M-INCH: MODIFY INTERCHANGE	$9,006	$9,900	$0	$0	$200	$18,588	$239	$280	$0	$1,624	$200	$17,282	$0	
4206132	Sarasota	I-75 (SR 93) AT FRUITVILLE ROAD/CR 780	0236: INTERCHANGE - ADD LANES	M-INCH: MODIFY INTERCHANGE	$7,981	$30	$535	$0	$0	$0	$8,386	$161	$0	$390	$560	$0	$7,596	
4258432	Collier	I-75 (SR 93) AT SR 951	0231: INTERCHANGE (MODIFY)	M-INCH: MODIFY INTERCHANGE	$291	$0	$0	$0	$0	$0	$151	$140	$2	$4	$100	$0	$185	
4425193	Lee	I-75 (SR 93) FROM COLLIER/LEE COUNTY LINE TO SR 78 (BAYSHORE RD)	9999: PDE/EMO STUDY	PDE: PROJECT DEV. & ENV.t	$38	$0	$0	$0	$0	$0	$38	$0	$38	$0	$0	$0	$0	
4062254	Lee	I-75 (SR 93) FROM S OF CORKSCREW ROAD TO S OF DANIELS PARKWAY	0213: ADD LANES AND RECONSTRUCT	A2-6: ADD 2 TO BUILD 6 LANES	$1,185	$0	$0	$0	$0	$1,185	$0	$0	$0	$0	$0	$1,185	$0	
2010326	Manatee	I-75 AT SR 64	0231: INTERCHANGE (MODIFY)	M-INCH: MODIFY INTERCHANGE	$459	$0	$0	$0	$0	$0	$459	$0	$0	$0	$0	$0	$459	
2012779	Sarasota	I-75 AT SR 681 INTERCHANGE IMPROVEMENTS	0236: INTERCHANGE - ADD LANES	M-INCH: MODIFY INTERCHANGE	$0	$0	$0	$0	$5,511	$5,511	$0	$0	$2,501	$3,010	$0	$0	$0	
4525441	Dist/St Wide	I-75 FROM N OF GOLDEN GATE TO S OF CORKSCREW	0213: ADD LANES AND RECONSTRUCT	A1-4: ADD 1 TO BUILD 4 LANES	$8	$173,200	$449,373	$0	$0	$0	$622,580	$0	$4	$2,213	$0	$173,200	$447,163	
4425211	Dist/St Wide	INTERSTATE PROGRAM MANAGER - GEC	9999: PDE/EMO STUDY	PDE: PROJECT DEV. & ENV.t	$915	$2,000	$2,000	$2,000	$2,000	$0	$8,915	$0	$8,915	$0	$0	$0	$0	
4462962	Lee	SR 93 (I-75) AT CR 876 / DANIELS PARKWAY	0231: INTERCHANGE (MODIFY)	M-INCH: MODIFY INTERCHANGE	$42,892	$0	$0	$0	$0	$38,187	$500	$4,206	$0	$248	$0	$0	$42,644	
				ANNUAL TOTALS	$164,519	$185,130	$966,064	$2,000	$7,711	$238,701	$1,080,714	$6,010	$11,485	$14,741	$8,130	$278,941	$1,012,126	

Notes

PD&E=Project Development & Environmental; Phase Group - 2 and Phase Type - all but 9
PE=Preliminary Engineering; Phase Group - 3; Phase Type - all but 9
ENV=EnvironmentalMitigation: Phase Group - C; Phase Type - all but 9

ROW=Right-of-Way; Phase Group - 4 and all Phase Type - all but 9
CON=Construction and Support (may include Grants); Phase Group - 5 & 6 and Phase Type - all but 9
MLD=Missing project location (project not in map)

(1) All Values in Thousands of "As Programmed" Dollars
(2) Project cost are subject to change
(3) TOTAL LOCAL FUNDS include all funds that start with LF fund code



District 1

First Five Year Interstate Plan

STRATEGIC INTERMODAL SYSTEM

Capacity Improvement Projects

Adopted Work Program

FY 2024/2025 through FY 2028/2029
(as of July 1, 2024)

Legend

Project Phase

- Project Development & Enviornment
- Environmental Mitigation
- Preliminary Engineering
- Right-Of-Way
- Construction

Notes

Projects color coded by highest project phase. Some projects may overlap on map. Project costs are subject to change.

0 10 20 40
Miles

FDOT HIGHWAY SIS

District 1 Non - Interstate Plan

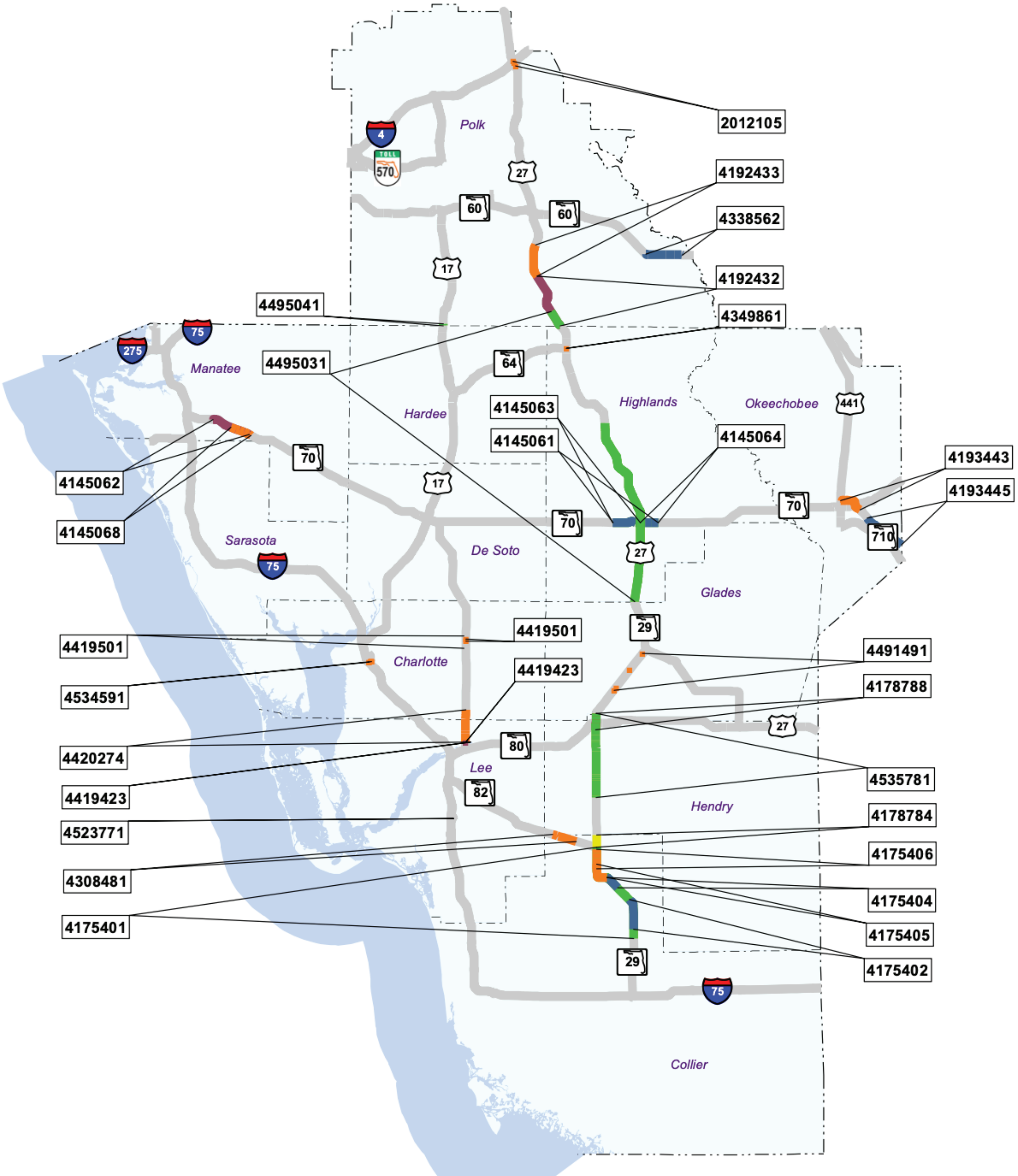
FM # ITEMSEG	COUNTY NAME	FACILITY	WORK MIX DESCRIPTION	IMPROVEMENT TYPE DESCRIPTION	2025	2026	2027	2028	2029	TOTAL STATE MANAGED	TOTAL DISTRICT MANAGED	TOTAL LOCAL FUNDS	TOTAL COST BY PHASE ROLL-UP					MLD
													PD&E	PE	ENV	ROW	CON	
2012105	Polk	I-4 AT US 27 (SR 25)	0236: INTERCHANGE - ADD LANES	M-INCH: MODIFY INTERCHANGE	$2,084	$5,410	$152,474	$0	$0	**$159,969**	**$0**	**$0**	**$10**	**$2,061**	**$500**	**$5,921**	**$151,477**	
4523771	Lee	I-75 REST AREA NS	9999: PDE/EMO STUDY	PDE: PROJECT DEV. & ENV.t	$20	$0	$0	$0	$0	**$0**	**$20**	**$0**	**$20**	**$0**	**$0**	**$0**	**$0**	
4534591	Charlotte	JONES LOOP ROAD AND PIPER ROAD INTERSECTION IMPROVEMENTS	0235: ROUNDABOUT	M-INT: MODIFY INTERSECTION	$0	$0	$0	$0	$3,719	**$0**	**$3,719**	**$0**	**$0**	**$501**	**$0**	**$0**	**$3,218**	
4495041	Dist/St Wide	REGIONAL PLANNING STUDY	9999: PDE/EMO STUDY	PDE: PROJECT DEV. & ENV.t	$4,183	$0	$0	$0	$0	**$0**	**$4,183**	**$0**	**$4,183**	**$0**	**$0**	**$0**	**$0**	
4192433	Polk	SR 25 (US 27) FROM CR 630A TO PRESIDENTS DRIVE	0213: ADD LANES AND RECONSTRUCT	A2-6: ADD 2 TO BUILD 6 LANES	$72	$0	$0	$0	$500	**$500**	**$72**	**$0**	**$0**	**$1**	**$70**	**$1**	**$500**	
4192432	Polk	SR 25 (US 27) FROM HIGHLANDS COUNTY LINE TO CR 630A	0213: ADD LANES AND RECONSTRUCT	A2-6: ADD 2 TO BUILD 6 LANES	$151	$0	$0	$0	$0	**$0**	**$151**	**$0**	**$0**	**$0**	**$150**	**$1**	**$0**	
4535781	Hendry	SR 29 BYPASS STUDY FROM CR 832 TO WHIDDEN RD	9999: PDE/EMO STUDY	PDE: PROJECT DEV. & ENV.t	$0	$0	$0	$0	$470	**$0**	**$470**	**$0**	**$470**	**$0**	**$0**	**$0**	**$0**	
4178788	Hendry	SR 29 FROM CR 80A (COWBOY WAY) TO CR 731 (WHIDDEN RD)	0213: ADD LANES AND RECONSTRUCT	A2-4: ADD 2 TO BUILD 4 LANES	$12,451	$10,323	$0	$0	$0	**$22,648**	**$1**	**$125**	**$0**	**$129**	**$200**	**$22,444**	**$0**	
4175405	Collier	SR 29 FROM CR 846 E TO N OF NEW MARKET ROAD W	0002: NEW ROAD CONSTRUCTION	NR: NEW ROAD	$9,126	$6,700	$83,060	$0	$0	**$349**	**$98,537**	**$0**	**$0**	**$928**	**$640**	**$14,258**	**$83,060**	
4175406	Collier	SR 29 FROM N OF NEW MARKET RD TO SR 82	0213: ADD LANES AND RECONSTRUCT	A2-4: ADD 2 TO BUILD 4 LANES	$7,272	$1,596	$50,276	$0	$0	**$0**	**$59,144**	**$0**	**$0**	**$5,161**	**$980**	**$2,376**	**$50,627**	
4175401	Collier	SR 29 FROM OIL WELL ROAD TO SR 82	9999: PDE/EMO STUDY	PDE: PROJECT DEV. & ENV.t	$39	$0	$0	$0	$0	**$0**	**$39**	**$0**	**$39**	**$0**	**$0**	**$0**	**$0**	
4175402	Collier	SR 29 FROM OIL WELL ROAD TO SUNNILAND NURSERY ROAD	0213: ADD LANES AND RECONSTRUCT	A2-4: ADD 2 TO BUILD 4 LANES	$300	$0	$0	$0	$0	**$300**	**$0**	**$0**	**$0**	**$300**	**$0**	**$0**	**$0**	
4175404	Collier	SR 29 FROM S OF AGRICULTURE WAY TO CR 846 E	0213: ADD LANES AND RECONSTRUCT	A2-4: ADD 2 TO BUILD 4 LANES	$18	$0	$0	$0	$0	**$0**	**$18**	**$0**	**$0**	**$18**	**$0**	**$0**	**$0**	
4491491	Glades	SR 29 FROM SR 78 TO CR 74	0020: BRIDGE NEW STRUCTURE	BRIDGE: BRIDGE	$2,700	$0	$0	$0	$30,611	**$0**	**$33,311**	**$0**	**$0**	**$2,700**	**$0**	**$0**	**$30,611**	
4178784	Collier	SR 29 FROM SR 82 TO HENDRY C/L	0213: ADD LANES AND RECONSTRUCT	A2-4: ADD 2 TO BUILD 4 LANES	$50	$0	$0	$0	$0	**$50**	**$0**	**$0**	**$0**	**$0**	**$50**	**$0**	**$0**	
4419501	Charlotte	SR 31 FROM CR 74 TO CR 74	0235: ROUNDABOUT	M-INT: MODIFY INTERSECTION	$508	$0	$0	$0	$0	**$300**	**$208**	**$0**	**$0**	**$1**	**$0**	**$205**	**$301**	
4419423	Lee	SR 31 FROM SR 80 (PALM BEACH BLVD) TO SR 78 (BAYSHORE RD)	0213: ADD LANES AND RECONSTRUCT	BRIDGE: BRIDGE	$30,049	$0	$0	$0	$0	**$0**	**$30,049**	**$0**	**$0**	**$0**	**$0**	**$30,049**	**$0**	
4338562	Polk	SR 60 FROM CR 630 TO GRAPE HAMMOCK RD	0213: ADD LANES AND RECONSTRUCT	A2-4: ADD 2 TO BUILD 4 LANES	$107	$0	$0	$0	$0	**$107**	**$0**	**$0**	**$0**	**$107**	**$0**	**$0**	**$0**	
4145068	Manatee	SR 70 FROM BOURNESIDE BLVD TO WATERBURY RD	0213: ADD LANES AND RECONSTRUCT	A2-4: ADD 2 TO BUILD 4 LANES	$8,835	$0	$0	$1	$0	**$0**	**$8,836**	**$0**	**$0**	**$0**	**$0**	**$0**	**$8,836**	
4145061	Highlands	SR 70 FROM JEFFERSON AVE TO CR 29	9999: PDE/EMO STUDY	PDE: PROJECT DEV. & ENV.t	$13	$0	$0	$0	$0	**$0**	**$13**	**$0**	**$13**	**$0**	**$0**	**$0**	**$0**	
4145063	Highlands	SR 70 FROM JEFFERSON AVE TO US 27	0213: ADD LANES AND RECONSTRUCT	A2-4: ADD 2 TO BUILD 4 LANES	$6,496	$0	$0	$0	$0	**$0**	**$6,496**	**$0**	**$0**	**$6,496**	**$0**	**$0**	**$0**	
4145062	Manatee	SR 70 FROM LORRAINE RD TO CR 675/WATERBURY ROAD	9999: PDE/EMO STUDY	PDE: PROJECT DEV. & ENV.t	$1,801	$0	$0	$0	$0	**$0**	**$1,801**	**$0**	**$0**	**$3**	**$50**	**$1,748**	**$0**	
4145064	Highlands	SR 70 FROM US 27 TO CR 29	0213: ADD LANES AND RECONSTRUCT	A2-4: ADD 2 TO BUILD 4 LANES	$0	$0	$0	$4,186	$0	**$4,186**	**$0**	**$0**	**$0**	**$4,186**	**$0**	**$0**	**$0**	
4193445	Okeechobee	SR 710 FROM SHERMAN WOOD RANCHES TO CR 714 (MARTIN C/L)	0213: ADD LANES AND RECONSTRUCT	A2-4: ADD 2 TO BUILD 4 LANES	$84	$0	$0	$0	$0	**$84**	**$0**	**$0**	**$0**	**$84**	**$0**	**$0**	**$0**	
4193443	Okeechobee	SR 710 FROM US 441 TO L-63 CANAL	0002: NEW ROAD CONSTRUCTION	NR: NEW ROAD	$7,800	$5,969	$0	$0	$95,730	**$108,863**	**$606**	**$31**	**$0**	**$6**	**$0**	**$13,764**	**$95,730**	
4308481	Collier	SR 82 FROM HENDRY COUNTY LINE TO GATOR SLOUGH LANE	0213: ADD LANES AND RECONSTRUCT	A2-4: ADD 2 TO BUILD 4 LANES	$3,317	$0	$0	$0	$0	**$2,539**	**$778**	**$0**	**$0**	**$3**	**$400**	**$0**	**$2,914**	
4420274	Dist/St Wide	STATE SIB LOAN FOR SR 31 (BABCOCK RANCH) FROM SR 78 (BAYSHORE RD)	0213: ADD LANES AND RECONSTRUCT	A4-6: ADD 4 TO BUILD 6 LANES	$8,823	$0	$0	$0	$0	**$4,541**	**$0**	**$4,282**	**$0**	**$0**	**$0**	**$8,764**	**$59**	
4349861	Highlands	US 27 AT SR 64	0233: INTERSECTION (MODIFY)	M-INT: MODIFY INTERSECTION	$93	$0	$0	$0	$0	**$93**	**$1**	**$0**	**$0**	**$0**	**$0**	**$0**	**$93**	
4495031	Dist/St Wide	US 27 CORRIDOR ALTERNATIVE STUDY	9999: PDE/EMO STUDY	PDE: PROJECT DEV. & ENV.t	$13,069	$0	$0	$0	$0	**$0**	**$13,069**	**$0**	**$13,069**	**$0**	**$0**	**$0**	**$0**	
				ANNUAL TOTALS	**$119,461**	**$29,998**	**$285,810**	**$4,187**	**$131,030**	**$304,529**	**$261,522**	**$4,438**	**$17,804**	**$22,685**	**$3,040**	**$99,531**	**$427,426**	

Notes

PD&E=Project Development & Environmental; Phase Group - 2 and Phase Type - all but 9
PE=Preliminary Engineering; Phase Group - 3; Phase Type - all but 9
ENV=EnvironmentalMitigation: Phase Group - C; Phase Type - all but 9

ROW=Right-of-Way; Phase Group - 4 and all Phase Type - all but 9
CON=Construction and Support (may include Grants); Phase Group - 5 & 6 and Phase Type - all but 9
MLD=Missing project location (project not in map)

(1) All Values in Thousands of "As Programmed" Dollars
(2) Project cost are subject to change
(3) TOTAL LOCAL FUNDS include all funds that start with LF fund code



District 1

First Five Year Non - Interstate Plan

STRATEGIC INTERMODAL SYSTEM

Capacity Improvement Projects

Adopted Work Program

FY 2024/2025 through FY 2028/2029
(as of July 1, 2024)

Legend

Project Phase

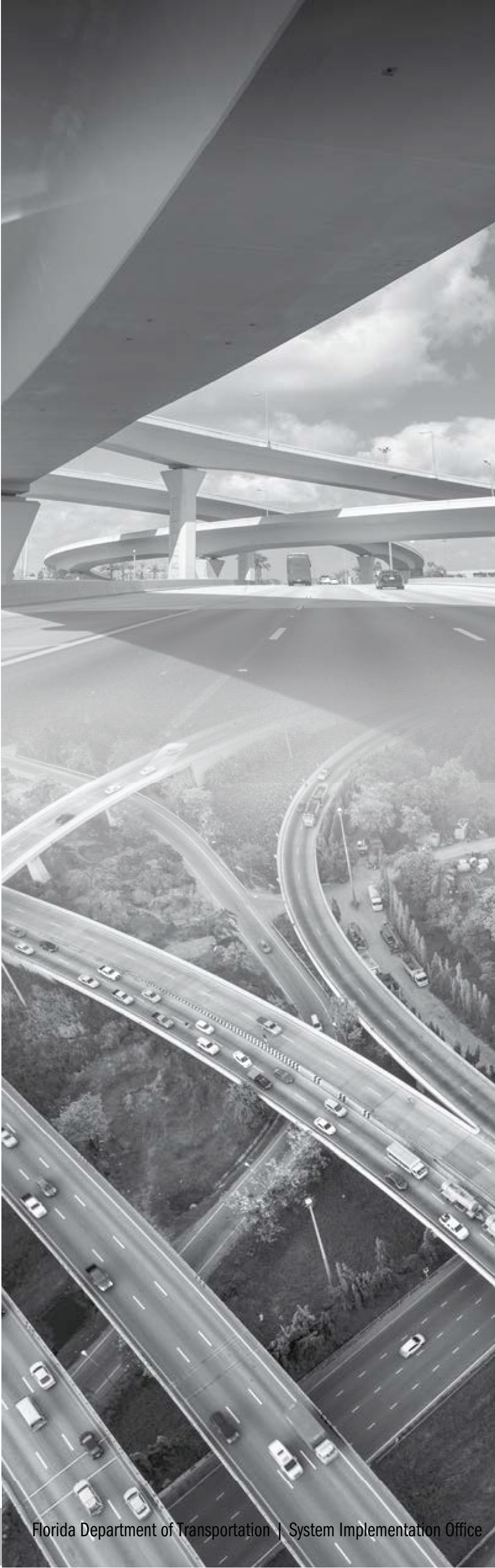
- Project Development & Enviornment
- Environmental Mitigation
- Preliminary Engineering
- Right-Of-Way
- Construction

Notes

Projects color coded by highest project phase. Some projects may overlap on map. Project costs are subject to change.

0 10 20 40
Miles

HIGHWAY



Strategic Intermodal System Funding Strategy

Second Five Year Plan

MULTI-MODAL

FY 2029/2030 through
FY 2033/2034

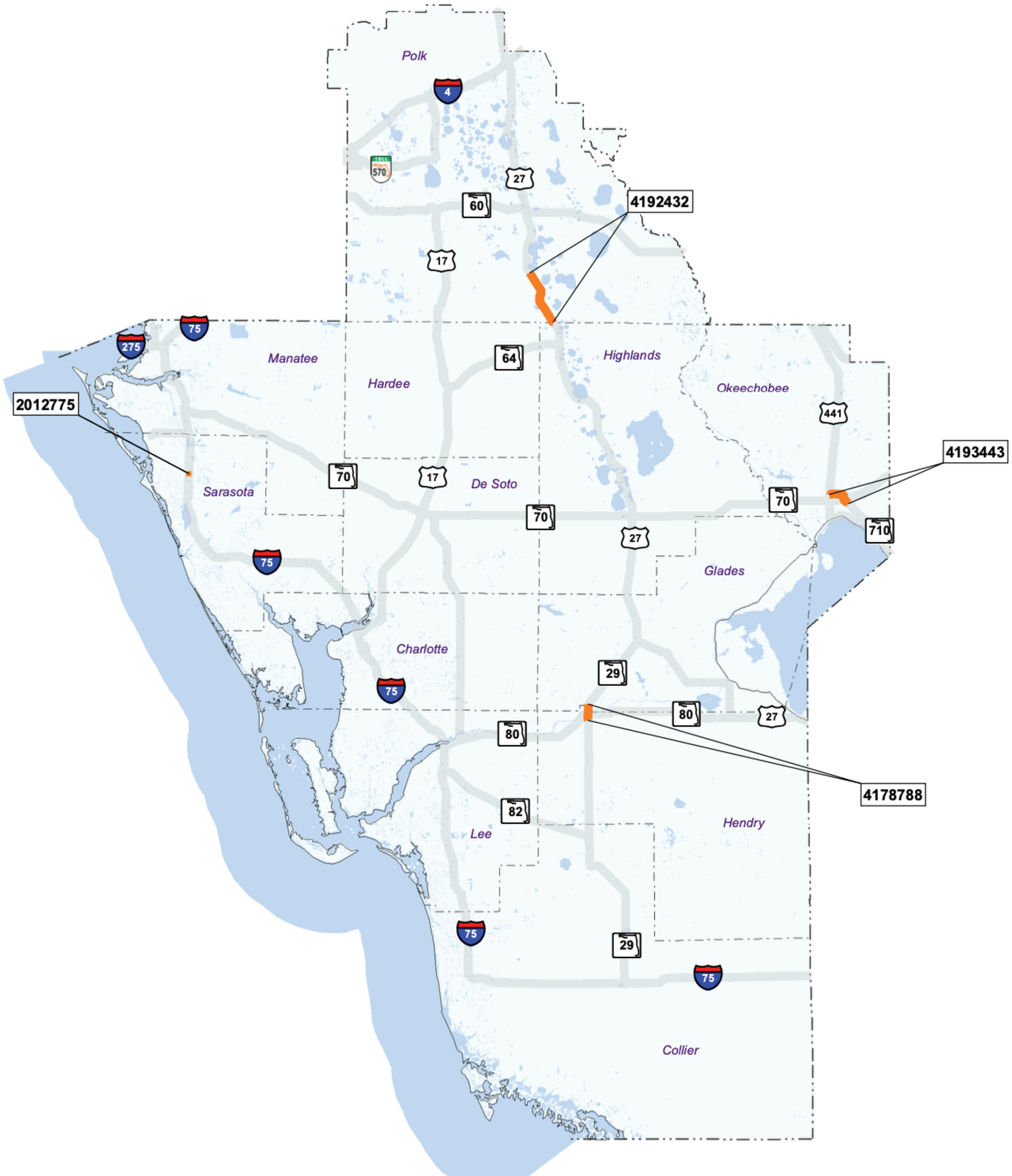
Capacity Projects on the Strategic Intermodal System
State of Florida Department of Transportation

District 1 Highway Plan

FM # ITEMSEG	COUNTY NAME	FACILITY	WORK MIX DESCRIPTION	IMPROVEMENT TYPE DESCRIPTION	2030	2031	2032	2033	2034	TOTAL STATE MANAGED	TOTAL DISTRICT MANAGED	TOTAL LOCAL FUNDS	TOTAL COST BY PHASE ROLL-UP					MLD
													PD&E	PE	ENV	ROW	CON	
2012775	Sarasota	I-75 (SR 93) AT BEE RIDGE ROAD	0236: INTERCHANGE - ADD LANES	M-INCH: MODIFY INTERCHANGE	$182,106	$0	$0	$0	$0	**$179,106**	**$0**	**$3,000**	**$0**	**$0**	**$300**	**$0**	**$181,806**	
4192432	Polk	SR 25 (US 27) FROM HIGHLANDS COUNTY LINE TO CR 630A	0213: ADD LANES AND RECONSTRUCT	A2-6: ADD 2 TO BUILD 6 LANES	$0	$0	$0	$3,850	$22,400	**$23,370**	**$550**	**$2,330**	**$0**	**$850**	**$0**	**$3,000**	**$22,400**	
4178788	Hendry	SR 29 FROM CR 80A (COWBOY WAY) TO CR 731 (WHIDDEN RD)	0213: ADD LANES AND RECONSTRUCT	A2-4: ADD 2 TO BUILD 4 LANES	$120	$0	$0	$0	$0	**$120**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$120**	
4193443	Okeechobee	SR 710 FROM US 441 TO L-63 CANAL	0002: NEW ROAD CONSTRUCTION	NR: NEW ROAD	$0	$2,426	$0	$0	$0	**$1,901**	**$0**	**$525**	**$0**	**$0**	**$0**	**$0**	**$2,426**	
				ANNUAL TOTALS	**$182,226**	**$2,426**	**$0**	**$3,850**	**$22,400**	**$204,497**	**$550**	**$5,855**	**$0**	**$850**	**$300**	**$3,000**	**$206,752**	

All Values in Thousands of "As Programmed" Dollars

PD&E - Project Development & Environmental;
PE - Preliminary Engineering;
ENV - Environmental Mitigation;
ROW - Right-Of-Way;
CON - Construction & Support (may Include Grants);
TOTAL LOCAL FUNDS include all funds that start with LF fund code.



District 1

Second Five Year

STRATEGIC INTERMODAL SYSTEM

Capacity Improvement Projects

Adopted Work Program

FY 2029/2030 through FY 2033/2034
(as of July 1, 2024)

Legend

Project Phase

- Project Development & Enviornment
- Environmental Mitigation
- Preliminary Engineering
- Right-Of-Way
- Construction

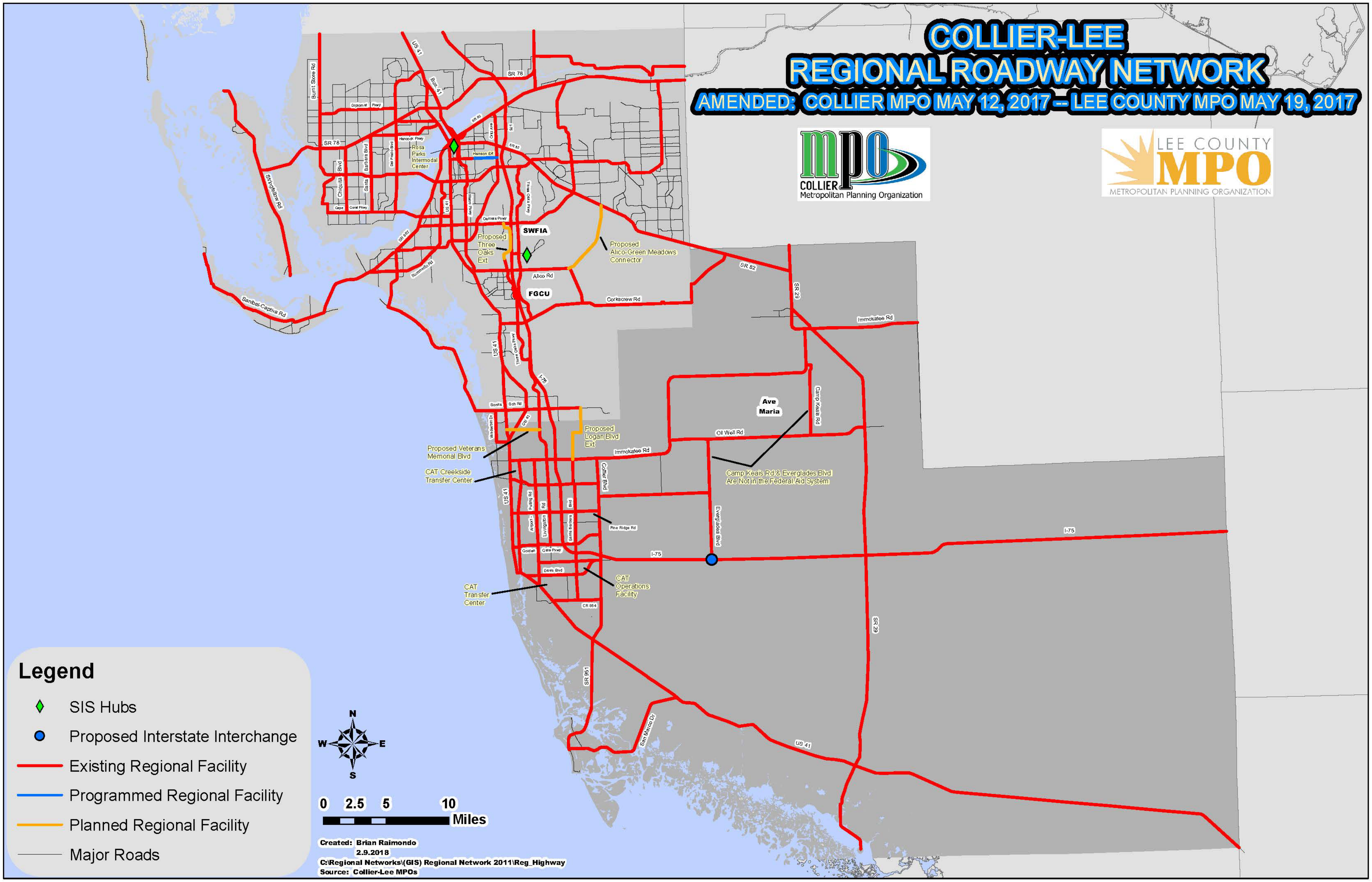
Notes

Projects color coded by highest project phase. Some projects may overlap on map. Project costs are subject to change.

0 10 20 40
Miles

FDOT HIGHWAY SIS

APPENDIX B: COLLIER-LEE REGIONAL HIGHWAY MAP


COLLIER-LEE
REGIONAL ROADWAY NETWORK
AMENDED: COLLIER MPO MAY 12, 2017 -- LEE COUNTY MPO MAY 19, 2017
mpo
COLLIER
Metropolitan Planning Organization
LEE COUNTY
MPO
METROPOLITAN PLANNING ORGANIZATION
SWFIA
FGCU
Ave Maria
Proposed Three Oaks Ext
Proposed Alico-Green Meadows Connector
Proposed Logan Blvd Ext
Proposed Veterans Memorial Blvd
CAT Creekside Transfer Center
Camp Keais Rd & Everglades Blvd Are Not in the Federal Aid System
CAT Operations Facility
CAT Transfer Center
Rosa Parks Intermodal Center
SR 78
SR 82
SR 29
Alico Rd
Corkscrew Rd
Immokalee Rd
Oil Well Rd
Camp Keais Rd
Collier Blvd
Pine Ridge Rd
Everglades Blvd
I-75
US 41
CR 864
SR 951
San Marco Dr
Sanibel-Captiva Rd
Burnt Store Rd
Legend
SIS Hubs
Proposed Interstate Interchange
Existing Regional Facility
Programmed Regional Facility
Planned Regional Facility
Major Roads
N
S
W
E
0 2.5 5 10
Miles
Created: Brian Raimondo
2.9.2018
C:\Regional Networks\(GIS) Regional Network 2011\Reg_Highway
Source: Collier-Lee MPOs

APPENDIX C: AIRPORT CAPITAL IMPROVEMENT PROGRAMS (JACIP)

INCLUDES:
EVERGLADES AIRPARK
IMMOKALEE REGIONAL AIRPORT
MARCO ISLAND AIRPORT
NAPLES MUNICIPAL AIRPORT

The Naples and Collier County Airport Authorities develop annual aviation project priorities. These project priorities are listed in their Joint Automated Capital Improvement Programs. (JACIP) and capital improvement plans for each of the airports within the Collier MPO planning area. These programs and plans have been coordinated with the Florida Department of Transportation (FDOT) and the Federal Aviation Administration (FAA).

AIRPORT SPONSOR REQUESTED FUNDING - CAPITAL IMPROVEMENT PLAN SUMMARY

Airport: Everglades Airpark **Local ID:** X01 **NPIAS No.:** 12-0021
Sponsor: Collier County Airport Authority **Sponsor ID:** MKY **Site No.:** 03182.*A

Project Description:		Fed Priority	Sponsor	Sponsor Year	Federal	State	Local	
					Sponsor Requested Funding Breakdown			
Wildlife Hazard Site Study								
UPIN: PFL0013246	**FDOT Item No.:**	2	2	2027	$0	$40,000	$10,000	$50,000
Land Acquisition - To expand aeronautical activities								
UPIN: PFL0015153	**FDOT Item No.:**	1	1	2027	$850,000	$47,222	$47,222	$944,444
Yearly Total 2027					$850,000	$87,222	$57,222	$994,444
Install Two Light PAPI System								
UPIN: PFL0008819	**FDOT Item No.:**	1	1	2028	$178,200	$9,900	$9,900	$198,000
Yearly Total 2028					$178,200	$9,900	$9,900	$198,000
Design, Permit, Construct T-Hangar								
UPIN: PFL0008311	**FDOT Item No.:**	1	1	2029	$0	$1,200,000	$300,000	$1,500,000
Airport Master Plan Update								
UPIN: PFL0010198	**FDOT Item No.:**	2	2	2029	$224,000	$28,000	$28,000	$280,000
Yearly Total 2029					$224,000	$1,228,000	$328,000	$1,780,000
Design, Permit, Bid & Construct General Aviation Terminal Building								
UPIN: PFL0008821	**FDOT Item No.:**	1	1	2030	$0	$800,000	$200,000	$1,000,000
Yearly Total 2030					$0	$800,000	$200,000	$1,000,000
Design, Permit, Bid and Construct Apron								
UPIN: PFL0008820	**FDOT Item No.:**	2	2	2031	$150,000	$192,500	$57,500	$400,000
Design, Permit & Bid Runway 15/33 Rejuvenation - Crack Seal & Slurry								
UPIN: PFL0012390	**FDOT Item No.:**	1	1	2031	$150,000	$8,500	$8,500	$167,000
Yearly Total 2031					$300,000	$201,000	$66,000	$567,000

Land Acquisition - To Protect Airport from Large Residential Development / Incompatible land use

UPIN:	PFL0015013	**FDOT Item No.:**	1	1	2032	$8,800,000	$1,100,000	$1,100,000	$11,000,000
Yearly Total	**2032**					$8,800,000	$1,100,000	$1,100,000	$11,000,000

AIRPORT SPONSOR REQUESTED FUNDING - CAPITAL IMPROVEMENT PLAN SUMMARY

Airport: Immokalee Regional Airport **Local ID:** IMM **NPIAS No.:** 12-0031

Sponsor: Collier County Airport Authority **Sponsor ID:** MKY **Site No.:** 03245.*A

Project Description:	UPIN:	FDOT Item No.:	Fed Priority	Sponsor	Sponsor Year	Sponsor Requested Funding Breakdown			
						Federal	State	Local	
Acquire and Install Emergency Generator	PFL0012650	453536 1			2024	$0	$159,280	$39,820	$199,100
Rehabilitate and Replace Fuel Farm	PFL0012903	446361 1			2024	$0	$960,000	$240,000	$1,200,000
Yearly Total 2024						$0	$1,119,280	$279,820	$1,399,100
Design Airpark Boulevard Extension	PFL0008317	446358 1			2026	$0	$696,000	$174,000	$870,000
Design Airport Maintenance and Operations Building	PFL0008318				2026	$0	$296,000	$74,000	$370,000
Wildlife Hazard Site Study	PFL0013247				2026	$0	$30,000	$7,500	$37,500
Yearly Total 2026						$0	$1,022,000	$255,500	$1,277,500
Environmental Assessment (EA) for Runway Extension with Benefit Cost Analysis (BCA)	PFL0005823	441784 1			2027	$540,000	$30,000	$30,000	$600,000
Construct Airport Maintenance and Operations Building	PFL0008320				2027	$0	$2,264,000	$566,000	$2,830,000
Construct Airpark Boulevard Extension	PFL0008321				2027	$0	$2,792,000	$698,000	$3,490,000
Yearly Total 2027						$540,000	$5,086,000	$1,294,000	$6,920,000
Design & Construct Runway Extension 9/27/Extend Taxiway B	PFL0005828				2029	$8,550,000	$225,000	$225,000	$9,000,000
Design and permit construction of extension of runway 09/27 and Taxiway B	PFL0008315		5		2029	$1,620,000	$90,000	$90,000	$1,800,000

Design, Permit and Construct Hangar Facilities							
UPIN: PFL0013387	**FDOT Item No.:**	2029	$0	$4,080,000	$1,020,000	$5,100,000
Yearly Total	**2029**		$10,170,000	$4,395,000	$1,335,000	$15,900,000
Rehabilitate Runway 18/36						
UPIN: PFL0009405	**FDOT Item No.:**	2031	$204,000	$25,500	$25,500	$255,000
Yearly Total	**2031**		$204,000	$25,500	$25,500	$255,000
Design, Permit, Construct Aircraft Storage Hangars						
UPIN: PFL0008323	**FDOT Item No.:**	2033	$0	$4,296,000	$1,074,000	$5,370,000
Yearly Total	**2033**		$0	$4,296,000	$1,074,000	$5,370,000
Land acquisition for runway extension (103 acres) & PHU Mitigation						
UPIN: PFL0003877	**FDOT Item No.:**	2035	$3,042,000	$169,000	$169,000	$3,380,000
Yearly Total	**2035**		$3,042,000	$169,000	$169,000	$3,380,000

AIRPORT SPONSOR REQUESTED FUNDING - CAPITAL IMPROVEMENT PLAN SUMMARY

Airport: Marco Island Executive Airport **Local ID:** MKY **NPIAS No.:** 12-0142
Sponsor: Collier County Airport Authority **Sponsor ID:** MKY **Site No.:** 03315.44*A

Project Description:			Fed Priority	Sponsor	Sponsor Year	Federal	State	Local	
						Sponsor Requested Funding Breakdown			
Expand Fuel Farm Capacity									
UPIN: PFL0012374	**FDOT Item No.:**	446362 1	1	1	2024	$0	$360,000	$90,000	$450,000
Yearly Total	**2024**					$0	$360,000	$90,000	$450,000
Construct Aircraft Operations/Maintenance/GSE Facility									
UPIN: PFL0012373	**FDOT Item No.:**	446360 1	2	2	2025	$0	$960,000	$240,000	$1,200,000
Acquire 5,000 Gallon or larger Jet-A Refueler Truck									
UPIN: PFL0013062	**FDOT Item No.:**	450316 1	1	1	2025	$0	$267,904	$66,976	$334,880
Yearly Total	**2025**					$0	$1,227,904	$306,976	$1,534,880
Design, Permit & Bid Apron Lighting									
UPIN: PFL0012904	**FDOT Item No.:**				2026	$1,701,000	$94,500	$94,500	$1,890,000
Yearly Total	**2026**					$1,701,000	$94,500	$94,500	$1,890,000
New Complete MKY Master Plan									
UPIN: PFL0015016	**FDOT Item No.:**	455456 1			2027	$700,000	$38,889	$38,889	$777,778
Yearly Total	**2027**					$700,000	$38,889	$38,889	$777,778
Design, Permit & Bid Airfield Lighting System									
UPIN: PFL0014709	**FDOT Item No.:**				2028	$0	$752,000	$188,000	$940,000
Replace Rotating Beacon and Tower Mast									
UPIN: PFL0015154	**FDOT Item No.:**				2028	$135,000	$7,500	$7,500	$150,000
Yearly Total	**2028**					$135,000	$759,500	$195,500	$1,090,000

AIRPORT SPONSOR REQUESTED FUNDING - CAPITAL IMPROVEMENT PLAN SUMMARY

Airport: Naples Municipal Airport **Local ID:** APF **NPIAS No.:** 12-0053
Sponsor: City of Naples Airport Authority **Sponsor ID:** APF **Site No.:** 03379.*A

Project Description:	UPIN	FDOT Item No.:	Fed Priority	Sponsor	Sponsor Year	Federal	State	Local	
						Sponsor Requested Funding Breakdown			
Box and T-Hangar Design/Construct - South Quadrant	PFL0011685	446353 1			2025	$0	$2,500,000	$2,500,000	$5,000,000
North Road Terminal Apron Improvements- Phase 1-Design and Construction	PFL0012395	454733 1			2025	$8,077,500	$448,750	$448,750	$8,975,000
North Road Terminal Apron Improvements Phase 2 - Design and Construct	PFL0013295				2025	$7,762,500	$431,250	$431,250	$8,625,000
Taxilane E and H Rehabilitation	PFL0014185				2025	$540,000	$30,000	$30,000	$600,000
EA for North Quadrant Landfill	PFL0014349				2025	$0	$0	$704,958	$704,958
New Airfield Electrical Vault Construction	PFL0014840				2025	$1,682,452	$255,357	$3,169,337	$5,107,146
Runway Lighting Replacement	PFL0014880				2025	$0	$0	$4,666,941	$4,666,941
Improve Fuel Farm 2025	PFL0015057				2025	$630,000	$15,750	$71,272	$717,022
Yearly Total 2025						$18,692,452	$3,681,107	$12,022,508	$34,396,067
Box and T-Hangar Design/Construct - South Quadrant	PFL0011685	446353 1			2026	$0	$2,500,000	$2,500,000	$5,000,000
Expand Airport Observation Deck	PFL0013297				2026	$0	$0	$2,000,000	$2,000,000
North Road Terminal Interior Renovation	PFL0013684				2026	$0	$0	$3,000,000	$3,000,000

Bifold Hangar Door Replacement								
UPIN: PFL0014446	**FDOT Item No.:**			2026	$0	$0	$1,500,000	$1,500,000
Consolidated Rental Car Facility								
UPIN: PFL0014449	**FDOT Item No.:**			2026	$0	$0	$250,000	$250,000
North Road Terminal Apron Improvements Phase 3 - Design and Construct								
UPIN: PFL0014664	**FDOT Item No.:**			2026	$4,518,000	$251,000	$545,000	$5,314,000
Yearly Total **2026**					$4,518,000	$2,751,000	$9,795,000	$17,064,000
Taxiway B Extension and North Apron - Design and Construction								
UPIN: PFL0011418	**FDOT Item No.:**		4	2027	$0	$0	$800,000	$800,000
Box and T-Hangar Design/Construct - South Quadrant								
UPIN: PFL0011685	**FDOT Item No.:**	446353 1		2027	$0	$2,500,000	$2,500,000	$5,000,000
North Quadrant Landfill Relocation								
UPIN: PFL0013288	**FDOT Item No.:**			2027	$0	$0	$6,000,000	$6,000,000
Rehabilitate Primary Runway 5-23 with Blastpads and High Speed Exits - Design/Build								
UPIN: PFL0013299	**FDOT Item No.:**			2027	$900,000	$50,000	$50,000	$1,000,000
Bifold Hangar Door Replacement								
UPIN: PFL0014446	**FDOT Item No.:**			2027	$0	$0	$1,500,000	$1,500,000
Consolidated Rental Car Facility								
UPIN: PFL0014449	**FDOT Item No.:**			2027	$0	$0	$4,000,000	$4,000,000
Yearly Total **2027**					$900,000	$2,550,000	$14,850,000	$18,300,000
Taxiway B Extension and North Apron - Design and Construction								
UPIN: PFL0011418	**FDOT Item No.:**		4	2028	$0	$0	$5,000,000	$5,000,000
Rehabilitate Primary Runway 5-23 with Blastpads and High Speed Exits - Design/Build								
UPIN: PFL0013299	**FDOT Item No.:**			2028	$8,100,000	$450,000	$450,000	$9,000,000
General Aviation Apron Rehabilitation- West of GA Terminal - Design and Construction								
UPIN: PFL0014662	**FDOT Item No.:**			2028	$0	$0	$1,000,000	$1,000,000
Yearly Total **2028**					$8,100,000	$450,000	$6,450,000	$15,000,000
East Quadrant Apron Reconstruction								
UPIN: PFL0009409	**FDOT Item No.:**	446385 1	5	2029	$2,250,000	$125,000	$125,000	$2,500,000

Aircraft Bulk Storage Hangars Aviation Dr S - Design/Construct							
UPIN: PFL0013429	**FDOT Item No.:**		2029	$0	$340,000	$340,000	$680,000
General Aviation Apron Rehabilitation- West of GA Terminal - Design and Construction							
UPIN: PFL0014662	**FDOT Item No.:**		2029	$0	$0	$9,000,000	$9,000,000
Environmental Assessment - West Quadrant							
UPIN: PFL0014663	**FDOT Item No.:**		2029	$0	$0	$1,000,000	$1,000,000
Yearly Total 2029				$2,250,000	$465,000	$10,465,000	$13,180,000
East Quadrant Apron Reconstruction							
UPIN: PFL0009409	**FDOT Item No.:**	446385 1 5	2030	$22,500,000	$1,250,000	$1,250,000	$25,000,000
East Quadrant Clearspan Hangars Phase I Design and Phase II Construction							
UPIN: PFL0013284	**FDOT Item No.:**		2030	$0	$0	$270,000	$270,000
New General Aviation Terminal Design including Landside Parking and Entry							
UPIN: PFL0013296	**FDOT Item No.:**		2030	$0	$0	$2,000,000	$2,000,000
Aircraft Bulk Storage Hangars Aviation Dr S - Design/Construct							
UPIN: PFL0013429	**FDOT Item No.:**		2030	$0	$5,500,000	$5,500,000	$11,000,000
Yearly Total 2030				$22,500,000	$6,750,000	$9,020,000	$38,270,000
New General Aviation Terminal Construction							
UPIN: PFL0008813	**FDOT Item No.:**		2031	$0	$12,500,000	$12,500,000	$25,000,000
East Quadrant Clearspan Hangars Phase I Design and Phase II Construction							
UPIN: PFL0013284	**FDOT Item No.:**		2031	$0	$0	$4,000,000	$4,000,000
Yearly Total 2031				$0	$12,500,000	$16,500,000	$29,000,000

APPENDIX D: COLLIER MPO’S 2045 LRTP COST FEASIBLE PLAN

Table 6-2. Collier MPO 2045 LRTP SIS Cost Feasible Plan Projects **AMENDED 12/8/23**

[in millions $]

Map ID	Facility (FPID No.)	Limits From	Limits To	Description	TIP Funding 2021–25 (YOE)	Plan Period 1 (TIP): 2021–2025			Plan Period 2: 2026–2030			Plan Period 3: 2031–2035			Plan Period 4: 2036–2045			Total Cost 2026–2045
						PRE-ENG	ROW	CST	PRE-ENG	ROW	CST	PRE-ENG	ROW	CST	PRE-ENG	ROW	CST	
29	I-75 (SR-93) Managed (Toll) Lanes [4425192]	E of Collier Blvd (SR 951)	Collier/Lee County Line	New 4-Lane Express (Toll) Lanes (10-lanes)	$0.03	0.02						63.25				145.43		$208.67
29	I-75 [4525441]	N of Golden Gate	S of Corkscrew (Lee County)	Widen from 6-Lanes to 8-Lanes	$24.30	24.30					553.70							$553.70
29	I-75 at Pine Ridge [4452961]	Interchange of I-75 and Pine Ridge	Interchange of I-75 and Pine Ridge	Reconstruct interchange to a diverging diamond and widen Pine Ridge Rd	$23.00	6.34		16.66										$0.00
46	SR 29 [4178784]	SR 82	Hendry County Line	Widen from 2-Lanes to 4-Lanes	$1.37	0.05	1.32											$0.00
48	SR 29 [4344901]	I-75 (SR 93)	Oil Well Rd	Widen from 2-Lane to 4 Lanes	$0.02	0.02						4.33						$4.33
50	SR 29 [4175406]	New Market Rd North	North of SR 82	Widen from 2-Lanes to 4-Lanes (with center turn lane)	$6.82	~~0.43~~ 5.70	~~1.092~~ 1.12		0.23	1.25	~~30.36~~ 35.70							$37.18
51	SR 29/New Market Rd W (New) [4175405]	Immokalee Rd (CR 846)	New Market Rd N	New 4-Lane Road	$9.63	~~1.05~~ 1.39	~~5.77~~ 8.24				75.37						~~49.91~~	$75.37
52	SR 29 [4175404]	Agriculture Way	CR 846 E	Widen from 2-Lanes to 4-Lanes	$0.30	0.30							5.63				23.32	$28.95
53	SR 29 (SEGMENT D) [4175403]	Sunniland Nursery Rd	Agriculture Way	Widen from 2-Lanes to 4-Lanes	$0.50	0.50							2.38					$2.38
54	SR 29 (SEGMENT E) [4175402]	Oil Well Rd	Sunniland Nursery Rd	Widen from 2-Lanes to 4-Lanes	$8.33	8.33							4.55					$4.55
				Totals	$74.30	$46.95	$10.68	$16.66	$0.23	$1.25	$664.77	$67.58	$12.55	$0.00	$0.00	$145.43	$23.32	$915.13
							$74.29			666.25			80.13			168.75		

PRE-ENG	PRE-ENG includes PD&E and Design
PDC	Present Day Cost
ROW	Right-of-Way
CST	Construction
YOE	Year of Expenditure

Table 6-3. Collier MPO 2045 LRTP Cost Feasible Plan Projects – FDOT Other Roads Projects and Local Roadway Projects

(in millions $)

Map ID	Facility	Limits from	Limits to	Description	Total Project Cost (PDC 2019 $)	TIP Funding 2021–25 (YOE)	Plan Period 1 (TIP): 2021–2025 PRE-ENG	Plan Period 1 (TIP): 2021–2025 ROW	Plan Period 1 (TIP): 2021–2025 CST	Plan Period 2: 2026–2030 PRE-ENG	Plan Period 2: 2026–2030 ROW	Plan Period 2: 2026–2030 CST	Plan Period 3: 2031–2035 PRE-ENG	Plan Period 3: 2031–2035 ROW	Plan Period 3: 2031–2035 CST	Plan Period 4: 2036–2045 PRE-ENG	Plan Period 4: 2036–2045 ROW	Plan Period 4: 2036–2045 CST	Total Cost 2026–2045 (YOE $ without SIS)	Total SIS Costs	County	OA PRE-ENG	OA ROW and CST	Funding Source
PLAN PERIOD 2 CONSTRUCTION FUNDED PROJECTS																								
12	Everglades Blvd	Vanderbilt Bch Rd Ext.	Randall Blvd	Widen from 2-Lanes to 4-Lanes	$32.80					$5.59	$2.38	$35.31							$43.27		$43.27			County
23	I-75 (SR-93) Interchange (new)	Golden Gate Pkwy		Interchange Improvement	$9.59					$0.58		$12.24							$12.81			$0.58	$12.24	OA
25	I-75 (SR-93)	Immokalee Rd		Interchange Improvement (DDI proposed)	$9.59					$0.58		$12.24							$12.81			$0.58	$12.24	OA
37	Oil Well Road / CR 858 [60144]	Everglades Blvd	Oil Well Grade Rd	Widen from 2-Lanes to 6-Lanes	$36.78	$1.81	$0.91		$0.90	$6.73		$42.11							$48.83		$48.83			County
57	US 41 (SR 90) (Tamiami Trail E)	Goodlette-Frank Rd		Major Intersection Improvement	$13.00					$0.63	$2.97	$13.41							$17.01			$0.63	$16.38	OA
58	US 41 (SR 90) (Tamiami Trail E)	Greenway Rd	6 L Farm Rd	Widen from 2-Lane to 4 Lanes	$31.88					$3.91	$4.46	$33.53							$41.90			$3.91	$37.98	OA
66	Immokalee Rd	Livingston Rd		Major Intersection Improvement	$24.50							$26.82							$26.82		$26.82			County
78	Golden Gate Pkwy (Intersection)	Livingston Rd		Major Intersection Improvement	$24.50					$5.63		$26.82							$32.45		$32.45			County
111	US 41	Immokalee Rd		Intersection Innovation /Improvements	$17.50					$3.13		$20.12							$23.24			$3.13	$20.12	OA
PLAN PERIOD 3 CONSTRUCTION FUNDED PROJECTS																								
39	Old US 41	US 41	Lee/Collier County Line	Widen from 2-Lanes to 4-Lanes	$22.59					$3.85	$1.70				$30.06				$35.61			$3.85	$31.76	OA
42	Randall Blvd	8th St NE	Everglades Blvd	Widen from 2-Lanes to 6-Lanes	$51.57					$7.29	$5.35				$65.04				$77.67		$77.67			County
59	US 41	Collier Blvd		Major Intersection Improvement	$17.25					$2.81					$23.66				$26.47			$2.81	$23.66	OA
60	US 41 (SR 90) (Tamiami Trail E)	Immokalee Rd	Old US 41	Further Study Required (Complete Streets Study for TSM&O Improvements	$17.25					$0.46			$2.00		$23.66				$26.12			$2.46	$23.66	OA
90	Pine Ridge Rd	Logan Blvd	Collier Blvd	Widen from 4-Lanes to 6-Lanes	$21.72					$1.99				$4.52	$25.00				$31.51		$31.51			County

PRE-ENG includes PD&E and Design — Present Day Cost — Right-of-Way — Construction — YOE Year of Expenditure

Table 6-3. **Collier MPO 2045 LRTP Cost Feasible Plan Projects – FDOT Other Roads Projects and Local Roadway Projects (cont.)**

(in millions $)

Map ID	Facility	Limits from	Limits to	Description	Total Project Cost (PDC 2019 $)	TIP Funding 2021–25 (YOE)	Plan Period 1 (TIP): 2021–2025 PRE-ENG	Plan Period 1 (TIP): 2021–2025 ROW	Plan Period 1 (TIP): 2021–2025 CST	Plan Period 2: 2026–2030 PRE-ENG	Plan Period 2: 2026–2030 ROW	Plan Period 2: 2026–2030 CST	Plan Period 3: 2031–2035 PRE-ENG	Plan Period 3: 2031–2035 ROW	Plan Period 3: 2031–2035 CST	Plan Period 4: 2036–2045 PRE-ENG	Plan Period 4: 2036–2045 ROW	Plan Period 4: 2036–2045 CST	Total Cost 2026–2045 (YOE $ without SIS)	Total SIS Costs	County	OA PRE-ENG	OA ROW and CST	Funding Source
PLAN PERIOD 4 CONSTRUCTION FUNDED PROJECTS																								
11	Everglades Blvd	Randall Blvd	South of Oil Well Rd	Widen from 2-Lanes to 4-Lanes	$16.42								$3.00	$1.53				$24.65	$29.18		$29.18			County
22	I-75 (SR-93) Interchange (new)	Vicinity of Everglades Blvd		New Interchange	$42.26					$3.76			$5.30	$8.32				$55.65	$73.03			$9.07	$63.97	OA
31	Immokalee Rd (CR 846)	SR 29	Airpark Blvd	Widen from 2-Lanes to 4 Lanes	$3.90											$0.77	$0.55	$5.88	$7.20		$7.20			County
36	Logan Blvd	Pine Ridge Rd	Vanderbilt Beach Rd	Widen from 2-Lanes to 4-Lanes	$22.23					$3.40				$3.16				$32.31	$38.87		$38.87			County
63	Westclox Street Ext.	Little League Rd	West of Carson Rd	New 2-Lane Road	$3.01								$0.51				$0.55	$4.45	$5.51		$5.51			County
65	Wilson Blvd	Keane Ave.	Golden Gate Blvd	New 2-Lane Road (Expandable to 4-Lanes)	$36.15								$8.82	$4.23				$50.29	$63.35		$63.35			County
97	Immokalee Rd (Intersection)	Logan Blvd		Major Intersection Improvement	$11.50								$2.12					$18.55	$20.67		$20.67			County
99	Vanderbilt Beach Rd (Intersection)	Logan Blvd		Minor Intersection Improvement	$11.50								$2.12					$18.55	$20.67		$20.67			County
101	Pine Ridge Rd	Goodlette-Frank Rd		Minor Intersection Improvement	$5.75											$1.20		$9.28	$10.48		$10.48			County
C1	Connector Roadway from I-75 Interchange (New)	Golden Gate Blvd	Vanderbilt Beach Rd	4-Lane Connector Roadway from New Interchange (Specific Location TBD During Interchange PD&E	$17.57					$0.44			$2.80	$1.62				$26.29	$31.14			$3.24	$27.90	OA
C2	Connector Roadway from I-75 Interchange (New)	I-75 (SR-93)	Golden Gate Blvd	4-Lane Connector Roadway from New Interchange (Specific Location TBD During Interchange PD&E Study)	$80.59					$2.00			$13.28	$7.41				$120.02	$142.70			$15.28	$127.43	OA

PRE-ENG includes PD&E and Design | Present Day Cost | Right-of-Way | Construction | YOE Year of Expenditure

Table 6-4. **Collier MPO 2045 LRTP Cost Feasible Plan Projects – Partially Funded Projects (FY2026–FY2045)**
(in millions $)

							Plan Period 1 (TIP): 2021–2025			Plan Period 2: 2026–2030			Plan Period 3: 2031–2035			Plan Period 4: 2036–2045					County	OA PRE-ENG	OA ROW and CST	
Map ID	Facility	Limits from	Limits to	Description	Total Project Cost (PDC 2019 $)	TIP Funding 2021–25 (YOE)	PRE-ENG	ROW	CST	PRE-ENG	ROW	CST	PRE-ENG	ROW	CST	PRE-ENG	ROW	CST	Total Cost 2026–2045 (YOE $ without SIS)	Total SIS Costs				Funding Source
PARTIALLY FUNDED PROJECTS																								
1	Benfield Rd (New) [60129]	The Lords Way	City Gate Blvd N	New 2-Lane Road (Expandable to 4-	$37.31	$11.00	$0.00	$4.00	$7.00		$4.00			$5.00					$9.00		$9.00			County
5	Big Cypress Pkwy	Vanderbilt Beach Rd Ext.	Oil Well Rd	New 2-Lane Road (Expandable to 4-	$37.31											$7.70	$4.04		$11.74		$11.74			County
30	Immokalee Rd (CR 846)	Camp Keiss Rd	Eustis Ave	Further Study Required (Immokalee Rd Planning Study)	$2.00					$2.00									$2.00		$2.00			County
33	Little League Rd Ext.	SR 82	Westclox St.	New 2-Lane Road	$40.99											$8.48	$7.33		$15.81		$15.81			County
41A	Randall Blvd (flyover) [60147]	Immokalee Rd		Ultimate Intersection Improvement: Overpass	$35.66	$9.75	$0.95		$8.80							$9.46			$9.46			$9.46	$0.00	OA
55	SR 84 (Davis Blvd)	Airport Pulling Rd	Santa Barbara Blvd	Widen from 4-Lanes to 6-Lanes	$40.26								$0.94			$9.01		$45.88	$55.83			$9.95	$45.88	OA
62B	Vanderbilt Beach Rd Ext.	Everglades Blvd	Big Cypress Pkwy	New 2-Lane Road (Expandable to 4	$41.17											$8.38	$16.07		$24.46		$24.46			County
69	Everglades Blvd	Oil Well Rd / CR 858	Immokalee Rd	Widen 2 to 4 Lanes	$72.75					$3.12	$5.00								$8.12		$8.12			County
74	Immokalee Rd (CR 846) intersection	Wilson Blvd		Major Intersection Improvement	$17.25											$6.60			$6.60			$6.60	$0.00	OA
93	Immokalee Rd	43rd Ave/Shady Hollow Blvd E	North of 47the Ave. NE	Widen from 2-Lanes to 4-Lanes	$9.79											$2.26	$0.48		$2.74		$2.74			County
94	Rural Village Blvd	Immokalee Rd	Immokalee Rd	New 4-Lane Road	$23.41											$5.84	$2.96		$8.80		$8.80			County
98	Vanderbilt Beach Rd	Livingston Rd		Minor Intersection Improvement	$21.50											$2.40			$2.40		$2.40			County
102	US 41 (SR 90) (Tamiami Trail E)	Vanderbilt Beach Rd		Major Intersection Improvement	$2.50											$4.90			$4.90			$4.90	$0.00	OA
103	US 41 (SR 90) (Tamiami Trail E)	Pine Ridge Rd		Major Intersection Improvement	$2.50											$4.90			$4.90			$4.90	$0.00	OA
104	US 41 (SR 90) (Tamiami Trail E) [4464511]	Golden Gate Pkwy		Major Intersection Improvement	$3.50	$0.50	$0.27	$0.23								$4.40			$4.40			$4.40	$0.00	OA
					$969.30	$23.06	$2.13	$4.23	$16.70	$57.87	$25.86	$222.58	$40.89	$35.78	$167.41	$76.29	$32.00	$411.80	$1,070.48	$0.00	$541.55	$85.72	$443.20	
											$306.31			$244.09			$520.08							

Notes:

Partially funded for construction (purple) | PRE-ENG includes PD&E and Design (dark blue) | Present Day Cost (white) | Right-of-Way (green) | Construction (light green) | YOE Year of Expenditure

Table 6-8. SU Box Funds by Planning Year and Project Phase

Allocation Type	Plan Period 2: 2026-2030			Plan Period 3: 2031-2035			Plan Period 4: 2036-2045			Total Cost 2026-2045
	PRE-ENG	ROW	CST	PRE-ENG	ROW	CST	PRE-ENG	ROW	CST	
MPO Supplemental Planning Funds	$0.70			$0.80			$1.90			$3.40
Bicycle Pedestrian Box Funds			$10.17			$10.13			$20.15	$40.45
Congestion Management/Intelligent Transportation Box Funds			$10.17			$10.13			$20.15	$40.45
Bridge Box Funds			$4.96			$4.94			$9.80	$19.70
Safety			$0.80			$0.80			$1.50	$3.10

Figure 6-9. SU Fund Allocation Through 2045

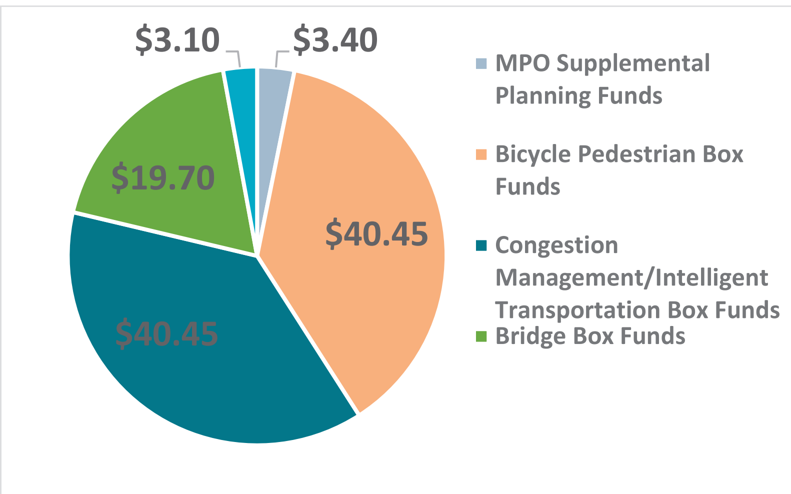


Table ES-10. 2045 Transit Cost Feasible Summary

Funded Need	Plan Period 1: 2021–2025 (YOE)	Plan Period 2: 2026–2030 (YOE)	Plan Period 3: 2031–2035 (YOE)	Plan Period 4: 2036–2045 (YOE)	Total Costs 2026–2045 (YOE)
Other Capital Needs					
Bus Shelters	$4,286,000	$2,781,000	$3,037,000	$6,951,000	$12,769,000
Safety/Security	$538,000	$586,000	$642,000	$1,468,000	$2,696,000
Driver Protection Barriers	$82,000	$0	$0	$0	$0
Technology	$2,585,000	$50,000	$265,000	$605,000	$920,000
Study: Santa Barbara	$25,000	$0	$0	$0	$0
Study: SUF/IFAS	$25,000	$0	$0	$0	$0
Study: I-75	$25,000	$0	$0	$0	$0
Study: Everglades City	$25,000	$0	$0	$0	$0
Study: Fares	$50,000	$0	$0	$0	$0
Study: MoD	$50,000	$0	$0	$0	$0
CAT Bus and Maintenance Building[a]	$7,065,497	$0	$0	$0	$0
Total Other Capital Costs	$14,756,500	$3,417,000	$3,944,000	$9,024,000	$16,385,000
Total Capital Costs	**$27,226,500**	**$16,129,000**	**$15,713,000**	**$36,720,000**	**$68,579,000**

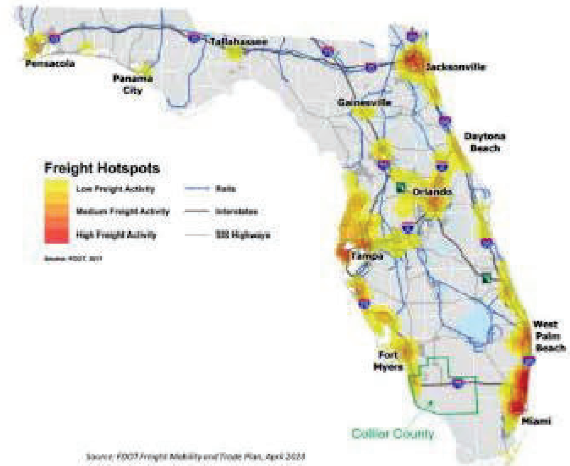
[a] FY 2020/21 through FY 2024/25 TIP Amendment – FTA Grant Award (5339B Funding)

6-4 Freight Network Projects

FDOT updated its Freight Mobility and Trade Plan (FMTP) in April 2020 (FDOT 2020b). The FMTP is a comprehensive plan that identifies freight transportation facilities critical to the state's economic growth and guides multimodal freight investments in the state. The FMTP identified freight hotspots as presented in Figure 6-11. Collier County has low to medium freight activity along the I-75 corridor. According to the data from the FMTP, there are two Freight Intensive Areas in the County: East Naples Industrial area and the Immokalee Airport Industrial area. A Freight Intensive Area is a cluster or group of freight facilities that generates, distributes, or attracts large amounts of freight activities and has a significant impact on Florida's transportation system and economy. Out of 70 Freight Intensive Areas within the state, the East Naples and Immokalee Airport areas ranked 42nd and 43rd, respectively, by total freight parcel floor area.

The FMTP *Technical Memorandum 6, Project Prioritization and Selection* (FDOT 2020b) presents the methodology and the freight project selection and prioritization process. Noted on the list of prioritized projects in the FMTP as a low priority were the I-75 at CR 846 (Immokalee Road) and I-75 at Pine Ridge Road interchange modification projects. All projects listed in Table 6-1, 2045 SIS Cost Feasible Projects, are part of the Regional Freight Mobility Corridors within the Collier MPO boundary (refer to Figure 4-4 in Chapter 4). A total of 20 of the cost feasible projects identified in this 2045 LRTP update are on the freight network within Collier MPO boundary.

Figure 6-11. Freight Hotspot Locations



6-5 Airport Transportation Projects

As noted in Chapter 4, two off-airport transportation projects were identified in the roadway Needs Plan to improve access to Naples Airport and Immokalee Regional Airport. Project no. 31, Immokalee Road from Airpark Boulevard to SR 29, has been identified as cost feasible for construction in FY2036 to FY2045. The project includes widening Immokalee Road from two to four lanes and will improve traffic operations and access to the industrial warehouses within the property of the Immokalee Regional Airport. Approximately $7.2 million has been dedicated to this off-airport roadway project in the Cost Feasible Plan using County funds.

Table 5-3. Airport Capital Revenue Projections

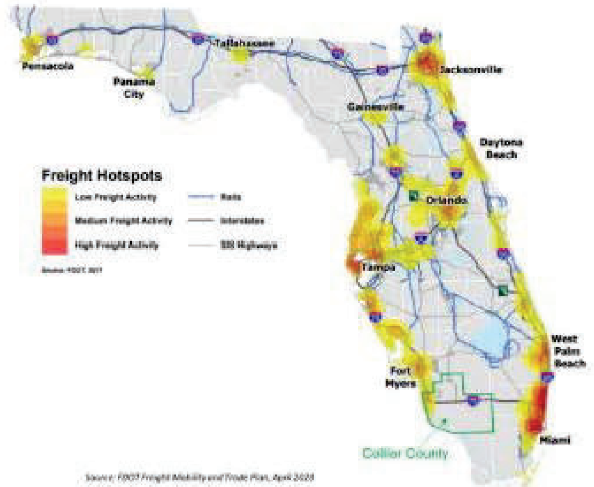
Airport	Funding Source	2020-2024	2026-2030	2031-2035	2036-2045	TOTAL
Collier County Airport Authority						
Immokalee Regional Airport	FAA, FDOT, Local		$8,400,000	$15,000,000	$38,800,000	$62,200,000
Everglades Airpark	FAA, FDOT, Local		$2,000,000	$3,000,000	$5,100,000	$10,100,000
Marco Island Executive Airport	FAA, FDOT, Local		$ 4,100,000	$5,000,000	$9,250,000	$18,350,000
City of Naples						
Naples Airport	FAA, FDOT	$39,950,000				$39,950,000

6-4 Freight Network Projects

FDOT updated its Freight Mobility and Trade Plan (FMTP) in April 2020 (FDOT 2020b). The FMTP is a comprehensive plan that identifies freight transportation facilities critical to the state's economic growth and guides multimodal freight investments in the state. The FMTP identified freight hotspots as presented in Figure 6-11. Collier County has low to medium freight activity along the I-75 corridor. According to the data from the FMTP, there are two Freight Intensive Areas in the County: East Naples Industrial area and the Immokalee Airport Industrial area. A Freight Intensive Area is a cluster or group of freight facilities that generates, distributes, or attracts large amounts of freight activities and has a significant impact on Florida's transportation system and economy. Out of 70 Freight Intensive Areas within the state, the East Naples and Immokalee Airport areas ranked 42nd and 43rd, respectively, by total freight parcel floor area.

The FMTP *Technical Memorandum 6, Project Prioritization and Selection* (FDOT 2020b) presents the methodology and the freight project selection and prioritization process. Noted on the list of prioritized projects in the FMTP as a low priority were the I-75 at CR 846 (Immokalee Road) and I-75 at Pine Ridge Road interchange modification projects. All projects listed in Table 6-1, 2045 SIS Cost Feasible Projects, are part of the Regional Freight Mobility Corridors within the Collier MPO boundary (refer to Figure 4-4 in Chapter 4). A total of 20 of the cost feasible projects identified in this 2045 LRTP update are on the freight network within Collier MPO boundary.

Figure 6-11. Freight Hotspot Locations



6-5 Airport Transportation Projects

As noted in Chapter 4, two off-airport transportation projects were identified in the roadway Needs Plan to improve access to Naples Airport and Immokalee Regional Airport. Project no. 31, Immokalee Road from Airpark Boulevard to SR 29, has been identified as cost feasible for construction in FY2036 to FY2045. The project includes widening Immokalee Road from two to four lanes and will improve traffic operations and access to the industrial warehouses within the property of the Immokalee Regional Airport. Approximately $7.2 million has been dedicated to this off-airport roadway project in the Cost Feasible Plan using County funds.

Project no. 114 in the roadway Needs Plan includes innovative intersection improvements at Radio Road and Airport Pulling Road. This intersection provides access to the entrance of the Naples Airport. While the project is not part of the Cost Feasible Plan, it will remain on Needs Plan. Naples Airport estimates their development costs for airport operations at $56.8 million for short term (2020–2024), $67 million for intermediate (2025–2029), and $83 million for long-term (2030–2039) expenses, for a total of $206.9 million.

APPENDIX E: FEDERAL LANDS APPROPRIATIONS

**(Eastern Federal Lands Highway Division of the
Federal Highway Administration (FHWA))**

There are no Federal Lands Highways Projects in Collier County in 26-30.

APPENDIX F: SUMMARY OF PUBLIC COMMENTS

*** To be completed as comments are received.***

Date	From	Email/phone	Comment	Response

APPENDIX G: FISCAL CONSTRAINT

*** The FDOT Five-Year TIP Funding Summary for the Collier MPO is shown on the following page. The data is based on FDOT's 4/9/25 snapshot of the Work Program.***

Insert collier funding summary 4/9/25 SNAPSHOT, titled fiscal constraint table

APPENDIX H: CRITERIA USED FOR PROJECT PRIORITIZATION

MPO Board Allocation of its Transportation Management Area (TMA) Funds

The MPO Board adopted a temporary suspension of its former allocation formula for TMA funds on March 10, 2017. The new, temporary policy allocates 100% of its TMA Funds annually for five-years as follows: Year 1 – Pedestrian and Bicycle, Year 2 – Bridges, Year 3, Congestion Management, Year 4 – Pedestrian and Bicycle, and Year 5 – Congestion Management. The Cost Feasible Plan of the Long Range Transportation Plan (LRTP) contains a budget line item for these project categories but does not list individual projects (except for bridge projects) within these categories.

FDOT requires that the TIP includes the MPO's criteria and process for prioritizing projects. The questions/criteria used by the MPO to prioritize projects are listed in the tables below.

Bicycle and Pedestrian Projects

On March 8, 2019, the MPO Board adopted the Bicycle and Pedestrian Master Plan which contains the criteria and point system that will be used to evaluate bicycle and pedestrian projects. Project evaluation occurs in a two-step process. First, MPO staff conducts a preliminary assessment for eligibility according to the following criteria: a) timeliness, b) constructability and c) funding availability. Next, MPO staff and advisory committees evaluate, score and rank the projects according to the criteria, points, and associated Long Range Transportation Plan (LRTP) goal(s) listed below.

Safety LRTP Goal: Improve the safety of the transportation system for users
• Implements a recommended action in a Bicycle/Pedestrian Road Safety Audit – 5 points • Addresses a safety concern involving serious injuries and fatalities as identified in this Plan, absent a Safety Audit to verify the proposed mitigation measure – 3 points • Addresses a safety concern involving crashes of less severity, absent a Safety Audit to verify the proposed mitigation measure – 2 points • Addresses a safety concern expressed by members of the public in the absence of crash records – 1 point

Equity LRTP Goal: Promote the integrated planning of transportation and land use
• Fills a need associated with an Environmental Justice community or use identified in this Plan – 5 points • Fills a need associated with an area that meets some, but not all EJ criteria used in identifying EJ communities for this Plan – 3 points • Fills a need associated with an area that does not have adequate access to nonmotorized transportation facilities based upon public input received in the development of this Plan – 1 point

Connectivity LRTP Goal: Improve System Continuity and Connectivity LRTP Goal: Promote multi-modal solutions
• Fills a prioritized infrastructure gap identified in this Plan – 5 points • Fills a need for improved connectivity based upon public input received in the development of this Plan – 2 points

Bridge Project Application Criteria

Bridge projects were drawn from the County's East of CR 951 Bridge Report. The LRTP and therefore Transportation Improvement Program (TIP) recommendations for bridge projects come directly from this report. The criteria used to evaluate bridge projects and the associated LRTP goal are listed in the table below.

Question/Criteria	**LRTP Goal**
Emergency response times and proximity to responding agency.	Increase the safety of the transportation system for users.
Impact of bridge on increasing mobility and ease of evacuation.	Improve system continuity and connectivity.
Gains in service efficiency, particularly for schools.	Improve system continuity and connectivity.
Public sentiment.	

Congestion Management Projects

Congestion management projects were evaluated based on the Congestion Management Process (CMP) 2022 Update. The Congestion Management Committee (CMC) evaluates project submittals based on the following criteria:

Congestion Management Committee Evaluation Criteria and Scores

A. Pre-Project Evaluation

Q1 – Does this project address a congested roadway?

- Yes
- No

B. General Project Evaluation

Q2 – Is this application supported by multiple jurisdictions?

- Yes – 3 pt.
- No (blank) – 0 pt.

Q3 – Are there specific technical and/or monetary local contributions for this project?

- Yes – 3 pt.
- No – 0 pt.

Q4 – Does this project require the acquisition of right-of-way?

- Yes – 0 pt.
- No – 3 pt.

C. Project Specific Evaluation:

Q5 - Uses TSM Approach?

- High – 5 pts. – Incorporates intersection improvements such as turn lanes, signal improvements etc.; or significantly enhances operational response time for emergency vehicles on intersections/facilities which have an existing Level of Service (LOS) " F"
- Med – 3 pts. – Incorporates intersection improvements such as turn lanes, signal improvements, etc.; or significantly enhances operational response time for emergency vehicles on intersections/facilities which have an existing LOS "E"
- Low – 1 pt.- incorporates intersection improvements such as turn lanes, signal improvements, etc.; or establish and/or improves traffic diversion capability on intersections/facilities (for example signage for alternative routes) which have an existing LOS "D"

Q6 - Uses TDM strategy?

- High – 5 pts. – Reduces congestion and increases efficiency of the system by adding a new a transit route or a new park & ride facility or cooperating with regional TDM program
- Med – 3 pts. – Reduces congestion and increases system efficiency by increasing existing carpooling, vanpooling, transit or a park & ride facility.
- Low – 1 pt. – Reduces congestion and increases system efficiency by adding new bicycle or pedestrian facilities

Q7 - Supports/enhances and effectively integrates with existing ITS and maintains concurrency with FDOT Regional ITS Architecture and technological advances in TOC equipment and operations?

- High – 5 pts. – Project affects arterial roadways; or addresses a critical need due to insufficient communication and/or system expansion
- Med – 3 pts. – Project affects collector roadways; or addresses a critical need
- Low – 1 pt. – Project location is not specific; or project is to address contingency system backup or to purchase miscellaneous equipment

Q8 - Increases Security?

- Yes – 3 pt.
- No (blank) – 0 pt.

Q9 - Increases Safety?

- High – 5 pts. – Addresses a documented safety problem; reduces the total number of vehicle-related crashes or serious injuries; reduces the total number of bicycle-related or pedestrian related crashes; reduce the number of transit related injuries
- Med – 3 pts. – Increases bicycle or pedestrian safety at high traffic location; and/or increases/improves safety of emergency responders at incident sites; or to reduce the number of secondary incidents as a result of a primary incident

Q10 - Promote Regional Connectivity?

- High – 5 pts. – Enhances the inter-county connectivity of highways or transit
- Med – 3 pts. – Enhances the inter-county connectivity of pathways/bikeways/trails
- Low – 1 pt. – project is on a facility identified on the regional network

Q11 - Promotes Multi-Modal Solutions?

- High – 5 pts. – Improves at least three modes; increases connectivity between motorized and non-motorized modes; advances recommendations from existing MPO Bicycle/Pedestrian Safety Studies, Audits, and Community Walkability Studies
- Med – 3 pts. – Enhances at least two modes of transportation
- Low – 1 pt. – Improves one mode; increases transit ridership on a specific route; increases transit enhancements such as park and ride lots or bus shelters; and other enhancements for non-motorized facilities etc.

Q12 - Protect Environmental Resources?

- High – 5 pts. – Reduces air quality emissions; reduces fuel consumption by reducing corridor congestion
- Med – 3 pts. – Reduces fuel consumption by reducing specific intersection delays; improves monitoring and reporting capability
- Low – 1 pt. – Supports general congestion avoidance measures

Q13 - Promotes Economic Development or Freight Movement?

- High – 5 pts. – Project is located at and directly affects access to airports, major activity centers, or freight activity centers
- Med- 3 pts. – Project is located near and affects access to, airports, high employment areas, or freight activity centers
- Low – 1 pt. – Project is not located near to airports, or high employment areas but can promote overall economic development of the community

Transit Project Selection

Collier Area Transit (CAT) provides the MPO with transit priorities. These priorities are based on the Transit Development Plan which is the strategic guide for public transportation in Collier County. The plan is updated annually, and a major update is completed every five years. The development of proposed transit projects is based on:

1. Situational Appraisal which is an assessment of CAT's operating environment to identify community needs.
2. Transit Demand Assessment which is a technical analysis of transit demand and needs used to identify areas with characteristics supportive of transit.
3. Discussion with public agency staffs, visioning surveys, workshops, and stakeholder discussions.
4. Coordination with the MPO in the long-range transportation planning process

   Long Range Transportation Plan Goals associated with the selection of transit projects include:

   - Reduce roadway congestion.
   - Promote multi-modal solutions.
   - Promote the integrated planning of transportation and land use.

The MPO solicits a list of annual Transit project priorities from the County Public Transit and Neighborhood Enhancement Division (PTNE). The projects originate in the Transit Development Plan, which is incorporated into the LRTP, and the County's Transit Asset Management Plan.

The LRTP and the TIP

The LRTP is also the source of other projects contained in the TIP. Proposed projects in an LRTP's Cost Feasible Plan are evaluated, in part, on their merits to improve traffic flow, capacity and congestion as analyzed using the Travel Demand Model (D1RPM). The LRTP used several additional criteria in project evaluation including:

1. Freight system improvement
2. Wetland and species impacts
3. Evacuation route
4. Cost per lane mile
5. Reduction in congestion

Projects identified in an LRTP needs analysis are selected for inclusion in the Cost Feasible Plan based on their needs analysis ranking and on a financial analysis of funds that can reasonably be expected to be available for transportation investments during the timeframe of the plan. Each year, the MPO will select a subset of the projects in the Cost Feasible Plan for inclusion in the upcoming TIP.

APPENDIX I: ADDITIONAL PLANS AND STUDIES & Part 667 Report

This Appendix is intended to show transportation projects, plans and studies that are underway but are not included in this TIP for various reasons. They may have been funded in a previous TIP but not yet completed, or they may be statewide projects that are located partially within Collier County but are not assigned to an individual MPO.

This Appendix includes FDOT's 23 CFR Part 667 report, "Periodic Evaluation of Facilities Repeatedly Requiring Repair and Reconstruction Due to Emergency Events."

Florida Department of Transportation

23 CFR Part 667

Periodic Evaluation of Facilities Repeatedly Requiring Repair and Reconstruction Due to Emergency Events

March 1, 2024

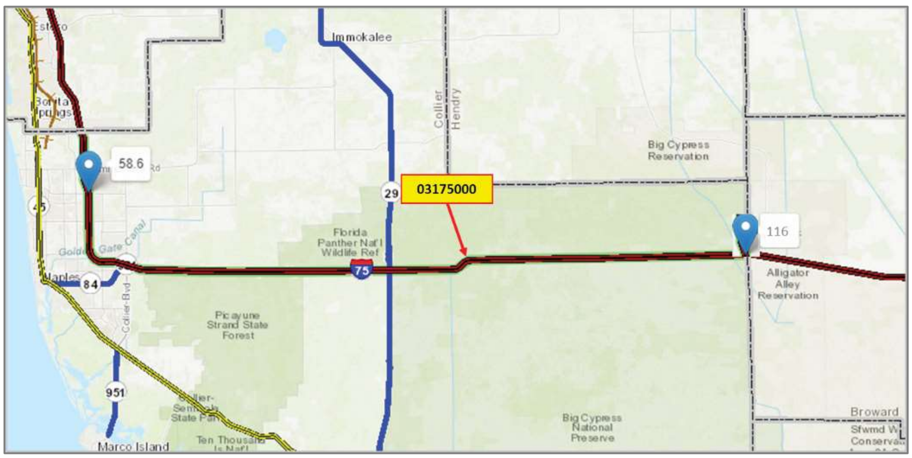
Appendix A *:* Project Evaluations for Roads, Highways and Bridges

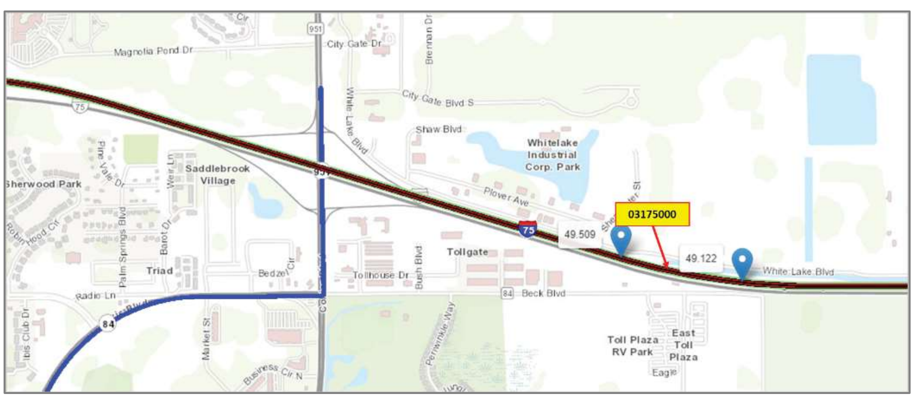
District 1

Project 1: SR-93/I-75

County	Event	Landfall Date	Item No.	Route ID	Route Type	Location	Damage Description
Collier	Hurricane Irma	09/09/2017	442788-1	03175000	NHS	Beg Pt 58.6 to End Pt 116	Fence damage
	Hurricane Ian	09/28/2022	452524-1			Beg Pt 49.122 to End Pt 49.509	Lighting

Project Location Maps





Alternatives Discussion

Collier County:
For Hurricane Irma, the repairs involved replacement of the Type B barbwire and chain link fence at the limits of the limited access right-of-way along a 50-mile stretch of I-75 (Alligator Alley) due to flooding, wind damage, and isolated tree damage. The total cost was $250,000, which was eligible for federal reimbursement. Due to the low-lying elevation of I-75 along Alligator Alley, proximity to the adjacent canals, and physical location of the limited access fencing adjacent to the right-of-way line, mitigative action is not practical. A chain link fence is the most cost-effective way to secure limited access right-of-way. Restoration of the chain link fence damaged by Hurricane Irma cost $5,000 per mile – a relatively inexpensive repair. Additionally, many of the trees that impacted the fence are located outside the right-of-way. In order to remove them, additional right-of-way would need to be acquired.

For Hurricane Ian, we are repairing a total of seven (7) light poles at a cost of $8,000. The repairs involve replacement of seven (7) luminaire and bracket arms and leveling of one (1) of the light pole foundations. These repairs were ineligible for federal reimbursement due to the small number of poles affected, minor nature of the repairs, and the sporadic distance between them over this 0.4-miles section of I-75. Due to the low cost associated with these FHWA-ineligible repairs relative to complete replacement of the lighting system in this area to meet current design standards and wind loading requirements, mitigative action is unwarranted at this time.

APPENDIX J: ADDRESSING PERFORMANCE MANAGEMENT REQUIREMENTS IN THE TIP

Template to Address Performance Management Requirements in Metropolitan Planning Organization Transportation Improvement Programs

Office of Policy Planning Florida Department of Transportation

February 2023 Template

COLLIER
Metropolitan Planning Organization

COLLIER MPO FY 2026-2030 TIP

TABLE OF CONTENTS

1 - PURPOSE

This document provides language that Florida's metropolitan planning organizations (MPO) may incorporate in Transportation Improvement Programs (TIP) to meet the federal transportation performance management rules.

MPOs may adapt this template language as needed as they update their TIPs. In most sections, there are two options for the text, to be used by MPOs supporting statewide targets or MPOs establishing their own targets. Areas that require MPO input are shown in **BOLD**. This can range from simply adding the MPO name and adoption dates to providing MPO-specific background information and relevant strategies and prioritization processes.

The document is consistent with the Transportation Performance Measures (TPM) Consensus Planning Document developed jointly by the Florida Department of Transportation (FDOT) and the Metropolitan Planning Organization Advisory Council (MPOAC). The Consensus Planning Document outlines the minimum roles of FDOT, the MPOs, and the public transportation providers in the MPO planning areas to ensure consistency to the maximum extent practicable in satisfying the federal transportation performance management requirements.

The document is organized as follows:

- Section 2 provides a brief background on transportation performance management;
- Section 3 covers the Highway Safety measures (PM1);
- Section 4 covers the Bridge and Pavement Condition measures (PM2);
- Section 5 covers System Performance and Freight Movement measures (PM3);
- Section 6 covers Transit Asset Management (TAM) measures; and
- Section 7 covers Transit Safety measures.

2 - BACKGROUND

Transportation Performance Management (TPM) is a strategic approach to connect transportation investment and policy decisions to help achieve performance goals. Performance measures are quantitative expressions used to evaluate progress toward goals. Performance targets are quantifiable levels of performance to be achieved within a time period. Federal transportation law requires state departments of transportation (DOT), MPOs, and public transportation providers to conduct performance-based planning by tracking performance and establishing data-driven targets to assess progress toward achieving goals. Performance-based planning supports the efficient investment of transportation funds by increasing accountability, providing transparency, and linking investment decisions to key outcomes related to seven national goals established by Congress:

- Improving safety;
- Maintaining infrastructure condition;
- Reducing traffic congestion;
- Improving the efficiency of the system and freight movement;
- Protecting the environment; and
- Reducing delays in project delivery.

Federal law requires FDOT, the MPOs, and public transportation providers to coordinate when selecting performance targets. FDOT and the MPOAC developed the TPM Consensus Planning Document to describe the processes through which these agencies will cooperatively develop and share information related to transportation performance management and target setting.

3 - HIGHWAY SAFETY MEASURES (PM1)

The first of FHWA's performance management rules establishes measures to assess fatalities and serious injuries on all public roads. The rule requires state DOTs and MPOs to annually establish targets and report performance and progress toward targets to FHWA for the following safety-related performance measures:

1. Number of Fatalities;
2. Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT);
3. Number of Serious Injuries;
4. Rate of Serious Injuries per 100 million VMT; and
5. Number of Nonmotorized Fatalities and Serious Injuries.

3.1 Highway Safety Targets

3.1.1 Statewide Targets

Safety performance measure targets are required to be adopted on an annual basis. In August of each calendar year, FDOT reports targets to FHWA for the following calendar year. On August 31, 2022, FDOT established statewide safety performance targets for calendar year 2023. Table 3.1 presents FDOT's statewide targets.

Table 3.1. Statewide Highway Safety Performance Targets

Performance Measure	Calendar Year 2024 Statewide Target
Number of fatalities	0
Rate of fatalities per 100 million vehicle miles traveled (VMT)	0
Number of serious injuries	0

Rate of serious injures per 100 million vehicle miles traveled (VMT)	0
Number of non-motorized fatalities and serious injuries	0

FDOT adopted a vision of zero traffic-related fatalities in 2012. This, in effect, became FDOT's target for zero traffic fatalities and quantified the policy set by Florida's Legislature more than 35 years ago (Section 334.046(2), Florida Statutes, emphasis added):

"The mission of the Department of Transportation shall be to provide a ***safe*** *statewide transportation system…"*

FDOT and Florida's traffic safety partners are committed to eliminating fatalities and serious injuries. As stated in the Safe System approach promoted by the FHWA, the death or serious injury of any person is unacceptable. The Florida Transportation Plan (FTP), the state's long-range transportation plan, identifies eliminating transportation-related fatalities and serious injuries as the state's highest transportation priority. Therefore, FDOT established 0 as the only acceptable target for all five federal safety performance measures.

3.1.2 MPO Safety Targets

MPOs are required to establish safety targets annually within 180 days of when FDOT established targets. MPOs establish targets by either agreeing to program projects that will support the statewide targets or establish their own quantitative targets for the MPO planning area.

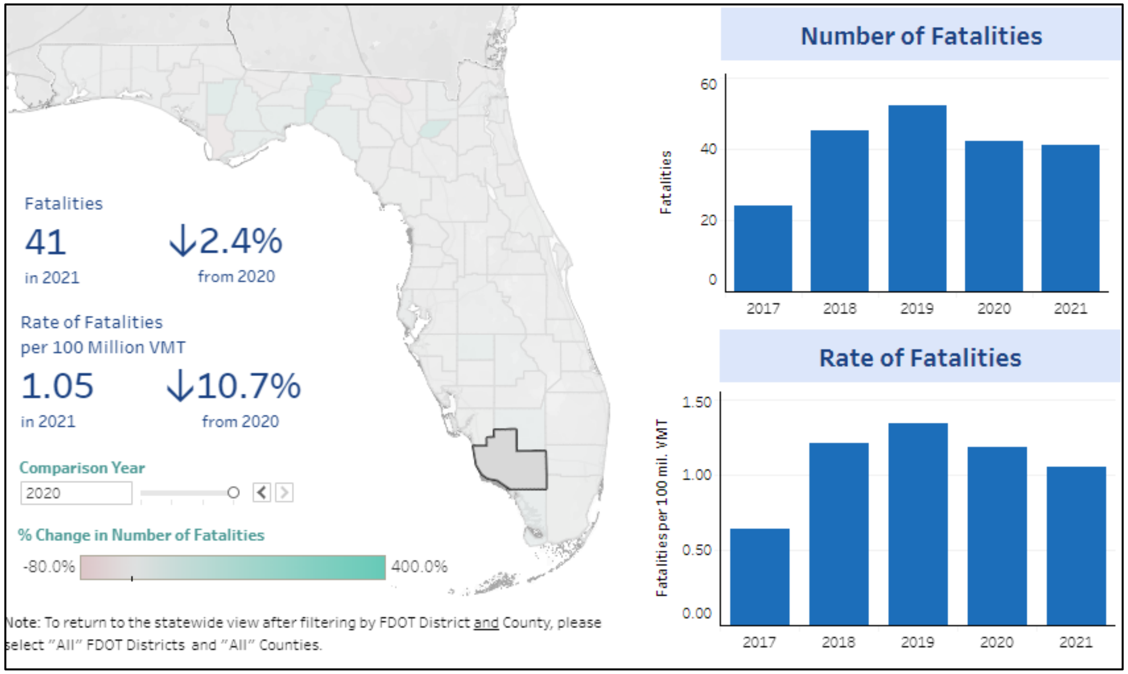
The **Collier MPO**, along with FDOT and other traffic safety partners, shares a high concern about the unacceptable number of traffic fatalities, both statewide and nationally. As such, on **February 14, 2024**, the **Collier MPO** agreed to support FDOT's statewide safety performance targets for calendar year 2023, thus agreeing to plan and program projects in the TIP that once implemented, are anticipated to make progress toward achieving the statewide targets. The safety initiatives within this TIP are intended to contribute toward achieving these targets.

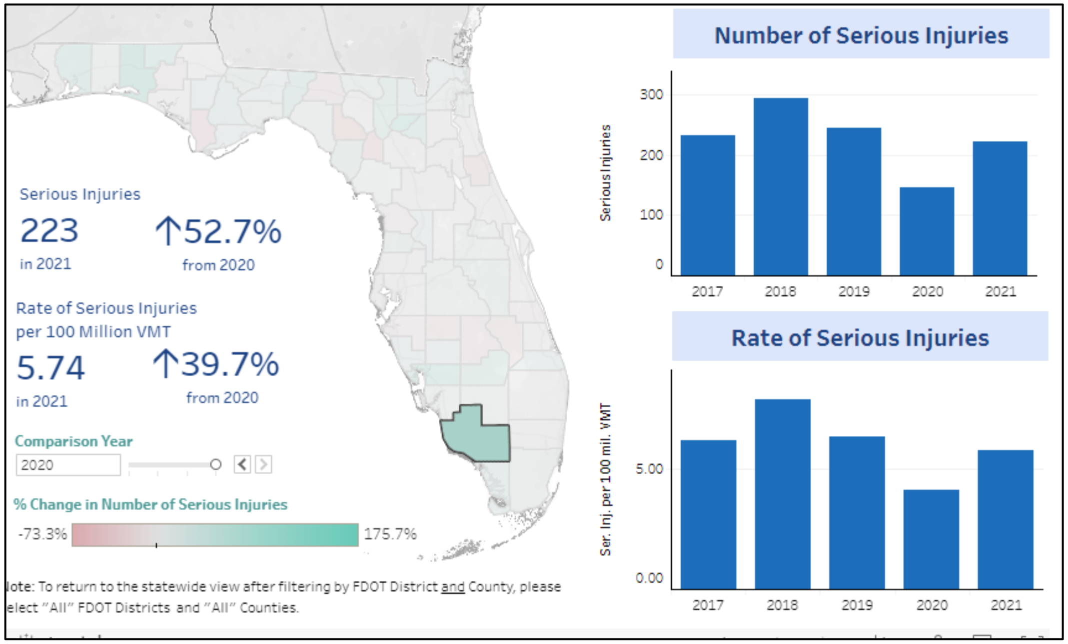
Table 3.2. MPO Safety Performance Targets

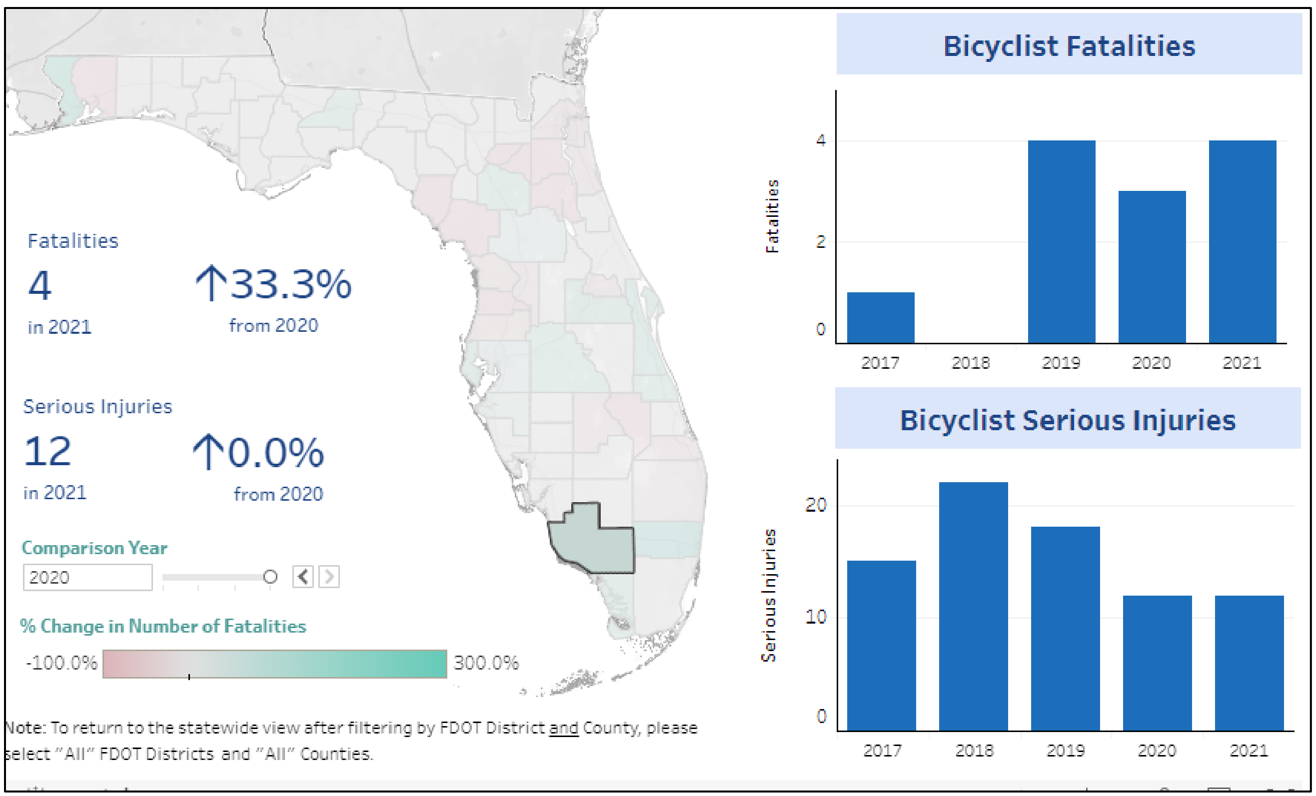
Performance Measure	Calendar Year 2023 MPO Target
Number of fatalities	0
Rate of fatalities per 100 million vehicle miles traveled (VMT)	0
Number of serious Injuries	0
Rate of serious injures per 100 million vehicle miles traveled (VMT)	0
Number of non-motorized fatalities and serious injuries	0

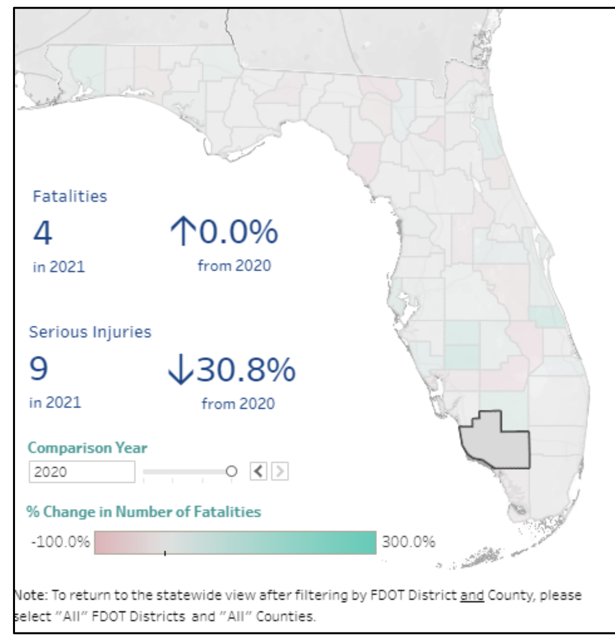
3.2 Safety Trends in the MPO Area

Collier MPO monitors the traffic safety data received from FDOT. Trends are reported in the TIP, the MPO's Annual Report and at the time the MPO Board adopts FDOT's Vision Zero targets for the upcoming calendar year. Here are the tables published in the 2024 Annual Report:




Number of Serious Injuries
Serious Injuries
300
200
100
0
2017
2018
2019
2020
2021
Rate of Serious Injuries
Ser. Inj. per 100 mil. VMT
5.00
0.00
2017
2018
2019
2020
2021
Serious Injuries
223
in 2021
↑52.7%
from 2020
Rate of Serious Injuries
per 100 Million VMT
5.74
in 2021
↑39.7%
from 2020
Comparison Year
2020
% Change in Number of Serious Injuries
-73.3%
175.7%
Note: To return to the statewide view after filtering by FDOT District and County, please select "All" FDOT Districts and "All" Counties.


Bicyclist Fatalities
Fatalities
4
2
0
2017
2018
2019
2020
2021
Bicyclist Serious Injuries
Serious Injuries
20
10
0
2017
2018
2019
2020
2021
Fatalities
4
in 2021
↑33.3%
from 2020
Serious Injuries
12
in 2021
↑0.0%
from 2020
Comparison Year
2020
% Change in Number of Fatalities
-100.0%
300.0%
Note: To return to the statewide view after filtering by FDOT District and County, please select "All" FDOT Districts and "All" Counties.


Fatalities
4
in 2021
↑0.0%
from 2020
Serious Injuries
9
in 2021
↓30.8%
from 2020
Comparison Year
2020
% Change in Number of Fatalities
-100.0%
300.0%
Note: To return to the statewide view after filtering by FDOT District and County, please select "All" FDOT Districts and "All" Counties.

3.3 FDOT Safety Planning and Programming

3.3.1 Florida's Strategic Highway Safety Plan

Florida's Strategic Highway Safety Plan (SHSP), published in March 2021, identifies strategies to achieve zero traffic deaths and serious injuries. The SHSP was updated in coordination with Florida's 27 MPOs and the MPOAC, as well as other statewide traffic safety partners. The SHSP development process included review of safety-related goals, objectives, and strategies in MPO plans. The SHSP guides FDOT, MPOs, and other safety partners in addressing safety and defines a framework for implementation activities to be carried out throughout the state.

Florida's transportation safety partners have focused on reducing fatalities and serious injuries through the 4Es of engineering, education, enforcement, and emergency response. To achieve zero, FDOT and other safety partners will expand beyond addressing specific hazards and influencing individual behavior to reshaping transportation systems and communities to create a safer environment for all travel. The updated SHSP calls on Florida to think more broadly and inclusively by addressing four additional topics, which are referred to as the 4Is: information intelligence, innovation, insight into communities, and investments and policies. The SHSP also embraces an integrated "Safe System" approach that involves designing and managing road infrastructure to keep the risk of a mistake low and to ensure that when a mistake leads to a crash, the impact on the human body does not result in a fatality or serious injury. The five Safe System elements together create a holistic approach with layers of protection: safe road users, safe vehicles, safe speeds, safe roads, and post-crash care.

The SHSP also expands the list of emphasis areas for Florida's safety programs to include six evolving emphasis areas, which are high-risk or high-impact crashes that are a subset of an existing emphasis area or emerging risks and new innovations, where safety implications are unknown. These evolving emphasis areas include work zones, drowsy and ill driving, rail grade crossings, roadway transit, micromobility, and connected and automated vehicles.

3.3.2 Florida's Highway Safety Improvement Program

While the FTP and the SHSP both highlight the statewide commitment to a vision of zero deaths, the Florida Highway Safety Improvement Program (HSIP) Annual Report documents statewide performance and progress toward that vision. It also lists all HSIP projects that were obligated during the reporting year and the relationship of each project to the SHSP.

As discussed above, in the 2022 HSIP Annual Report, FDOT reported 2023 statewide safety performance targets at "0" for each safety performance measure to reflect the vision of zero deaths. Annually, FHWA determines whether Florida has met the targets or performed better than baseline for at least four of the five measures. If this does not occur FDOT must submit an annual implementation plan with actions, it will take to meet targets in the future.

On April 21, 2022, FHWA reported the results of its 2020 safety target assessment. FHWA concluded that Florida had not met or made significant progress toward its 2020 safety targets, noting that zero had not been achieved for any measure and that only three out of five measures (number of serious injuries, serious injury rate, and number of non-motorized fatalities and serious injuries) were better than baseline. Subsequently, FDOT developed an HSIP Implementation Plan to highlight additional strategies it will undertake in support of the safety targets. This plan was submitted with the HSIP Annual Report to FWHA in August, 2023 and is available at www.fdot.gov. Consistent with FHWA requirements, the HSIP Implementation Plan focuses specifically on implementation of the HSIP as a core federal-aid highway program and documents the continued enhancements planned for Florida's HSIP to better leverage the benefits of this program. However, recognizing that FDOT already allocates all HSIP funding to safety programs - and building on the integrated approach that underscores FDOT's safety programs – the HSIP Implementation Plan also documents how additional FDOT, and partner activities may contribute to progress toward zero. Building on the foundation of prior HSIP Implementation Plans, the 2023 HSIP Implementation Plan identifies the following key commitments:

- Improve partner coordination and align safety activities.
- Maximize HSIP infrastructure investments.
- Enhance safety data systems and analysis.
- Focus on safety marketing and education on target audiences.
- Capitalize on new and existing funding opportunities.
- Florida conducts extensive safety data analysis to understand the state's traffic safety challenges and identify and implement successful safety solutions. Florida's transportation system is evaluated using location-specific analyses that evaluate locations where the number of crashes or crash rates are the highest and where fatalities and serious injuries are most prominent. These analyses are paired with additional systemic analyses to identify characteristics that contribute to

.

certain crash types and prioritize countermeasures that can be deployed across the system as a whole. As countermeasures are implemented, Florida also employs predictive analyses to evaluate the performance of roadways (i.e., evaluating results of implemented crash modification factors against projected crash reduction factors).

FDOT's State Safety Office works closely with FDOT Districts and regional and local traffic safety partners to develop the annual HSIP updates. Historic, risk-based, and predictive safety analyses are conducted to identify appropriate proven countermeasures to reduce fatalities and serious injuries associated with Florida's SHSP emphasis areas, resulting in a list of projects that reflect the greatest needs and are anticipated to achieve the highest benefit. While these projects and the associated policies and standards may take years to be implemented, they are built on proven countermeasures for improving safety and addressing serious crash risks or safety problems identified through a data-driven process. Florida continues to allocate all available HSIP funding to safety projects. FDOT's HSIP Guidelines provide detailed information on this data-driven process and funding eligibility.

Beginning in fiscal year 2024, HSIP funding will be distributed among FDOT Districts based on statutory formula to allow the Districts to have more clearly defined funding levels for which they can better plan to select and fund projects. MPOs and local agencies coordinate with FDOT Districts to identify and implement effective highway safety improvement projects on non-state roadways.

3.3.3 Additional FDOT Safety Planning Activities

In addition to HSIP, safety is considered as a factor in FDOT planning and priority setting for projects in preservation and capacity programs. Data is analyzed for each potential project, using traffic safety data and traffic demand modeling, among other data. The Florida PD&E Manual requires the consideration of safety when preparing a proposed project's purpose and need as part of the analysis of alternatives. Florida design and construction standards include safety criteria and countermeasures, which are incorporated in every construction project. FDOT also recognizes the importance of the American Association of State Highway Transportation Official (AASHTO) Highway Safety Manual (HSM). Through dedicated and consistent training and messaging over the last several years, the HSM is now an integral part of project development and design.

FDOT holds Program Planning Workshops annually to determine the level of funding to be allocated over the next 5 to 10 years to preserve and provide for a safe transportation system. Certain funding types are further analyzed and prioritized by FDOT Central Offices, after projects are prioritized collaboratively by the MPOs, local governments, and FDOT Districts; for example, the Safety Office is responsible for the HSIP and Highway Safety Program (HSP) and the Systems Implementation Office is responsible for the Strategic Intermodal System (SIS). Both the Safety and SIS programs consider the reduction of traffic fatalities and serious injuries in their criteria for ranking projects.

3.4 Safety Investments in the TIP

The **Collier MPO** recognizes the importance of linking goals, objectives and investment priorities to established performance objectives, and that this link is critical to the achievement of national transportation goals and statewide and regional performance targets. As such, the **Collier MPO 2045 LRTP** reflects the goals, objectives, performance measures, and targets as they are available and described in other state and public transportation plans and processes; specifically the Florida Strategic Highway Safety Plan (SHSP), the Florida Highway Safety Improvement Program (HSIP) and the Florida Transportation Plan (FTP). **In addition, the MPO adopted a Local Roads Safety Plan in 2020 and is implementing the Plan's recommendations through proactive public outreach and education, partnering with local and regional safety advocacy groups and setting aside a portion of its SU allocation to fund local safety projects and studies. The MPO is currently developing a Comprehensive Safety Action Plan (CSAP) funded by a federal Safe Streets and Roads for All (SS4A) grant. The anticipated completion date for the CSAP is September 30, 2025.**

The Collier MPO considered safety as a project evaluation factor in prioritizing projects for inclusion in the 2045 LRTP Cost Feasible Plan and in specific plans incorporated into the LRTP CFP by reference: The Transportation System Performance Report and Action Plan (2020), the Bicycle and Pedestrian Master Plan (2019) and the Local Roads Safety Plan (2020). The TIP includes bicycle and pedestrian infrastructure projects, Safe Routes to Schools Projects, and roadway projects that increase vehicular safety. None of these projects use HSIP funds.

4 – PAVEMENT & BRIDGE CONDITION MEASURES (PM2)

FHWA's Bridge & Pavement Condition Performance Measures Final Rule, which is also referred to as the PM2 rule, requires state DOTs and MPOs to establish targets for the following six performance measures:

1. Percent of NHS bridges (by deck area) classified as in good condition;
2. Percent of NHS bridges (by deck area) classified as in poor condition;
3. Percent of Interstate pavements in good condition;
4. Percent of Interstate pavements in poor condition;
5. Percent of non-Interstate National Highway System (NHS) pavements in good condition; and
6. Percent of non-Interstate NHS pavements in poor condition;

For the pavement measures, five pavement metrics are used to assess condition:

- International Roughness Index (IRI) - an indicator of roughness; applicable to asphalt, jointed concrete, and continuous concrete pavements;
- Cracking percent - percentage of pavement surface exhibiting cracking; applicable to asphalt, jointed concrete, and continuous concrete pavements;
- Rutting - extent of surface depressions; applicable to asphalt pavements only;
- Faulting - vertical misalignment of pavement joints; applicable to jointed concrete pavements only; and
- Present Serviceability Rating (PSR) – a quality rating applicable only to NHS roads with posted speed limits of less than 40 miles per hour (e.g., toll plazas, border crossings). States may choose to collect and report PSR for applicable segments as an alternative to the other four metrics.

4.1 Bridge & Pavement Condition Targets

Table 4.1. Statewide Pavement and Bridge Condition Performance Targets

Performance Measure	2023 Statewide Target	2025 Statewide Target
Percent of NHS bridges (by deck area) in good condition	50.0%	50.0%
Percent of NHS bridges (by deck area) in poor condition	10.0%	10.0%
Percent of Interstate pavements in good condition	60.0%	60.0%
Percent of Interstate pavements in poor condition	5.0%	5.0%
Percent of non-Interstate pavements in good condition	40.0%	40.0%
Percent of non-Interstate pavements in poor condition	5.0%	5.0%

4.1.1 Statewide Targets

Federal rules require state DOTs to establish two-year and four-year targets for the bridge and pavement condition measures. On December 16, 2022, FDOT established statewide bridge and pavement targets for the second performance period ending in 2025. These targets are identical to those set for 2019 and 2021, respectively. Florida's performance through 2021 exceeds the targets. The two-year targets represent bridge and pavement condition at the end of calendar year 2023, while the four-year targets represent condition at the end of 2025. Table 4.1 presents the statewide targets.

According to FDOT, 2023 Pavement conditions in Collier County were:

- 84.0% of NHS bridges in good condition / 0.2% in poor condition
- 64.5% of Interstate pavement in good condition / 0% in poor condition
- 42.7%% of Non-Interstate NHS in good condition / 0.3% in poor condition

For comparative purposes, the baseline (2021) conditions were as follows:

- 61.3 percent of NHS bridges (by deck area) is in good condition and 0.5 percent is in poor condition.
- 70.5 percent of the Interstate pavement is in good condition and 0.7 percent is in poor condition;
- 47.5 percent of the non-Interstate NHS pavement is in good condition and 1.1 percent is in poor condition; and

In determining its approach to establishing performance targets for the federal bridge and pavement condition performance measures, FDOT considered many factors. FDOT is mandated by Florida Statute 334.046 to preserve the state's bridges and pavement to specific state-defined standards. To adhere to the statutory guidelines, FDOT prioritizes funding allocations to ensure the current transportation system is adequately preserved and maintained before funding is allocated for capacity improvements. These state statutory guidelines envelope the statewide federal targets that have been established for pavements and bridges.

In addition, FDOT develops a Transportation Asset Management Plan (TAMP) for all NHS pavements and bridges within the state. The TAMP must include investment strategies leading to a program of projects that would make progress toward achievement of the State's targets for asset condition and performance of the NHS. FDOT's first TAMP was approved on June 28, 2019. The TAMP has since been updated in 2022 and 2023 and is waiting final approval from FHWA.

Further, the federal pavement condition measures require a methodology that is different from the methods historically used by FDOT. For bridge condition, the performance is measured in deck area under the federal measure, while FDOT programs its bridge repair or replacement work on a bridge-by-bridge basis. As such, the federal measures are not directly comparable to the methods that are most familiar to FDOT. For pavement condition, the methodology uses different ratings and pavement segment lengths, and FDOT only has one year of data available for non-Interstate NHS pavement using the federal methodology.

FDOT collects and reports bridge and pavement data to FHWA each year to track performance and progress toward the targets. The percentage of Florida's bridges in good condition is slowly decreasing, which is to be expected as the bridge inventory grows older. Reported bridge and pavement data through 2021 exceeded the established targets. Based on anticipated funding levels, FDOT believes the previous targets are still appropriate for 2023 and 2025.

In early 2022, FHWA determined that FDOT made significant progress toward the targets; FHWA's assessment of progress toward the 2023 targets is anticipated to be released in March 2024.

4.1.2 MPO Targets

MPOs must set four-year targets for the six bridge and pavement condition measures within 180 days of when FDOT established targets. MPOs can either agree to program projects that will support the statewide targets

On **November 9, 2018 and again on April 14, 2023, the Collier MPO** agreed to support FDOT's statewide bridge and pavement performance targets, thus agreeing to plan and program projects in the TIP that once implemented, are anticipated to make progress toward achieving the statewide targets.

Collier MPO's NHS roadways are:

- **I-75 (SR 93)**
- **US 41 (SSR 45, Tamiami Trail)**
- **CR 951 (Collier Blvd) between US 41 and I-75.**

There are no bridges on CR 951 between US 41 and I-75. The County resurfaced the roadway in calendar year 2024.

4.2 Bridge & Pavement Investments in the TIP

The Collier MPO's TIP reflects investment prioritized established by FDOT for I-75 and US 41 and is consistent with the 2045 LRTP. The focus of Collier MPO's investments in bridge and pavement condition on the NHS include:

- Pavement replacement and reconstruction
- New lanes or widenings of facilities including resurfacing associated with new capacity projects
- Bridge replacement or reconstruction
- New bridge capacity
- System resiliency projects that support bridge performance.

The projects included in the TIP are consistent with FDOT's Five Year Work Program, and therefore consistent with

FDOT's approach to prioritize funding to ensure the transportation system is adequately preserved and maintained. Per federal planning requirements, the state selects projects on the NHS in cooperation with the MPO from the approved TIP. Given the significant resources devoted in the TIP to pavement and bridge projects, the MPO anticipates that once implemented, the TIP will contribute to progress towards achieving the statewide pavement and bridge condition performance targets.

5 - SYSTEM PERFORMANCE, FREIGHT, & CONGESTION MITIGATION & AIR QUALITY IMPROVEMENT PROGRAM MEASURES (PM3)

FHWA's System Performance/Freight/CMAQ Performance Measures Final Rule, which is referred to as the PM3 rule, requires state DOTs and MPOs to establish targets for the following six performance measures:

National Highway Performance Program (NHPP)

1. Percent of person-miles traveled on the Interstate system that are reliable

2. Percent of person-miles traveled on the non-Interstate NHS that are reliable;

National Highway Freight Program (NHFP)

3. Truck Travel Time Reliability index (TTTR);

Congestion Mitigation and Air Quality Improvement Program (CMAQ)

4. Annual hours of peak hour excessive delay per capita (PHED);

5. Percent of non-single occupant vehicle travel (Non-SOV); and

6. Cumulative 2-year and 4-year reduction of on-road mobile source emissions (NOx, VOC, CO, PM10, and PM2.5) for CMAQ funded projects.

Because all areas in Florida meet current national air quality standards, the three CMAQ measures do not apply in Florida. A description of the first three measures is below.

The first two performance measures assess the percent of person-miles traveled on the Interstate or the non- Interstate NHS that are reliable. Reliability is defined as the ratio of longer travel times to a normal travel time over of all applicable roads, across four time periods between the hours of 6 a.m. and 8 p.m. each day.

The third performance measure assesses the reliability of truck travel on the Interstate system. The TTTR assesses how reliable the Interstate network is by comparing the worst travel times for trucks against the travel time they typically experience.

5.1 System Performance and Freight Targets

5.1.1 Statewide Targets

Federal rules require state DOTs to establish two-year and four-year targets for the system performance and freight targets. On December 16, 2022, FDOT established statewide performance targets for the second performance period ending in 2025. These targets are identical to those set for 2019 and 2021, respectively. Florida's performance through 2021 exceeds the targets. The two-year targets represent performance at the

end of calendar year 2023, while the four-year targets represent performance at the end of 2025. Table 5.1 presents the statewide targets.

Table 5.1. Statewide System Performance and Freight Targets

Performance Measure	2023 Statewide Target	2025 Statewide Target
Percent of person-miles traveled on the Interstate system that are reliable	75.0%	70.0%
Percent of person-miles traveled on the non-Interstate NHS that are reliable	50.0%	50.0%
Truck travel time reliability (Interstate)	1.75	2.00

For comparative purposes, baseline (2021) statewide conditions are as follows:

- 87.5 percent of person-miles traveled on the Interstate are reliable;
- 92.9 percent of person-miles traveled on the non-Interstate are reliable; and
- 1.38 truck travel time reliability index.

In establishing these targets, FDOT reviewed external and internal factors that may affect reliability, analyzed travel time data from the National Performance Management Research Dataset (NPMRDS), and developed a sensitivity analysis indicating the level of risk for road segments to become unreliable.

FDOT collects and reports reliability data to FHWA each year to track performance and progress toward the reliability targets. Performance for all three measures improved from 2017 to 2021, with some disruption in the trend during the global pandemic in 2020. Actual performance in 2019 was better than the 2019 targets, and in early 2021 FHWA determined that FDOT made significant progress toward the 2019 targets. FHWA's assessment of progress toward the 2021 targets is anticipated to be released in March 2023.

The methodologies for the PM3 measures are still relatively new, and the travel time data source has changed since the measures were first introduced. As a result, FDOT only has three years (2017-2019) of pre-pandemic travel reliability trend data as a basis for future forecasts. Based on the current data, Florida's performance continues to exceed the previous targets. Given the uncertainty in future travel behavior, FDOT believes the previous targets are still appropriate for 2023 and 2025. System performance and freight are addressed through several statewide initiatives:

- Florida's Strategic Intermodal System (SIS) is composed of transportation facilities of statewide and interregional significance. The SIS is a primary focus of FDOT's capacity investments and is Florida's primary network for ensuring a strong link between transportation and economic competitiveness. These facilities, which span all modes and includes highways, are the workhorses of Florida's transportation system and account for a dominant share of the people and freight movement to, from and within Florida. The SIS includes 92 percent of NHS lane miles in the state. Thus, FDOT's focus on improving performance of the SIS goes hand-in-hand with improving the NHS, which is the focus of the FHWA's TPM program. The SIS Policy Plan was updated in early 2022 consistent with the updated FTP. The SIS Policy Plan defines the policy framework for designating which facilities are part of the SIS, as well as how SIS investments needs are identified and prioritized. The development of the SIS Five-Year Plan by FDOT considers scores on a range of measures including mobility, safety, preservation, and economic competitiveness as part of FDOT's Strategic Investment Tool (SIT).

- In addition, FDOT's Freight Mobility and Trade Plan (FMTP) defines policies and investments that will enhance Florida's economic development efforts into the future. The FMTP identifies truck bottlenecks and other freight investment needs and defines the process for setting priorities among these needs to receive funding from the National Highway Freight Program (NHFP). Project evaluation criteria tie back to the FMTP objectives to ensure high priority projects support the statewide freight vision. In May 2020, FHWA approved the FMTP as FDOT's State Freight Plan.

- FDOT also developed and refined a methodology to identify freight bottlenecks on Florida's SIS on an annual basis using vehicle probe data and travel time reliability measures. Identification of bottlenecks and estimation of their delay impact aids FDOT in focusing on relief efforts and ranking them by priority. In turn, this information is incorporated into FDOT's SIT to help identify the most important SIS capacity projects to relieve congestion.

5.1.2 MPO Targets

MPOs must establish four-year targets for all three performance measures. MPOs can either agree to program projects that will support the statewide targets or establish their own quantifiable targets for the MPO's planning area for one or more measures.

On **November 9, 2018 and again on April 14, 2023, the Collier MPO** agreed to support FDOT's statewide system performance and freight targets, thus agreeing to plan and program projects in the TIP that once implemented, are anticipated to make progress toward achieving the statewide targets.

FDOT reported on the **2023 conditions within Collier County** as follows:

- 91.2% of NHS Interstate Person-Miles Traveled are reliable
- 98.1% of NHS Non-Interstate Person-Miles Traveled are reliable
- 1.40 Truck Travel Time reliability index on the NHS.

5.2 System Performance and Freight Investments in the TIP

The Collier MPO TIP reflects investment priorities established in the **2045 LRTP**. The focus of **Collier MPO's** investments that address system performance and freight are:

- Corridor improvements
- Intersection improvements on NHS roads
- Projects evaluated in the CMP and selected for the TIP
- Investments in transit, bicycle, and pedestrian systems that promote mode shift
- **Additional lanes planned on I-75 between Golden Gate Parkway in Collier County and Bonita Beach Rd in Lee County**
- **Interchange improvements at I-75 and Pine Ridge (2025-2029 TIP) and at I-75 and Immokalee (2026-2030 TIP)**
- **Immokalee Loop Road and widening of SR 29**
- Freight improvements that increase reliability and safety

Collier MPO uses project selection criteria related to congestion relief, reliability, mode shift, and freight in the LRTP and in the project prioritization process for the use of the MPO's SU "box" funds.

The projects included in the TIP are consistent with FDOT's Five Year Work Program and therefore with FDOT's approach to prioritize funding to address performance goals and targets. Per federal planning requirements, the state selects projects on the NHS in cooperation with he MPO from the approved TIP. Given the significant resources devoted in the TIP to projects that address system performance and freight, the MPO anticipates that once implemented, the TIP will contribute to progress towards achieving the statewide reliability performance targets.

6 - TRANSIT ASSET MANAGEMENT MEASURES

Transit Asset Performance Measures

FTA's Transit Asset Management (TAM) regulations apply to all recipients and subrecipients of Federal transit funding that own, operate, or manage public transportation capital assets. The regulations define the term "state of good repair," require that public transportation providers develop and implement TAM plans, and established state of good repair standards and performance measures for four asset categories: equipment, rolling stock, transit infrastructure, and facilities. Table 6.1 identifies the TAM performance measures.

Table 6.1. FTA TAM Performance Measures

Asset Category	Performance Measure
1. Equipment	Percentage of non-revenue, support-service and maintenance vehicles that have met or exceeded their Useful Life Benchmark
2. Rolling Stock	Percentage of revenue vehicles within a particular asset class that have either met or exceeded their Useful Life Benchmark
3. Infrastructure	Percentage of track segments with performance restrictions
4. Facilities	Percentage of facilities within an asset class rated below condition 3 on the TERM scale

For equipment and rolling stock classes, useful life benchmark (ULB) is defined as the expected lifecycle of a capital asset, or the acceptable period of use in service, for a particular transit provider's operating environment. ULB considers a provider's unique operating environment such as geography, service frequency, etc.

Public transportation providers are required to establish and report TAM targets annually for the following fiscal year. Each public transportation provider or its sponsors must share its targets with each MPO in which the public transportation provider's projects and services are programmed in the MPO's TIP. MPOs are not required to establish TAM targets annually each time the transit provider establishes targets. Instead, MPO targets must be established when the MPO updates the LRTP (although it is recommended that MPOs reflect the most current transit provider targets in

6- TRANSIT ASSET MANAGEMENT MEASURES

Transit Asset Performance Measures

FTA's Transit Asset Management (TAM) regulations apply to all recipients and subrecipients of Federal transit funding that own, operate, or manage public transportation capital assets. The regulations define the term "state of good repair," require that public transportation providers develop and implement TAM plans, and established state of good repair standards and performance measures for four asset categories: equipment, rolling stock, transit infrastructure, and facilities. Table 6.1 identifies the TAM performance measures.

Table 6.1. FTA TAM Performance Measures

Asset Category	Performance Measure
1. Equipment	Percentage of non-revenue, support-service and maintenance vehicles that have met or exceeded their Useful Life Benchmark
2. Rolling Stock	Percentage of revenue vehicles within a particular asset class that have either met or exceeded their Useful Life Benchmark
3. Infrastructure	Percentage of track segments with performance restrictions
4. Facilities	Percentage of facilities within an asset class rated below condition 3 on the TERM scale

For equipment and rolling stock classes, useful life benchmark (ULB) is defined as the expected lifecycle of a capital asset, or the acceptable period of use in service, for a particular transit provider's operating environment. ULB considers a provider's unique operating environment such as geography, service frequency, etc.

Public transportation providers are required to establish and report TAM targets annually for the following fiscal year. Each public transportation provider or its sponsors must share its targets with each MPO in which the public transportation provider's projects and services are programmed in the MPO's TIP. MPOs are not required to establish TAM targets annually each time the transit provider establishes targets. Instead, MPO targets must be established when the MPO updates the LRTP (although it is recommended that MPOs reflect the most current transit provider targets in

the TIP if they have not yet taken action to update MPO targets). When establishing TAM targets, the MPO can either agree to program projects that will support the transit provider targets or establish its own separate regional TAM targets for the MPO planning area. MPO targets may differ from agency targets, especially if there are multiple transit agencies in the MPO planning area. To the maximum extent practicable, public transit providers, states, and MPOs must coordinate with each other in the selection of performance targets.

The TAM regulation defines two tiers of public transportation providers based on size parameters. Tier I providers are those that operate rail service, or more than 100 vehicles in all fixed route modes, or more than 100 vehicles in one non-fixed route mode. Tier II providers are those that are a subrecipient of FTA 5311 funds, or an American Indian Tribe, or have 100 or less vehicles across all fixed route modes or have 100 or less vehicles in one non-fixed route mode. A Tier I provider must establish its own TAM targets, as well as report performance and other data to FTA. A Tier II provider has the option to establish its own targets or to participate in a Group Plan with other Tier II providers whereby targets are established for the entire group.

6.1 Transit Asset Management Targets

The Collier MPO has a single Tier II transit provider operating in the region – the Board of County Commissioners (BCC) oversees the Collier Area Transit (CAT) system. CAT does not participate in the FDOT Group TAM Plan because it has too few busses to meet the criteria.

6.1.1 Transit Provider Targets

CAT's TAM targets are based on the condition of existing transit assets and planned investments in equipment, rolling stock, infrastructure, and facilities. The targets reflect the most recent data available on the number, age, and condition of transit assets, and capital investment plans for improving these assets. The table summarizes both existing conditions for the most recent year available, and the current targets.

Table 6.1 Transit /FY23 Performance and Performance Targets for FY24

** Collier County Facilities Management Division assists with conducting facilities condition assessments.*

General Condition Assessment Rating Scale

5 - Excellent
4 - Good
3 - Adequate
2 - Marginal
1 - Poor

Facility Performance Measure			
Number of Facilities	*Number of Facilities at or below 3.0*	*Percent facilities at or Below 3.0*	*Performance Target*
5	1	20%	25%

Collier County Public Transit & Neighborhood Division

FY24 Transit Asset Management Assets Performance & Performance Targets for FY25

Rolling Stock				
Fleet Size	*Veh Type*	*ULB*	*% Exceeds ULB*	*Performance Targets*
30	Over the road bus	14 years	0%	4%
28	Cutaway bus	10 years	0%	4%
5	Mini Van	8 years	20%	25%
1	Automobiles	8 years	100%	100%
5	Trucks and other Rubber Tire Vehicles	8 years	80%	40%

Rolling Stock Performance targets are based on the Useful life Benchmark, replacement schedule is based on ULB and mileage of vehicles.

Facilities			
Bus Passenger Transfer Station - Base 1			
Facility Type	*Component*	*Condition Rating - *Pre-Assessment*	*Performance Targets*
Administration		4	4
	Substructure	4	4
	Shell	3	4
	Interior	4	4
	Conveyance	4	4
	Plumbing	4	4
	HVAC	4	4
	Fire Protection	5	5
	Electrical	4	4
	Site	4	4

	Site	4	4
Maintenance		**3**	**4**
	Substructure	2	4
	Shell	1	3
	Interior	1	3
	Conveyance	4	4
	Plumbing	3	3
	HVAC	3	3
	Fire Protection	4	4
	Electrical	3	4
	Equipment	4	4
	Fare Collections	4	4
	Site	4	3
Fuel Station		**4**	**4**
	Substructure	4	4
	Shell	4	4
	Interior	4	4
	Plumbing	4	4
	HVAC		
	Fire Protection	5	5
	Electrical	4	4
	Equipment	5	4
	Site	4	4
Bus Wash		**4**	**4**
	Substructure	4	4
	Shell	4	4
	Interior	4	4
	Plumbing	4	4
	HVAC		
	Fire Protection	5	5
	Electrical	4	4
	Equipment	4	4
	Site	5	4

Intermodal Passenger Transfer Station - Base 2			
Facility Type	*Component*	*Condition Rating -* Pre-Assessment*	*Performance Targets*
Administration		**4**	**4**
	Substructure	4	4
	Shell	4	4
	Interior	4	4
	Plumbing	4	4
	HVAC	4	4
	Fire Protection	4	4
	Electrical	4	4
	Site	4	4

6.2.2 MPO Transit Asset Management Targets

As discussed above, MPOs are not required to establish TAM targets annually each time the transit provider establishes targets. Instead, MPO's must revisit targets each time the MPO updates the LRTP. MPOs can either agree to program projects that will support the transit provider targets or establish separate regional TAM targets for the MPO planning area. MPO targets may differ from agency targets, especially if there are multiple transit agencies in the MPO planning area.

On October 12, 2018 and again on December 9, 2022, the Collier MPO agreed to support the Collier County BCC/CAT transit asset management targets, thus agreeing to plan and program projects in the TIP that once implemented, are anticipated to make progress toward achieving the transit provider targets.

6.3 Transit Asset Management Investments in the TIP

The Collier MPO TIP was developed and is managed in cooperation with CAT. It reflects investment priorities established in the 2045 LRTP. CAT submits a list of Transit Priority Projects to the MPO Board for approval on an annual basis. The priority projects reflect the investment priorities established in the 2045 LRTP which incorporates the Transit Development Plan as its transit element. FTA funding, as programmed by the MPO, CAT and FDOT is used for programs and products to improve the conditions of CAT's transit assets.

The focus of **Collier MPO's** investments that address transit state of good repair include:

- Bus and other vehicle purchases, repair and replacements
- Equipment purchases, repair and replacements
- Repair, rehabilitation and replacement of transit facilities

7 - TRANSIT SAFETY PERFORMANCE

FTA's Public Transportation Agency Safety Plan (PTASP) regulations established transit safety performance management requirements for providers of public transportation systems that receive federal financial assistance under 49 U.S.C. Chapter 53.

The regulations apply to all operators of public transportation that are a recipient or sub-recipient of FTA Urbanized Area Formula Grant Program funds under 49 U.S.C. Section 5307, or that operate a rail transit system that is subject to FTA's State Safety Oversight Program. The PTASP regulations do not apply to certain modes of transit service that are subject to the safety jurisdiction of another Federal agency, including passenger ferry operations regulated by the United States Coast Guard, and commuter rail operations that are regulated by the Federal Railroad Administration.

The PTASP must include performance targets for the performance measures established by FTA in the National Public Transportation Safety Plan, which was published on January 28, 2017. The transit safety performance measures are:

- Total number of reportable fatalities and rate per total vehicle revenue miles by mode.
- Total number of reportable injuries and rate per total vehicle revenue miles by mode.
- Total number of reportable safety events and rate per total vehicle revenue miles by mode.
- System reliability – mean distance between major mechanical failures by mode.

In Florida, each Section 5307 or 5311 public transportation provider must develop a System Safety Program Plan (SSPP) under Chapter 14-90, Florida Administrative Code. FDOT technical guidance recommends that Florida's transit agencies revise their existing SSPPs to be compliant with the new FTA PTASP requirements.[1]

Each public transportation provider that is subject to the PTASP regulations must certify that its SSPP meets the requirements for a PTASP, including transit safety targets for the federally required measures. Providers were required to certify their initial PTASP and safety targets by July 20, 2021. Once the public transportation provider establishes safety targets it must make the targets available to MPOs to aid in the planning process. MPOs are not required to establish transit safety targets annually each time the transit provider establishes targets. Instead, MPO targets must be established when the MPO updates the LRTP (although it is recommended that MPOs reflect the current transit provider targets in their TIPs). When establishing transit safety targets, the MPO can either agree to program projects that will support the transit provider targets or establish its own separate regional transit safety targets for the MPO planning area. In addition, the **Collier MPO** must reflect those targets in LRTP and TIP updates.

7.1 Transit Safety Targets

CAT is responsible for developing a PTASP and establishing transit safety targets. **Collier MPO** adopted the transit safety targets shown below on September 11, 2020.

Table 7-1 Collier Area Transit Safety Targets 2024 Report

SPT Category	2021		2022		2023		3-Year Average		Target	
	MB	DR	MB	DR	MB	DR	MB	DR	MB	DR
Total Number of Fatalities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
Fatality Rate per 100,000 VRM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
Total Number of Injuries	0.0	0.0	6.0	3.0	3.0	5.0	3.0	2.7	3	2
Injury Rate per 100,000 VRM	0.0	0.0	0.4	0.3	0.2	0.4	0.2	0.2	0.2	0.2
Total Number of Safety Events	0.0	0.0	6.0	3.0	4.0	5.0	3.3	2.7	3	3
Safety Event Rate per 100,000 VRM	0.0	0.0	0.4	0.3	0.3	0.4	0.2	0.2	0.3	0.2
Total Number of Major Mechanical System Failures	73.0	20.0	134.0	60.0	70.0	9.0	92.3	29.7	20	20
Vehicle Failures Per 100,000 VRM)	5.1	2.0	9.7	6.1	5.1	0.7	6.7	2.9	2	2
Annual VRM	1,422,532.00	995,771.00	1,381,925.00	989,918.00	1,366,218.00	1,306,827.00	1,390,225	1,097,505	1,400,000	1,000,000

7.2 Transit Safety Investments in the TIP

The **Collier MPO** TIP was developed and is managed in cooperation with **CAT.** It reflects the investment priorities established in the 2045 LRTP.

FTA funding, as programmed by the region's transit providers and FDOT, is used for programs and products to improve the safety of the region's transit systems. Transit safety is a consideration in the methodology **Collier MPO** uses to select projects for inclusion in the TIP. The TIP includes specific investment priorities that support all of the MPO's goals, including transit safety, using a prioritization and project selection process established in the LRTP. This process evaluates projects that, once implemented, are anticipated to improve transit safety in the MPO's planning area. **Collier MPO** relies on CAT to include transit safety-related projects in the annual list of Transit Priorities submitted to the MPO.

APPENDIX K: AMENDMENTS AND ADMINISTRATIVE MODIFICATIONS

To be inserted as they occur.

BACK COVER

7A Attachment 3
TAC/CAC 3/24/25

DISTRICT 1

FDOT

TENTATIVE WORK PROGRAM

PUBLIC HEARING REPORT

FISCAL YEAR 2026 TO FISCAL YEAR 2030

COLLIER COUNTY

DETAIL REPORT

AS OF 11/14/2024 9:15 PM SUBJECT TO CHANGE

FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 1
PROJECTS FUNDED JULY 1, 2025 TO JUNE 30, 2030
VISIT US AT WWW.FDOT.GOV/WPPH/DISTRICT1

COLLIER COUNTY **Highways**

000151-1 - TOLL OPERATIONS EVERGLADES PARKWAY ALLIGATOR ALLEY
Type of Work: TOLL PLAZA

Phase	Fund Code	2026	2027	2028	2029	2030
Operations	TO02	$6,113,401	$6,417,247	$6,530,277	$6,718,651	$6,900,479
Total for Project 000151-1		**$6,113,401**	**$6,417,247**	**$6,530,277**	**$6,718,651**	**$6,900,479**

412666-1 - COLLIER COUNTY TSMCA
Type of Work: TRAFFIC CONTROL DEVICES/SYSTEM

Phase	Fund Code	2026	2027	2028	2029	2030
Operations	DDR	$451,263	$274,631	$52,172		
	DITS	$200,000	$471,990			
Total for Project 412666-1		**$651,263**	**$746,621**	**$52,172**		

413627-1 - CITY OF NAPLES TSMCA
Type of Work: TRAFFIC CONTROL DEVICES/SYSTEM

Phase	Fund Code	2026	2027	2028	2029	2030
Operations	DDR	$141,902	$114,403	$153,459		
	DITS		$33,117			
Total for Project 413627-1		**$141,902**	**$147,520**	**$153,459**		

417540-5 - SR 29 FROM CR 846 E TO N OF NEW MARKET ROAD W
Type of Work: NEW ROAD CONSTRUCTION

Phase	Fund Code	2026	2027	2028	2029	2030
Right of Way	ART	$7,821,000				
	FINC	$6,000,000				
Railroad & Utilities	ART	$2,000,000				
	FINC		$11,052,000			
Construction	DIH		$53,100			
	FINC		$72,728,585			
Environmental	FINC		$500,000			
Total for Project 417540-5		**$15,821,000**	**$84,333,685**			

417540-6 - SR 29 FROM N OF NEW MARKET RD TO SR 82
Type of Work: ADD LANES & RECONSTRUCT

Phase	Fund Code	2026	2027	2028	2029	2030
Right of Way	FINC	$301,403				
Railroad & Utilities	FINC	$576,000				
Construction	DIH		$159,300			
	FINC		$57,655,547			
Environmental	FINC	$450,000				
Total for Project 417540-6		**$1,327,403**	**$57,814,847**			

COLLIER COUNTY **Highways**

425843-3 - I-75 (SR 93) AT SR 951 (COLLIER BLVD INTERCHANGE)
Type of Work: LANDSCAPING

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	DS		$1,467,684			
Total for Project 425843-3			**$1,467,684**			

435110-2 - OLD US 41 FROM US 41 TO LEE / COLLIER COUNTY LINE
Type of Work: ADD LANES & RECONSTRUCT

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	SU			$3,001,000		
Total for Project 435110-2				**$3,001,000**		

435389-1 - ALLIGATOR ALLEY FIRE STATION @ MM63
Type of Work: MISCELLANEOUS STRUCTURE

Phase	Fund Code	2026	2027	2028	2029	2030
Capital	DSB2	$1,500,000	$1,500,000			
Total for Project 435389-1		**$1,500,000**	**$1,500,000**			

437103-1 - COLLIER TMC OPS FUND COUNTY WIDE
Type of Work: OTHER ITS

Phase	Fund Code	2026	2027	2028	2029	2030
Operations	DDR	$79,500	$100,500	$100,500	$100,500	$100,500
Total for Project 437103-1		**$79,500**	**$100,500**	**$100,500**	**$100,500**	**$100,500**

437908-1 - SR 45 (US 41) FROM GOLDEN GATE PARKWAY TO 5TH AVENUE SOUTH
Type of Work: FLEXIBLE PAVEMENT RECONSTRUCT.

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	DDR		$5,300,000			
Total for Project 437908-1			**$5,300,000**			

437925-1 - SIGNAL TIMING COUNTY ROADS AT VARIOUS LOCATIONS
Type of Work: TRAFFIC SIGNAL UPDATE

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	CARB	$783,524				
Total for Project 437925-1		**$783,524**				

COLLIER COUNTY **Highways**

440436-1 - ORCHID DRIVE SIDEWALK AND BIKE LANE CONNECTION
Type of Work: BIKE LANE/SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	SU	$45,362				
Construction	SU			$349,407		
Total for Project 440436-1		**$45,362**		**$349,407**		

440437-2 - SOUTH GOLF DR FROM GULF SHORE BLVD TO W US 41
Type of Work: BIKE LANE/SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	SU	$2,860,749				
	TALT	$120,000				
Total for Project 440437-2		**$2,980,749**				

440441-1 - AIRPORT PULLING RD FROM VANDERBILT RD TO IMMOKALEE RD
Type of Work: ADD THRU LANE(S)

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	CIGP	$1,286,906				
	LF	$4,928,100				
	TRIP	$1,008,032				
	TRWR	$2,633,162				
Total for Project 440441-1		**$9,856,200**				

441512-1 - SR 45 (US 41) FROM N OF OLD US 41 TO S OF GULF PARK DR
Type of Work: RESURFACING

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	ACNR		$7,061,289			
	CM		$2,180,274			
	DS		$678,071			
	DSB2		$2,906,644			
	SA		$11,082,976			
Total for Project 441512-1			**$23,909,254**			

443375-3 - COLLIER COUNTY LAKE TRAFFORD ROAD SIDEWALK AND BIKE LANES
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	CARU	$700,872				
	TALU	$98,588	$1,000			
Total for Project 443375-3		**$799,460**	**$1,000**			

COLLIER COUNTY **Highways**

443375-4 - COLLIER COUNTY LAKE TRAFFORD ROAD SIDEWALK AND BIKE LANES
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	TALT	$571,675				
	TALU	$1,000				
Total for Project 443375-4		**$572,675**				

445460-1 - CAXAMBAS COURT / ROBERTS BAY REPLACEMENT STRUCTURE #034112
Type of Work: BRIDGE REPLACEMENT

Phase	Fund Code	2026	2027	2028	2029	2030
Railroad & Utilities	GFBR		$1,150,000			
	LF		$350,000			
Construction	GFBR		$6,196,551			
	LF		$2,077,020			
Total for Project 445460-1			**$9,773,571**			

446251-1 - TRAVEL TIME DATA COLLIER COUNTY ITS
Type of Work: ITS COMMUNICATION SYSTEM

Phase	Fund Code	2026	2027	2028	2029	2030
Capital	SU		$700,000			
Total for Project 446251-1			**$700,000**			

446341-1 - GOODLETTE FRANK RD FROM VANDERBILT RD TO IMMOKALEE RD
Type of Work: ADD LANES & RECONSTRUCT

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	LF		$2,750,000			
	TRIP		$381,063			
	TRWR		$2,368,937			
Total for Project 446341-1			**$5,500,000**			

446451-1 - SR 45 (US 41) AT CR 886 (GOLDEN GATE PKWY)
Type of Work: INTERSECTION IMPROVEMENT

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	SU		$1,799,881			
Total for Project 446451-1			**$1,799,881**			

446550-2 - SHADOWLAWN ELEMENTARY - SRTS
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	SR2T	$99,943				
Total for Project 446550-2		**$99,943**				

COLLIER COUNTY **Highways**

448069-1 - WIGGINS PASS SIDEWALK FROM VANDERBILT DR TO US 41
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	CARU		$856,085			
	SU		$1,392,542			
	TALU		$694,926			
Total for Project 448069-1			**$2,943,553**			

448126-2 - GOODLETTE - FRANK RD SIDEWALKS - VARIOUS LOCATIONS
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	SU	$1,171,926				
	TALU	$338,697				
Total for Project 448126-2		**$1,510,623**				

448128-2 - PINE ST SIDEWALKS FROM BECCA AVE TO US 41
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	SU	$270,511				
Total for Project 448128-2		**$270,511**				

448129-1 - NAPLES MANOR SIDEWALK - VARIOUS LOCATION 4 SEGMENTS
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	CARB	$1,082,769				
	CARU	$14,600				
	SU	$11,895				
	TALT	$1,048,843				
	TALU	$188,773				
Total for Project 448129-1		**$2,346,880**				

448130-1 - GOLDEN GATE SIDEWALKS - VARIOUS LOCATIONS 4 SEGMENTS
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	SU	$322,402				
Construction	TALT			$1,203,952		
Total for Project 448130-1		**$322,402**		**$1,203,952**		

COLLIER COUNTY **Highways**

448131-1 - NAPLES SIDEWALKS ON 26TH AVE
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	CARU	$140,613				
	SU	$537,975				
Total for Project 448131-1		**$678,588**				

449397-1 - VANDERBILT BEACH RD FROM AIRPORT RD TO LIVINGSTON RD
Type of Work: FEASIBILITY STUDY

Phase	Fund Code	2026	2027	2028	2029	2030
Planning	SU	$431,000				
Total for Project 449397-1		**$431,000**				

449484-1 - LAVERN GAYNOR ELEMENTARY SCHOOL - SAFE ROUTES TO SCHOOL
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	SR2T		$850,496			
Total for Project 449484-1			**$850,496**			

449514-1 - 91ST AVE N SIDEWALK FROM VANDERBILT DR TO US 41
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	CARB		$246,686			
	SU		$564,656			
	TALU		$336,562			
Total for Project 449514-1			**$1,147,904**			

449526-1 - ITS FIBER OPTIC AND FPL
Type of Work: ITS COMMUNICATION SYSTEM

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	SU	$831,337				
Total for Project 449526-1		**$831,337**				

449580-1 - ATMS RETIMING FOR ARTERIALS
Type of Work: ITS COMMUNICATION SYSTEM

Phase	Fund Code	2026	2027	2028	2029	2030
Capital	SU	$881,900				
Total for Project 449580-1		**$881,900**				

COLLIER COUNTY **Highways**

449581-1 - ITS VEHICLE DETECTION UPDATE
Type of Work: ITS COMMUNICATION SYSTEM

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	CARU			$523,381		
	SU			$468,619		
Total for Project 449581-1				**$992,000**		

451272-1 - SR 45 (US 41) FROM LEE COUNTY LINE TO N OF OLD US 41
Type of Work: PAVEMENT ONLY RESURFACE (FLEX)

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	DDR	$4,653,980				
	DIH	$5,150				
Total for Project 451272-1		**$4,659,130**				

451276-1 - SR 29 FROM S OF I-75 TO N OF BRIDGE NO 030298
Type of Work: PAVEMENT ONLY RESURFACE (FLEX)

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	DDR		$5,515,972			
	DIH		$53,100			
Total for Project 451276-1			**$5,569,072**			

451542-1 - IMMOKALEE SIDEWALKS
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	SU			$182,000		
Construction	TALU					$899,000
Total for Project 451542-1				**$182,000**		**$899,000**

451543-1 - BAYSHORE CRA SIDEWALK
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	SU	$73,051				
Construction	SU			$213,155		
Total for Project 451543-1		**$73,051**		**$213,155**		

452052-1 - EVERGLADES CITY PH4 BIKE/PED IMPROVEMENTS
Type of Work: BIKE LANE/SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	SU			$426,466		
Total for Project 452052-1				**$426,466**		

COLLIER COUNTY **Highways**

452064-1 - MCCARTY ST FROM FLORIDIAN AVE TO CAROLINE AVE
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	SU			$156,000		
Construction	CARU					$755,000
	SU					$171,000
Total for Project 452064-1				**$156,000**		**$926,000**

452065-1 - GOLDEN GATE CITY SIDEWALKS - 23RD PL SW & 45TH ST SW
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	SU			$36,672		
Construction	SU					$274,428
Total for Project 452065-1				**$36,672**		**$274,428**

452207-1 - VANDERBILT BEACH ROAD FROM GULF SHORE DRIVE TO US 41
Type of Work: BIKE PATH/TRAIL

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	SU					$101,000
Total for Project 452207-1						**$101,000**

452208-1 - 106TH AVE N FROM VANDERBILT DR TO US 41
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	SU					$73,000
Total for Project 452208-1						**$73,000**

452209-1 - BALD EAGLE DR FROM SAN MARCO RD TO N COLLIER BLVD
Type of Work: BIKE LANE/SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	CARB		$536,504			
	SU		$930,777			
Total for Project 452209-1			**$1,467,281**			

452210-1 - 109TH AVE N FROM VANDERBILT DR TO US 41
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	SU					$73,000
Total for Project 452210-1						**$73,000**

COLLIER COUNTY **Highways**

452211-1 - 108TH AVE N FROM VANDERBILT DR TO US 41
Type of Work: SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	SU			$1,000		$72,000
Total for Project 452211-1				**$1,000**		**$72,000**

452247-1 - IMMOKALEE RD FROM LIVINGSTON RD TO LOGAN BLVD
Type of Work: PAVE SHOULDERS

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	CIGP	$750,000				
	LF	$750,000				
Construction	CIGP			$5,586,573		
	LF			$10,284,458		
	TRIP			$4,624,331		
	TRWR			$2,638		
Total for Project 452247-1		**$1,500,000**		**$20,498,000**		

452544-3 - I-75 FROM IMMOKALEE TO BONITA BEACH
Type of Work: ADD LANES & RECONSTRUCT

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	MFF	$4,740,000	$584,748	$1,810,930		
Right of Way	DIH	$100,000				
	MFF	$7,500,000				
Railroad & Utilities	MFF			$2,000,000		
Design Build	MFF	$515,000	$3,186,000	$102,517,621		
Total for Project 452544-3		**$12,855,000**	**$3,770,748**	**$106,328,551**		

452544-4 - IMMOKALEE INTERCHANGE
Type of Work: ADD LANES & RECONSTRUCT

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	MFF	$6,100,000		$2,338,448		
Right of Way	DIH	$100,000				
	MFF	$7,500,000				
Railroad & Utilities	LF			$2,000,000		
	MFF			$2,000,000		
Design Build	MFF	$515,000	$1,593,000	$49,397,529		
Total for Project 452544-4		**$14,215,000**	**$1,593,000**	**$55,735,977**		

COLLIER COUNTY **Highways**

452544-5 - I-75 FROM IMMOKALEE TO PINE RIDGE
Type of Work: ADD LANES & RECONSTRUCT

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	MFF	$4,200,000				$923,868
Right of Way	DIH	$100,000				
	MFF	$11,500,000				
Design Build	MFF	$412,000				$13,320,000
Total for Project 452544-5		**$16,212,000**				**$14,243,868**

452544-6 - I-75 FROM PINE RIDGE TO GOLDEN GATE
Type of Work: ADD LANES & RECONSTRUCT

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	MFF	$4,200,000				
Right of Way	DIH	$100,000				
	MFF	$9,500,000				
Design Build	MFF	$103,000				
Total for Project 452544-6		**$13,903,000**				

453415-1 - US 41 FROM 3RD AVE TO SR 84 INTERSECTION/MOBILITY IMPROVEMENTS PD&E
Type of Work: PD&E/EMO STUDY

Phase	Fund Code	2026	2027	2028	2029	2030
PD & E	SU		$1,188,222			
Total for Project 453415-1			**$1,188,222**			

453421-1 - 47TH AVE NE BRIDGE FROM EVERGLADES BLVD TO 20TH ST NE
Type of Work: NEW BRIDGE CONSTRUCTION

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	SU				$4,810,000	
Total for Project 453421-1					**$4,810,000**	

455927-1 - HARBOR DR & MOORING LINE DR BETWEEN US41 & CRAYTON RD
Type of Work: TRAFFIC SIGNAL UPDATE

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	SU					$1,998,153
Total for Project 455927-1						**$1,998,153**

COLLIER COUNTY **Highways**

455935-1 - GOLDENROD AVE OVER SMOKEHOUSE BAY BRIDGE #034116
Type of Work: BRIDGE REPLACEMENT

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	LF		$493,146			
	SA		$25,000			
Construction	ACBZ				$3,266,488	
	LF				$1,069,963	
Total for Project 455935-1			**$518,146**		**$4,336,451**	

456013-1 - IMMOKALEE ROAD (CR846E) PAVED SHOULDERS IMPROVEMENTS - PHASE 4
Type of Work: PAVE SHOULDERS

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	SCRC	$999,855				
Total for Project 456013-1		**$999,855**				

456026-1 - SR 951 FROM NORTH OF MAINSAIL DR TO SOUTH OF TOWER ROAD
Type of Work: PAVEMENT ONLY RESURFACE (FLEX)

Phase	Fund Code	2026	2027	2028	2029	2030
Construction	FC5	$283,196				
Total for Project 456026-1		**$283,196**				

COLLIER COUNTY **Maintenance**

412574-1 - COLLIER COUNTY HIGHWAY LIGHTING
Type of Work: ROUTINE MAINTENANCE

Phase	Fund Code	2026	2027	2028	2029	2030
Bridge/Roadway/Contract Maintenance	D	$546,466	$562,865			
Total for Project 412574-1		**$546,466**	**$562,865**			

412918-2 - COLLIER COUNTY ASSET MAINTENACE
Type of Work: ROUTINE MAINTENANCE

Phase	Fund Code	2026	2027	2028	2029	2030
Bridge/Roadway/Contract Maintenance	D	$3,083,010	$200,000			
Total for Project 412918-2		**$3,083,010**	**$200,000**			

413537-1 - NAPLES HIGHWAY LIGHTING DDR FUNDING
Type of Work: ROUTINE MAINTENANCE

Phase	Fund Code	2026	2027	2028	2029	2030
Bridge/Roadway/Contract Maintenance	D	$206,751	$212,956			
Total for Project 413537-1		**$206,751**	**$212,956**			

COLLIER COUNTY **Miscellaneous**

448265-1 - PHASE 3 EVERGLADES CITY BIKE/PED MASTERPLAN
Type of Work: BIKE LANE/SIDEWALK

Phase	Fund Code	2026	2027	2028	2029	2030
Preliminary Engineering	SU	$24,570				
	TALU	$405,430				
Construction	CARU			$142,814		
	SU			$1,227,858		
Total for Project 448265-1		**$430,000**		**$1,370,672**		

COLLIER COUNTY — **Modal Development: Aviation**

441784-1 - IMMOKALEE ARPT ENVIRONMENTAL STUDY FOR RUNWAY 9/27 EXTENSION
Type of Work: AVIATION ENVIRONMENTAL PROJECT

Phase	Fund Code	2026	2027	2028	2029	2030
Capital	DDR	$10,000				
	FAA	$180,000				
	LF	$10,000				
Total for Project 441784-1		**$200,000**				

446353-1 - NAPLES MUNICIPAL AIRPORT SOUTH QUADRANT BOX AND T-HANGARS
Type of Work: AVIATION REVENUE/OPERATIONAL

Phase	Fund Code	2026	2027	2028	2029	2030
Administration	DDR		$2,500,000			
	DPTO	$2,500,000		$2,500,000		
Total for Project 446353-1		**$2,500,000**	**$2,500,000**	**$2,500,000**		

446360-1 - MARCO ISLAND EXED ARPT MAINTENANCE FACILITY
Type of Work: AVIATION REVENUE/OPERATIONAL

Phase	Fund Code	2026	2027	2028	2029	2030
Capital	DPTO	$600,000				
	LF	$150,000				
Total for Project 446360-1		**$750,000**				

446385-1 - NAPLES MUNICIPAL AIRPORT EAST QUADRANT APRON CONSTRUCTION
Type of Work: AVIATION CAPACITY PROJECT

Phase	Fund Code	2026	2027	2028	2029	2030
Capital	DPTO	$515,000				
	FAA	$9,270,000				
	LF	$515,000				
Total for Project 446385-1		**$10,300,000**				

455456-1 - MARCO ISLAND EXECUTIVE AIRPORT MASTER PLAN
Type of Work: AVIATION CAPACITY PROJECT

Phase	Fund Code	2026	2027	2028	2029	2030
Capital	DPTO		$38,889			
	FAA		$700,000			
	LF		$38,889			
Total for Project 455456-1			**$777,778**			

COLLIER COUNTY **Modal Development: Intermodal**

446358-1 - IMMOKALEE REGIONAL ARPT AIRPARK BLVD EXTENSION
Type of Work: AVIATION CAPACITY PROJECT

Phase	Fund Code	2026	2027	2028	2029	2030
Capital	DPTO				$696,000	$3,000,000
	LF				$174,000	
Total for Project 446358-1					**$870,000**	**$3,000,000**

COLLIER COUNTY — **Modal Development: Transit**

410120-1 - COLLIER COUNTY FTA SECTION 5311 OPERATING ASSISTANCE
Type of Work: OPERATING/ADMIN. ASSISTANCE

Phase	Fund Code	2026	2027	2028	2029	2030
Operations	DU	$581,826	$657,432	$404,525	$530,000	$784,255
	LF	$581,826	$657,432	$404,525	$530,000	$784,255
Total for Project 410120-1		**$1,163,652**	**$1,314,864**	**$809,050**	**$1,060,000**	**$1,568,510**

410139-1 - COLLIER COUNTY STATE TRANSIT BLOCK GRANT OPERATING ASSISTANCE
Type of Work: OPERATING FOR FIXED ROUTE

Phase	Fund Code	2026	2027	2028	2029	2030
Operations	DDR	$1,278,095	$1,313,107	$1,352,500	$1,393,076	$1,434,868
	LF	$1,278,095	$1,313,107	$1,352,500	$1,393,076	$1,434,868
Total for Project 410139-1		**$2,556,190**	**$2,626,214**	**$2,705,000**	**$2,786,152**	**$2,869,736**

410146-1 - COLLIER COUNTY/BONITA SPRING UZA/FTA SECTION 5307 CAPITAL ASSISTANCE
Type of Work: CAPITAL FOR FIXED ROUTE

Phase	Fund Code	2026	2027	2028	2029	2030
Capital	FTA	$4,550,109	$4,741,514	$6,590,514	$6,595,220	$6,794,680
	LF	$1,137,527	$1,185,379	$1,647,629	$1,648,805	$1,698,670
Total for Project 410146-1		**$5,687,636**	**$5,926,893**	**$8,238,143**	**$8,244,025**	**$8,493,350**

410146-2 - COLLIER COUNTY/BONITA SPRINGS UZA/FTA SECTION 5307 OPERATING ASSIST
Type of Work: OPERATING FOR FIXED ROUTE

Phase	Fund Code	2026	2027	2028	2029	2030
Operations	FTA	$500,000	$75,490	$1,183,080	$1,316,836	$3,578,470
	LF	$500,000	$75,490	$1,183,080	$1,316,836	$3,578,470
Total for Project 410146-2		**$1,000,000**	**$150,980**	**$2,366,160**	**$2,633,672**	**$7,156,940**

434030-1 - COLLIER CO./BONITA SPRINGS UZA FTA SECTION 5339 CAPITAL ASSISTANCE
Type of Work: CAPITAL FOR FIXED ROUTE

Phase	Fund Code	2026	2027	2028	2029	2030
Capital	FTA	$616,294	$592,009	$708,668	$728,797	$955,234
	LF	$154,073	$148,002	$177,167	$182,199	$238,809
Total for Project 434030-1		**$770,367**	**$740,011**	**$885,835**	**$910,996**	**$1,194,043**

COLLIER COUNTY **Modal Development: Transit**

452749-1 - COLLIER AREA TRANSIT OPERATING ASSISTANCE CORRIDOR US 41
Type of Work: URBAN CORRIDOR IMPROVEMENTS

Phase	Fund Code	2026	2027	2028	2029	2030
Operations	DDR	$78,845				$491,530
	DPTO	$412,635	$491,530	$491,530	$491,530	
	LF		$491,530	$491,530	$491,530	$491,530
Total for Project 452749-1		**$491,480**	**$983,060**	**$983,060**	**$983,060**	**$983,060**

COLLIER COUNTY **Transportation Planning**

439314-5 - COLLIER COUNTY MPO FY 2024/2025-2025/2026 UPWP
Type of Work: TRANSPORTATION PLANNING

Phase	Fund Code	2026	2027	2028	2029	2030
Planning	PL	$828,086				
	SU	$350,000				
Total for Project 439314-5		**$1,178,086**				

439314-6 - COLLIER COUNTY MPO FY 2026/2027-2027/2028 UPWP
Type of Work: TRANSPORTATION PLANNING

Phase	Fund Code	2026	2027	2028	2029	2030
Planning	PL		$828,086	$828,086		
	SU		$350,000	$350,000		
Total for Project 439314-6			**$1,178,086**	**$1,178,086**		

439314-7 - COLLIER COUNTY MPO FY 2028/2029-2029/2030 UPWP
Type of Work: TRANSPORTATION PLANNING

Phase	Fund Code	2026	2027	2028	2029	2030
Planning	PL				$828,088	$828,088
	SU				$450,000	$450,000
Total for Project 439314-7					**$1,278,088**	**$1,278,088**

Fund Codes

Federal	**ACBZ - ADVANCE CONSTRUCTION (BRTZ)**	**ACNR - AC NAT HWY PERFORM RESURFACING**	**CARB - CARBON REDUCTION GRANT PGM**
	CARU - CARB FOR URB. AREA > THAN 200K	**CM - CONGESTION MITIGATION - AQ**	**DU - STATE PRIMARY/FEDERAL REIMB**
	FAA - FEDERAL AVIATION ADMIN	**FTA - FEDERAL TRANSIT ADMINISTRATION**	**GFBR - GEN FUND BRIDGE REPAIR/REPLACE**
	PL - METRO PLAN (85% FA; 15% OTHER)	**SA - STP, ANY AREA**	**SR2T - SAFE ROUTES - TRANSFER**
	SU - STP, URBAN AREAS > 200K	**TALT - TRANSPORTATION ALTS- ANY AREA**	**TALU - TRANSPORTATION ALTS- >200K**
Local	**LF - LOCAL FUNDS**		
State	**ART - ARTERIAL HIGHWAYS PROGRAMS**	**CIGP - COUNTY INCENTIVE GRANT PROGRAM**	**D - UNRESTRICTED STATE PRIMARY**
	DDR - DISTRICT DEDICATED REVENUE	**DIH - STATE IN-HOUSE PRODUCT SUPPORT**	**DITS - STATEWIDE ITS - STATE 100%.**
	DPTO - STATE - PTO	**DS - STATE PRIMARY HIGHWAYS & PTO**	**FC5 - OPEN GRADE FRICTION COURSE FC5**
	FINC - FINANCING CORP	**MFF - MOVING FLORIDA FOWARD**	**SCRC - SCOP FOR RURAL COMMUNITIES**
	TRIP - TRANS REGIONAL INCENTIVE PROGM	**TRWR - 2015 SB2514A-TRAN REG INCT PRG**	

EXECUTIVE SUMMARY
COMMITTEE ACTION
ITEM 7B

Bicycle and Pedestrian Master Plan (BPMP) – Review and Comment on First Draft – Continued from February Meeting

---

OBJECTIVE: For the committee to continue its review and comment on the draft BPMP.

CONSIDERATIONS: The project consultant, Capital Consulting Solutions, has prepared a presentation highlighting potential changes to the draft BPMP based on comments received from the Bicycle and Pedestrian, Citizens, and Technical Advisory Committees (BPAC, CAC, TAC) thus far (**Attachment 1**). BPAC is conducting its second review on 3/18/25, and staff will report on actions taken.

Next Steps:

- Review of draft by MPO Board on April 11
- Second public meeting
- Second round of virtual tribal meetings with Miccosukee Tribe on Wednesday, April 2 and Seminole Tribe of Florida on Tuesday, April 8
- Review of final draft by TAC/CAC on May 19, BPAC on May 20, and MPO Board on June 13

STAFF RECOMMENDATION: Provided for the committee to continue its review and comment on the draft plan submitted last month.

Prepared By: Sean Kingston, AICP, PMP, Principal Planner

ATTACHMENTS:

1) Capital Consulting Solutions Presentation

7B Attachment 1
TAC & CAC 3/24/25

COLLIER MPO
BICYCLE-PEDESTRIAN MASTER PLAN
2025 DRAFT
PROPOSED REVISIONS

CAPITAL

Collier MPO
BICYCLE-PEDESTRIAN
MASTER PLAN 2025

February 18TH BPAC Recap

Requested Revisions and Corrections

Everglades City
•Correct inaccurate/skewed population data
•Update road and park facility names

Evaluation Criteria Matrix
•Reallocate criteria weight to emphasize safety and education
•Reevaluate cost criteria metrics for clarity

DEI References
•Proposed removal of all DEI language (e.g., EJ or Environmental Justice)
•Implement changes in the scoring criteria and throughout the draft document

General Comments
•Define shared-use path
•Include pictures and infographics

Collier MPO
BICYCLE-PEDESTRIAN
MASTER PLAN 2025

Revised Naming and Definitions

Existing Draft

Priority Projects for Everglades City:

- **Everglades City Bike Lanes and Shared Paths:**
  - Expanding existing bike lanes along key corridors such as East 1st Street and Everglades Boulevard to provide safer routes for cyclists and pedestrians.
  - Development of shared-use paths to connect residential areas to the downtown district, local parks, and other key amenities.
- **Enhanced Safety Measures:**
  - Implementation of traffic calming measures, including improved crosswalks and pedestrian signals, particularly on high-traffic roads like State Road 29, to ensure the safety of vulnerable road users.
- **Connecting to Regional Networks:**
  - Developing connections to regional bicycle and pedestrian facilities, such as linking local routes to the SUN Trail Network, to allow seamless access for cyclists traveling through the area.
- **Everglades City Park Pathway:**
  - A proposed multi-use pathway around Everglades City Park, promoting walking and cycling while providing a safe and scenic route for local trips and recreational activities.

Proposed Changes

Priority Projects for Everglades City:

- **Everglades City Bike Lanes and Shared Paths:**
  - Expanding existing bike lanes along key corridors such as **Broadway Avenue** and **Copeland Avenue** to provide safer routes for cyclists and pedestrians.
  - Development of shared-use paths to connect residential areas to the downtown district, local parks, and other key amenities.
- **Enhanced Safety Measures:**
  - Implementation of traffic calming measures, including improved crosswalks and pedestrian signals, particularly on high-traffic roads like State Road 29, to ensure the safety of vulnerable road users.
- **Connecting to Regional Networks:**
  - Developing connections to regional bicycle and pedestrian facilities, such as linking local routes to the SUN Trail Network, to allow seamless access for cyclists traveling through the area.
- **Everglades City Park Pathway:**
  - A proposed multi-use pathway around **Mcleod Park**, promoting walking and cycling while providing a safe and scenic route for local trips and recreational activities.

Revised Naming and Definitions

Shared Use Paths (for example)

- **Current Definition**

  "Shared use paths, including side paths, are paved pathways for cyclists and pedestrians, typically 8 to 14 feet wide. They can run independently of roadways or parallel to them, separated by buffers like landscaping, curbs, or fencing for safety. Wider than sidewalks, they accommodate higher-speed users like cyclists while supporting pedestrians…."

- **Proposed Changes**

  "Shared use paths, including side paths, are paved pathways for cyclists and pedestrians, typically 8 to 14 feet wide, **under current standards**. They can be independent or parallel to roadways, separated by buffers like landscaping, curbs, or fencing for safety. Wider than sidewalks, they accommodate cyclists and pedestrians. **These paths meet modern safety and accessibility standards for all users. Paths that may not meet current width standards but share other features, such as separation from traffic and spaces for both cyclists and pedestrians, will still be recognized as shared use paths.**"

Collier MPO
BICYCLE-PEDESTRIAN
MASTER PLAN 2025

Scoring Matrix (Local Projects)

Reallocated Weight Percentages & Removal of DEI Reference

Criteria	Weight (%)	Description
Safety	30	Evaluates the project's potential to enhance safety for all users. This includes the analysis of high-risk areas using crash data and fatality statistics, the implementation of Safe Routes to Schools, the incorporation of targeted safety improvements, the adoption of a Safe System Approach, and the inclusion of public education initiatives aimed at promoting safe behaviors.
Multimodal and Local Connections	25	Assesses the project's integration with other modes of transportation (e.g., transit, biking, walking) and its ability to enhance regional connectivity. Projects that create seamless links between different transportation modes and improve regional mobility will score higher.
Cost	15	Evaluates the financial feasibility of the project, including both initial construction costs, long-term maintenance expenses, and the cost per capita. Projects that demonstrate cost-effectiveness, efficient use of available funds, and provide a reasonable cost per person impacted will score higher.
Equity	~~15~~	~~Assesses the extent to which the project provides equal access to nonmotorized facilities for all users, with a particular focus on underserved and marginalized communities. Projects that eliminate barriers, enhance ADA accessibility, and promote inclusivity for individuals of all abilities will receive higher scores.~~
Public Involvement and Support	5	Evaluates the level of community engagement and support for the project. Projects with strong public involvement, transparent processes, and demonstrated community backing will receive higher scores.
Micromobility	5	Evaluates the project's support for micromobility options such as e-scooters, e-bikes, and other small, lightweight transportation devices. Projects that integrate infrastructure and policies to promote micromobility will score higher.
Economic Development	5	Assesses the project's potential to stimulate economic growth, revitalize communities, and attract tourism. Projects that demonstrate clear economic benefits and support local revitalization efforts will score higher.

Proposed Options:

1. Reassign 5 points to Safety and introduce a new Education category worth 10 points.
2. Reassign 5 points to Safety, 5 points to Local Connections, and add an Education category worth 5 points

Collier MPO BICYCLE-PEDESTRIAN MASTER PLAN 2025

Scoring Matrix (Local Projects)

Proposed Education Criterion Description

Equity → **Education**

Education – 10 Points

"This criterion evaluates the efforts to educate and engage the community regarding bicycle and pedestrian safety, benefits, and infrastructure. Projects that incorporate educational programs, workshops, outreach efforts, or materials promoting safe and sustainable transportation practices will be considered. Consideration will also be given to initiatives that partner with local schools, organizations, and other stakeholders to raise awareness and foster a culture of safety."

Collier MPO
BICYCLE-PEDESTRIAN
MASTER PLAN 2025

Scoring Matrix (Regional Projects)

Reallocated Weight Percentages & Removal of DEI Reference

Criteria	Weight (%)	Description
Safety	30	Evaluates the project's potential to enhance trail user safety by reducing conflicts with vehicles, addressing high-risk areas for bicycle and pedestrian injuries, and correcting existing safety deficiencies along the trail.
Cost	25	Assesses the cost-effectiveness of the project by considering the expenses for the PD&E (Project Development and Environment) Study, planning, initial construction, and long-term maintenance. Additionally, the evaluation includes the cost in relation to the population benefiting from the proposed improvement, particularly those residing within approximately 5 miles of the trail corridor.
Connectivity	20	Evaluates how effectively the project links to existing trails, transportation networks, or key destinations, and whether it creates a new connection between areas or populations that were previously disconnected.
~~**Equity**~~	~~15~~	~~Evaluates how the project benefits underserved communities along the SUN Trail Network, including low-income, minority, and transit-dependent populations. Projects that enhance access to safe and affordable transportation options or connect these communities to essential services—such as schools, jobs, and healthcare—will be prioritized and scored higher.~~
Economic Development	5	Analyzes the potential for the project to promote local economic growth, including tourism and business opportunities.
Project Phase	5	Prioritize projects that are construction-ready, with all necessary documents and plans approved and slated for construction. Projects in advanced phases will be ranked higher, especially when funding is limited, compared to projects that are still in the planning or pre-construction stages.

Proposed Options:

1. Introduce a Feasibility criterion worth 10 points and increase the Safety score by 5 points.
2. Reallocate the 15 points across the existing criteria without adding a new one.

Collier MPO
BICYCLE-PEDESTRIAN
MASTER PLAN 2025

Scoring Matrix (Regional Projects)

Proposed Feasibility Criterion Description

Equity → **Feasibility**

Feasibility – 10 Points

"This criterion evaluates the practicality of the regional trail project by looking at technical, financial, and logistical factors. It considers whether the project can be built given the terrain and existing infrastructure, if the estimated budget is realistic, and whether it can be completed within an achievable timeline. It also assesses the likelihood of obtaining necessary permits and approvals from local agencies and stakeholders."

Master Plan Goals

Removal of DEI Reference

Safety	Promote policies and infrastructure improvements that enhance safety for cyclists, pedestrians, and micromobility users.
Connectivity	Develop a seamless network that connects key points of interest, ensuring accessibility and ease of use for all modes of transportation.
Economy	Develop bicycle-pedestrian facilities to support local businesses, attract tourists, and provide affordable transportation options, contributing to economic growth and community vitality.
~~**Equity**~~	~~Ensure that all neighborhoods, particularly underserved communities, have access to safe and high-quality bicycle and pedestrian facilities.~~
~~**Environment**~~	~~Reduce emissions and congestion by promoting the use of bicycles, walking, and micromobility, while minimizing the environmental cost of expanding roads and reducing dependency on nonrenewable energy.~~
Health	Design pathways that encourage active transportation and support public health initiatives.
Interactive Map	Create and maintain a continuously updated, interactive map that is accessible for cyclists and pedestrians to download and share, serving as a valuable resource for navigation and planning.

Proposed Options:

1. Replace **Equity** with **Education**
2. Replace **Environment** with **Efficiency**

Collier MPO
BICYCLE-PEDESTRIAN
MASTER PLAN 2025

Master Plan Goals

<u>Proposed Goals with the Removal of DEI Reference</u>

- **Education**

Promote safety, awareness, and responsible use of bicycle and pedestrian facilities through educational programs, outreach efforts, and community engagement, empowering users with the knowledge to navigate the network safely and effectively.

- **Efficiency**

Ensure the safety, accessibility, and longevity of existing bike and pedestrian facilities through regular maintenance and timely upgrades, keeping them functional and safe for users while extending their service life.

Collier MPO
BICYCLE-PEDESTRIAN
MASTER PLAN 2025

Next Steps

- Continue to make revisions based on comments received including:
    - Additional definitions related to design guidelines and inventory
    - Recommended additions to proposed connections by BPAC and CAC
    - Addressing County comments and any new comments received

- Scoring Demonstration
- TAC second review 3/24/25
- MPO Board presentation 4/11/25
- Virtual Public Meeting (April/May)

Collier MPO
BICYCLE-PEDESTRIAN
MASTER PLAN 2025

EXECUTIVE SUMMARY
REPORTS & PRESENTATIONS
ITEM 8A

Draft Transit Zero Emission Fleet Transition Plan by Benesch

OBJECTIVE: For the Committee to receive and be briefed on the draft Zero Emission Fleet Transition Plan for transit prepared by Alfred Benesch & Company (Benesch).

CONSIDERATION: In collaboration with Collier County Public Transit & Neighborhood Enhancement Division, Collier MPO contracted with Benesch to conduct a Zero Emission Fleet Transition Plan study for Collier Area Transit (CAT). The Plan is required for potential future federal grant application requests for low or no emission public transportation vehicles/ infrastructure under 49 U.S.C. § 5339(b) and 49 U.S.C. § 5339(c).

The study evaluates the prospect of deploying zero and low emission vehicles in CAT's fleet, including feasibility, the current state of alternative fuel technology and reliability, infrastructure needs, high-level cost estimates, and funding source opportunities.

The study recommendations include a phased approach to incorporating hybrid and battery electric vehicles into CAT's fleet.

Staff from Benesch will provide a presentation (**Attachment 1**) on the draft report (**Attachments 2 and 3**) and answer any questions the Committee may have.

Next steps include presentation to the MPO Board and approval by the BCC.

STAFF RECOMMENDATION: That the Committee review the draft Zero Emission Fleet Transition Plan for transit and have the opportunity to ask questions about it and provide feedback.

Prepared by: Dusty Hansen, MPO Senior Planner

ATTACHMENTS:

1. Presentation by Benesch on the Zero Emission Fleet Transition Plan
2. Draft Zero Emission Fleet Transition Plan for transit by Benesch
3. Appendix to Draft Zero Emission Fleet Transition Plan for transit

8A Attachment 1
TAC/CAC 3/24/25

Collier Area Transit Zero Emissions Transition Plan

Technical Advisory / Citizen Advisory Committees
March 24, 2025

1

Presentation Overview

- Current System Summary
- State of Zero Emission Vehicles
- Peer Agency Interviews
- Feasibility Analysis
- Implementation Plan

2

2

Collier Area Transit (CAT)

Total Revenue Vehicles	Population	Service Types
64	**385K**	**FR/DR**
Source: National Transit Database, 2023	*Source: National Transit Database, 2023*	*Source: National Transit Database, 2023*

Total Unlinked Passenger Trips	Number of AFVs	Fixed Routes
845K	**1**	**16**
Source: National Transit Database, 2023	*Source: CAT*	*Source: ridecat.com*

COLLIER Metropolitan Planning Organization

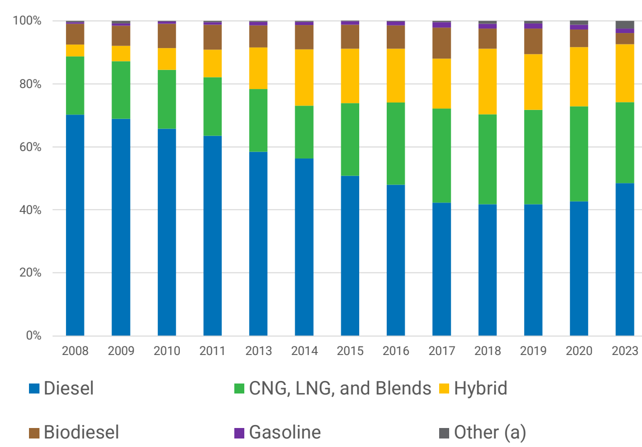
rideCAT COLLIER AREA TRANSIT

benesch 3

3

State of Zero Emissions Vehicles

- Battery Electric
- Biodiesel
- Compressed Natural Gas
- Hybrid Diesel Electric
- Hydrogen Fuel Cell



COLLIER Metropolitan Planning Organization

rideCAT COLLIER AREA TRANSIT

benesch 4

4

Peer Agency Interviews

- Agency selection coordinated with Transit Development Plan
- Experience with alternative fuels
  - Pinellas Suncoast Transit Authority (PSTA)
  - LeeTran
  - Escambia County Area Transit (ECAT)
  - Jacksonville Transit Authority (JTA)
- National Best Practice Case Studies
  - RTC Washoe: Reno, Sparks, and Washoe County, Nevada
  - Albuquerque Rapid Transit: Albuquerque, New Mexico
  - Lextran: Lexington-Fayette region, Kentucky

COLLIER Metropolitan Planning Organization

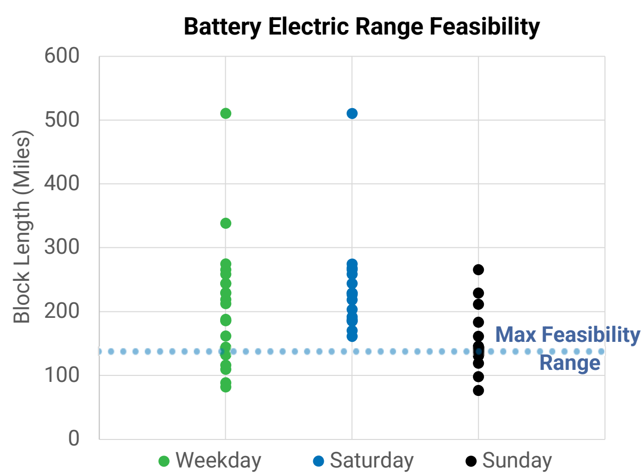
rideCAT COLLIER AREA TRANSIT

benesch 5

5

Feasibility Analysis

- Vehicle Range
  - Battery Electric
    - Nominal and Strenuous circumstances
    - Battery Degradation
    - Battery Technology Improvement
    - Vehicle Length (Battery Capacity)
  - Other Alternative Fuels
    - Service Range
- Fuel or Charge Reserve
- Qualitative Operational Considerations
  - Climate
  - Terrain
  - Route conditions



COLLIER Metropolitan Planning Organization

rideCAT COLLIER AREA TRANSIT

benesch 6

6

Feasibility Analysis

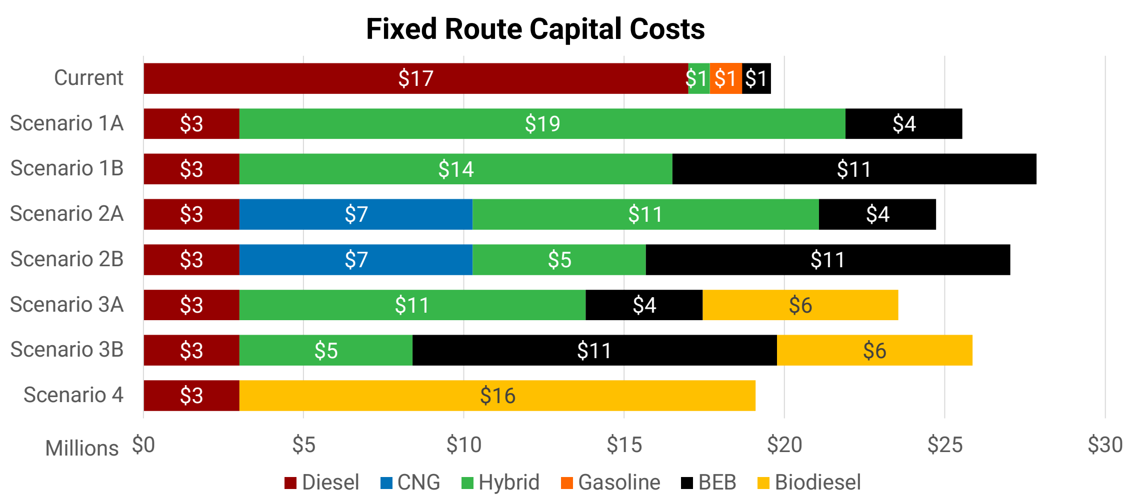
- Four scenarios for evaluating fixed-route performance and cost
  - **Scenario 1A and 1B:** Least Harmful Emissions
    - Diesel, Battery Electric, Hybrid
  - **Scenario 2A and 2B:** Optimized Vehicle Function
    - Diesel, Battery Electric, Hybrid, Compressed Natural Gas
  - **Scenario 3A and 3B:** Balanced Approach
    - Diesel, Battery Electric, Hybrid, Biodiesel
  - **Scenario 4:** Lowest Capital Cost
    - Diesel, Biodiesel

*Scenarios 1 through 3 include considerations for the addition of in-route charging. These scenario alternatives are noted with a B.

benesch 7

7

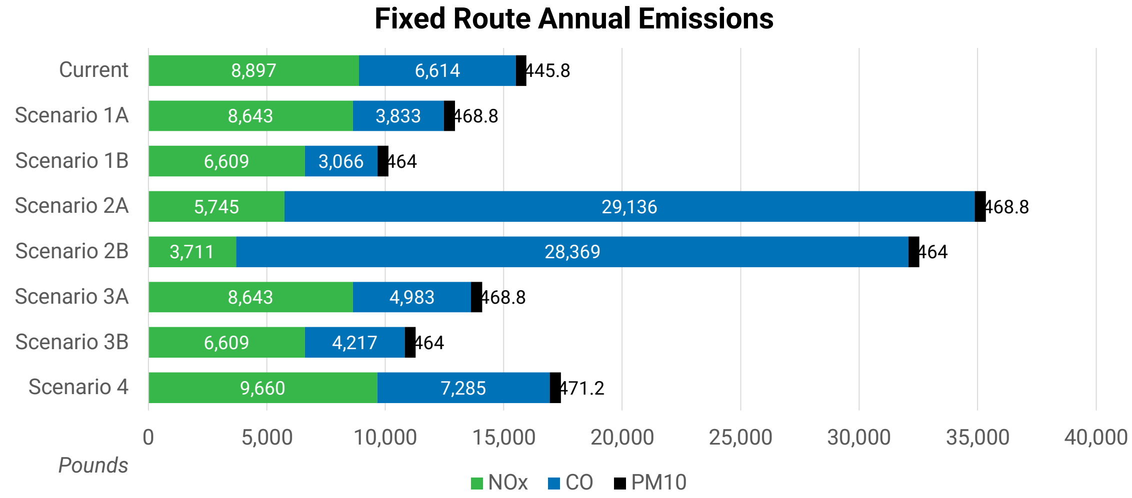
Feasibility Analysis



benesch 8

8

Feasibility Scenario



benesch 9

9

Feasibility Analysis

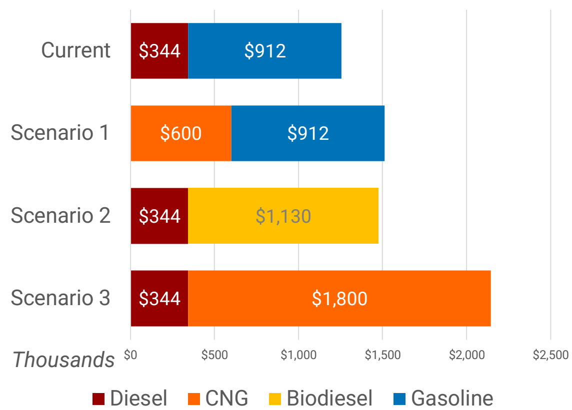
- Three scenarios for Demand Response (Paratransit) performance and cost
  - **Scenario 1:** Balanced Emissions and Costs
    - 75% Gasoline, 25% Compressed Natural Gas
  - **Scenario 2:** Lowest Capital Cost
    - 25% Diesel, 75% Biodiesel
  - **Scenario 3:** Strong CNG
    - 25% Biodiesel, 75% Compressed Natural Gas
- Three scenarios for Support Vehicle performance and cost
  - **Scenario 1:** Lowest Emissions
    - 100% Electric Vehicles
  - **Scenario 2:** Lowest Capital Cost
    - 33% Gasoline, 67% Electric Vehicles
  - **Scenario 3:** Strong CNG
    - 67% Gasoline, 33% Electric Vehicles

benesch 10

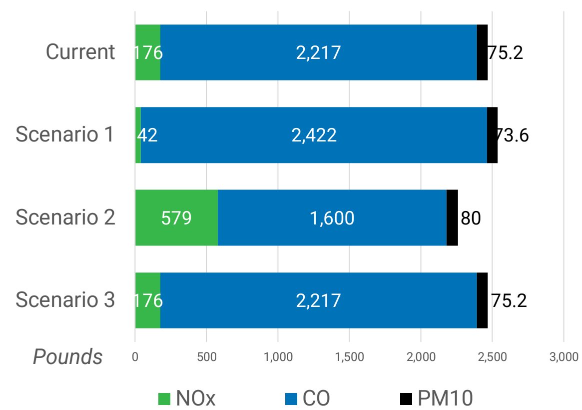
10

Feasibility Analysis

Demand Response Capital Costs



Demand Response Annual Emissions

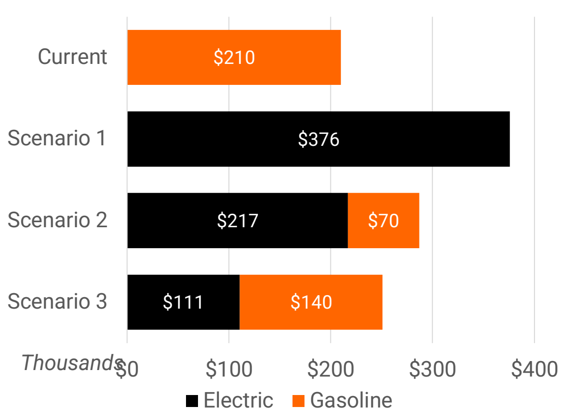


benesch 11

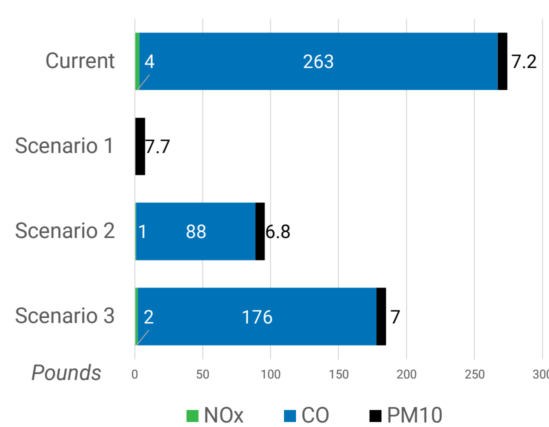
11

Feasibility Analysis

Support Vehicle Capital Costs



Support Vehicle Annual Emissions



benesch 12

12

Implementation Plan

- Phased implementation with pilot application.
- **Fixed Route –** One electric bus currently being built. Delivery expected later this year.
- **Demand Response –** CAT has not planned for a transition of its paratransit/demand response vehicles.
- **Support Vehicles -** CAT is planning to replace two of its support vans to electric SUV's.

COLLIER Metropolitan Planning Organization

rideCAT COLLIER AREA TRANSIT

benesch 13

13

Implementation Plan Phasing

Phase 1: BEB Pilot (2025 – 2029)

Purchase and implement one battery electric bus

Purchase and implement overnight chargers for two battery electric buses

Evaluate the feasibility of operating and maintaining the battery electric bus

Address and resolve any issues with the operation and maintenance of the battery electric bus

Phase 2: Second BEB (2029 – 2032)

Purchase and implement an additional battery electric bus as seen fit

As part of the 2031 TDP major update, revisit the ZEV Transition Plan

Phase 3: Hybrid Pilot (2032 – 2034)

Purchase and implement six hybrid electric buses

Evaluate the feasibility of operating and maintaining the hybrid electric buses

Address and resolve any issues with the operation and maintenance of the hybrid electric buses

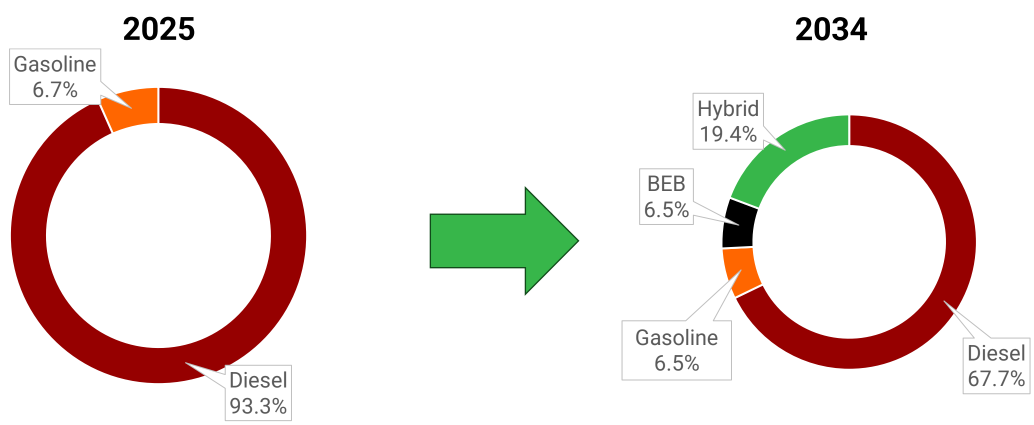
COLLIER Metropolitan Planning Organization

rideCAT COLLIER AREA TRANSIT

benesch 14

14

Implementation Plan – Fixed Route Fleet Mix



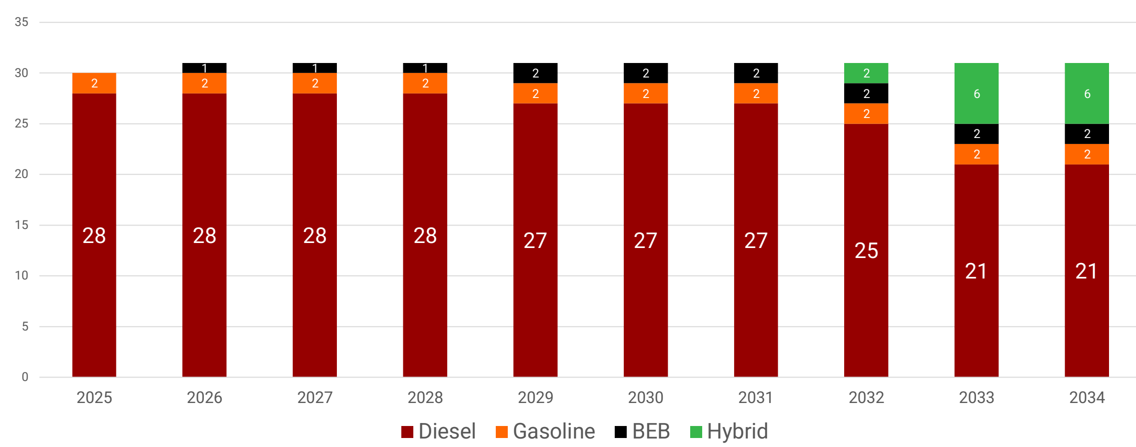
30 vehicles in FR Fleet

31 vehicles in FR Fleet

15

15

Implementation Plan – Vehicle Replacement



16

16

Implementation Plan – Operating Costs

Service Type	Fuel Type	Cost per Mile
Fixed Route	CNG	$3.18
	Battery Electric	$3.26
	Biodiesel	$3.49
	Hybrid	$2.79
	Diesel	$3.96
	Gasoline	$3.96
Demand Response	CNG	$3.46
	Battery Electric	$2.86
	Biodiesel	$3.91
	Diesel	$3.91
	Gasoline	$3.91
Equipment/Support Van/SUV	Battery Electric	$0.10
	Gasoline	$0.33
Equipment/Support Pickup Truck	Battery Electric	$0.11
	Gasoline	$0.39

COLLIER Metropolitan Planning Organization

rideCAT COLLIER AREA TRANSIT

benesch 17

17

Implementation Plan – Capital Costs

Service Type	Fuel Type	Vehicle Cost
Fixed Route	CNG	$704,000
	Battery Electric	$1,058,000
	Biodiesel	$580,000
	Hybrid	$783,000
	Diesel	$580,000
	Gasoline	$580,000
Demand Response	CNG	$316,000
	Battery Electric	$282,000
	Biodiesel	$181,000
	Diesel	$181,000
	Gasoline	$160,000
Equip. / Support Vehicles	Battery Electric	$74,000
	Gasoline	$45,000

Service Type	Infrastructure Type	Per Vehicle Cost	Flat Cost
Fixed Route	CNG Station and Dispensers (Medium)	$66,660	
	Overnight Chargers (and installation)	$11,900	
	On-Route Chargers (and installation)		$163,300
	Biodiesel Tank and Dispensers		$97,935
Demand Response	CNG Station and Dispensers (Small)	$27,700	
	Overnight Chargers (and installation)	$11,900	

COLLIER Metropolitan Planning Organization

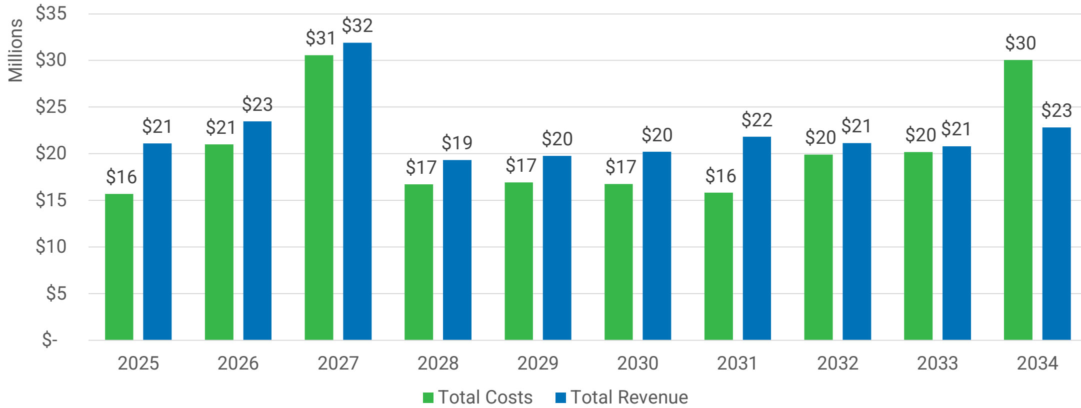
rideCAT COLLIER AREA TRANSIT

benesch 18

18

Implementation Plan

Financial Plan: Cost Revenue Detail



COLLIER Metropolitan Planning Organization

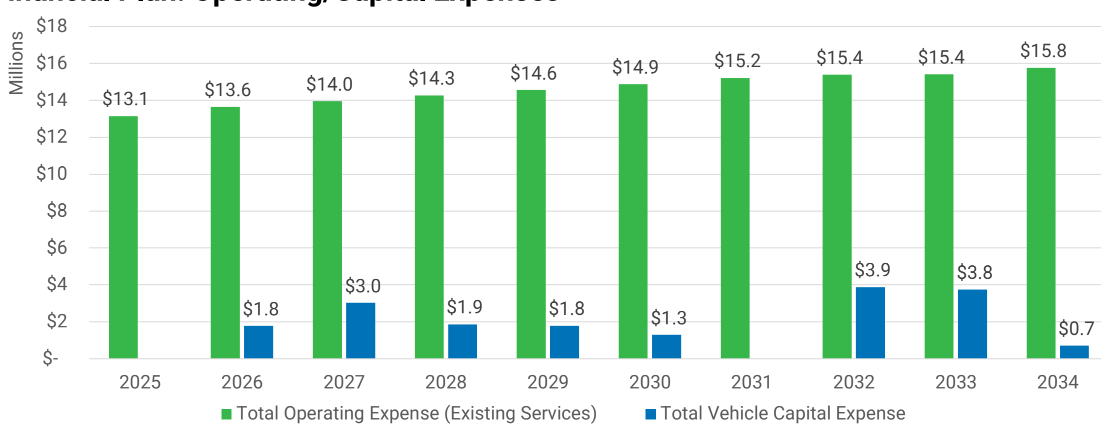
rideCAT COLLIER AREA TRANSIT

benesch 19

19

Implementation Plan

Financial Plan: Operating/Capital Expenses



COLLIER Metropolitan Planning Organization

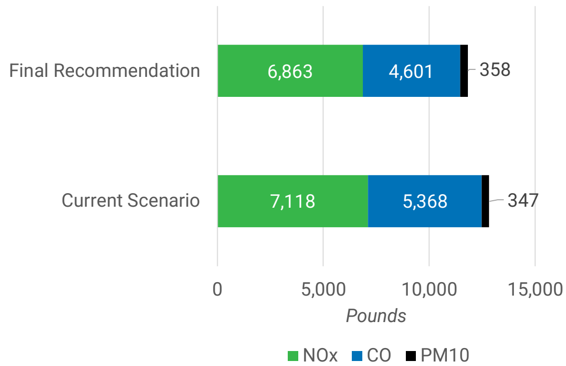
rideCAT COLLIER AREA TRANSIT

benesch 20

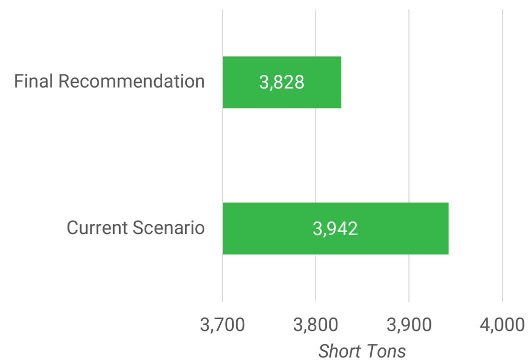
20

Implementation Plan

Total FR Fleet Emissions



Total FR Lifecycle Greenhouse Gas Savings



COLLIER Metropolitan Planning Organization

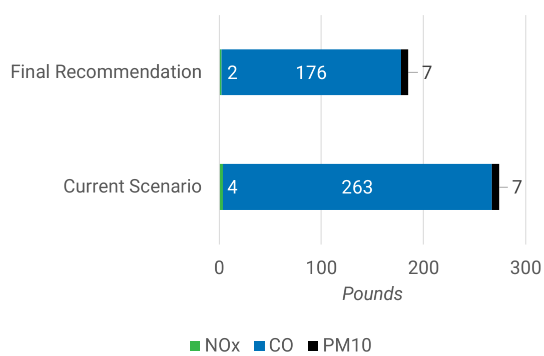
ride CAT COLLIER AREA TRANSIT

benesch 21

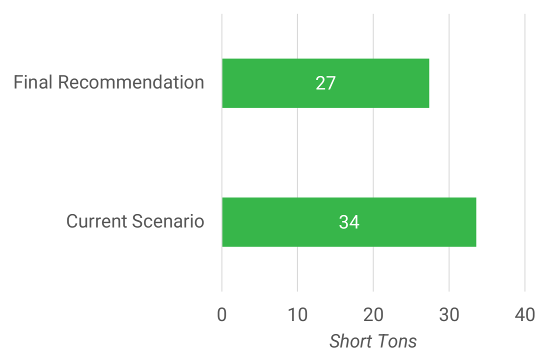
21

Implementation Plan

Total Support Fleet Emissions



Total Support Vehicle Lifecycle Greenhouse Gas Savings



COLLIER Metropolitan Planning Organization

ride CAT COLLIER AREA TRANSIT

benesch 22

22

Implementation Plan – Assessment and Training

- Facility Assessment
  - Redesign on CAT Operations Center Maintenance Building.
  - Addition of two spaces dedicated to electric vehicle charging.
- Workforce Assessment
  - Current approach aims to train existing diesel mechanics in the workforce in alternative fuels.
  - This approach gives time to understand agency needs without displacing any of its current workers.

COLLIER Metropolitan Planning Organization

rideCAT COLLIER AREA TRANSIT

benesch 23

23

Question / Comments

Based on Committee discussion, provide questions or comments regarding the draft Zero Emission Vehicle Transition Plan

COLLIER Metropolitan Planning Organization

rideCAT COLLIER AREA TRANSIT

benesch 23

24

8A Attachment 2
TAC/CAC 3/24/25

MPO COLLIER Metropolitan Planning Organization

rideCAT COLLIER AREA TRANSIT

benesch

Zero Emission Vehicle Transition Plan

DRAFT for Review 3/7/2025

TABLE OF CONTENTS

LIST OF MAPS

LIST OF TABLES

LIST OF FIGURES

1 INTRODUCTION

The transit industry is shifting from traditional diesel vehicles to various alternative fuel technologies due to a combination of increasing environmental awareness, availability and advancement of alternative fuel technologies, fleet diversification and flexibility, efficiency, and federal incentives (i.e., grant funding). Collier Area Transit, operating as CAT, is exploring options related to incorporating alternative fuel vehicles in its fleet. CAT provides fixed route services over 16 routes and paratransit demand response services through CATConnect for eligible individuals. CAT manages a fleet of 30 fixed route buses, 33 paratransit vehicles, and 6 support vehicles, a total of 69 vehicles.

In 2021, the Federal Transit Administration (FTA) announced that no-emission projects seeking funding under the Grants for Buses and Bus Facilities Competitive Program (49 U.S.C. § 5339(b)) and the Low- or No-Emission Program (49 U.S.C. § 5339(c)) must have a Zero-Emission Transition Plan (ZETP). This report substantially meets this requirement in support of future FTA grant funding requests made by Collier County.

A ZETP must meet the following six requirements:

- Element 1 | Demonstrate a long-term fleet management plan with a strategy for how the applicant intends to use the current request for resources and future acquisitions.
- Element 2 | Address the availability of current and future resources to meet costs for the transition and implementation.
- Element 3 | Consider policy and legislation impacting relevant technologies.
- Element 4 | Include an evaluation of existing and future facilities and their relationship to the technology transition.
- Element 5 | Describe the partnership of the applicant with the utility or alternative fuel provider.
- Element 6 | Examine the impact of the transition on the applicant's current workforce by identifying skill gaps, training needs, and retraining needs of the existing workers of the applicant to operate and maintain zero-emission vehicles and related infrastructure and avoid displacement of the existing workforce.

The purpose of this report is to develop a ZETP based on a selection of alternative fuel technologies identified in the following chapters and to meet the requirements of the FTA for competitive grants through the Low- or No-Emission Grant program. While the study evaluates the transition of the fleet, it is imperative to consider the value of diversifying the fleet. The community is dependent on public transit to support transportation needs during natural disasters, for this reason CAT has determined that a balanced mix of technologies will be the goal of its transition plan, the details of which are documented in this ZETP. This balanced approach takes the transition to low-emission or zero-emission vehicles with thoughtfulness, remaining mindful of local climate challenges. The agency finds it appropriate that a portion of its fleet remains composed of diesel vehicles, as these vehicles would be critical to support mobility during power outages, especially after natural disasters such as hurricanes, which are common in the region.

Development of the ZETP included a review of current transit fleet and analysis of recommended scenarios for determining the feasibility of a fleet transition. To ensure the decisions made during this process consider multiple aspects of the implementation, a Steering Committee was formed from representatives of multiple County agencies and departments. The feedback, guidance and input from the Steering Committee aided in developing the implementation plan for including lower emission fuel considerations for CAT. Brief summaries of the meetings held with the Steering Committee are included as **Appendix A**.

The remainder of this report is divided into seven sections intended to meet the six ZETP elements listed previously:

Section 2: State of Zero Emission Vehicles: A review of recent trends and adoption of fuel sources by transit agencies nationwide was conducted. A comparison and evaluation of multiple fuel sources along an Assessment of potential environmental and fiscal impacts is also included.

Section 3: Peer Experience: Interviews were held with three transit agencies in Florida to better understand their experiences with alternative fuel sources and potential takeaways that can guide CAT's Transition Plan. A review of national case study examples is also included to provide a broader context of transit agency experiences.

Section 4: Local, Regional, and State Initiatives: A summary of key national policy guidance for funding and implementation of low/no emission fuels is included along with key takeaways from Florida DOT studies and action plans for addressing vehicle emissions. Finally, guiding principles and policy guidance included in local planning documents are included.

Section 5 Utility Provider Coordination: Contacts were made with Florida Power and Light and Lee County Electric Cooperative were made to identify potential opportunities for fleet conversion to electric was conducted. A brief summary of potential programs and future coordination actions associated with the Transition Plan are brought forward.

Section 6 Alternative Feasibility Analysis: A review of the current vehicle fleet, including fixed-route, demand response and support vehicles was conducted. Several scenarios were developed and summarized to identify the potential capital and operating costs, and emissions profiles for each scenario was prepared.

Section 7 Financial Analysis: High-level capital cost estimates for the recommended fleet conversion, recommended charging infrastructure, and maintenance/storage facility modifications were completed. In addition, this section provides a review of state and federal funding sources, including FTA's Low or No Emission Grants and the Environmental Protection Agency's (EPA) Community Change Grant Program. Impacts to certain funding sources remain uncertain based on recent federal actions. Availability of funding opportunities should be continually monitored by Collier County.

Section 8: Implementation Plan: A 10-year capital plan was developed to support the recommended strategy for transitioning to a lower emission fleet. The implementation plan balances operational feasibility, financial sustainability, and environmental impact. This section outlines the key steps, timelines, and strategies for fleet conversion, infrastructure development, workforce training, and future decision points for monitoring and adjusting the transition plan based on changes in the state of practice and alternative fuel sources.

2 STATE OF ZERO EMISSION VEHICLES

The State of Zero Emission Vehicles (ZEVs) chapter explores various technology options to determine which technology or technologies are most appropriate for the agency to consider moving forward. This chapter documents the benefits and drawbacks of popular alternative fuel technologies and how they compare to diesel vehicles.

2.1 Recent Trends in Alternative Fuel Technologies

There are two broad categories of alternative fuel technologies: low-emission and zero-emission. Low-emission technologies refer to any alternative technology or alternative fuel that emit lower amounts of harmful tailpipe emissions than diesel. Zero-emission (also known as no-emission) technologies do not rely on fossil fuels for operation and have zero (or nearly zero) harmful tailpipe emissions. Generally, these designations only account for the emissions produced during the usable lifecycle of vehicles and not the emissions produced during the production, disposal of the vehicles, or the production of the fuel source. **Table 2-1** lists the selection of alternative fuel technologies discussed in this report by their respective emission category.

TABLE 2-1 CATEGORIZATION OF MAJOR ALTERNATIVE FUEL TECHNOLOGIES

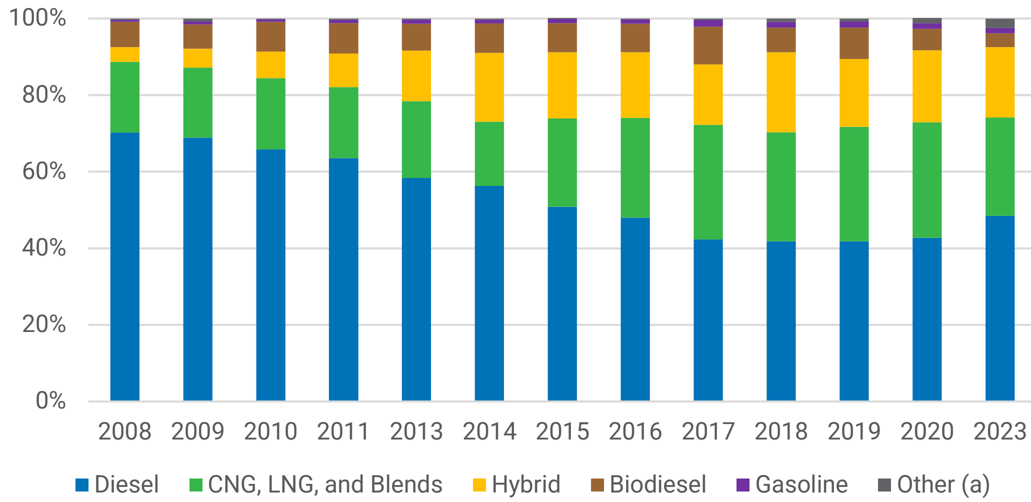
Low-Emission Technologies	Zero-Emission Technologies
• Biodiesel • Compressed natural gas (CNG) • Diesel and battery electric (hybrid) • Gasoline • Liquified natural gas (LNG) • Propane	• Battery electric • Hydrogen fuel cell electric (FCE)

Note: While the term "hybrid technology" can refer to a myriad of combinations of fuels, for the purposes of this report, hybrid refers solely to a combination of diesel and battery electric technologies.

There are multiple fuel alternatives to diesel, and each has evolved at a different pace. The American Public Transportation Association (APTA) maintains a database of more than 450 transit agencies across the United States. The database has helped track various trends in public transportation including fleet fuel mix. **Figure 2-1** shows the changes in fuel mix for buses (excluding commuter bus) between 2008 and 2023. It should be noted that transit agencies voluntarily provide data to APTA and may not update it every year; therefore, data is only as accurate as the agencies reporting.

On average, diesel buses dropped by 1.5 percent annually between 2008 and 2023, beginning with a market share of 70 percent to a current share of 49 percent. The largest diesel decrease occurred between 2011 and 2018. Biodiesel adoption has wavered, with popularity in the past decade peaking at 9.9 percent in 2017 compared to the most recent figure of 3.6 percent.

Figure 2-1: Bus Vehicle Power Sources



Source: APTA Public Transportation Vehicle Database Appendix A (2023)
(a) Includes battery-electric, hydrogen, and propane powered buses
Note: Data for 2012 is not available.

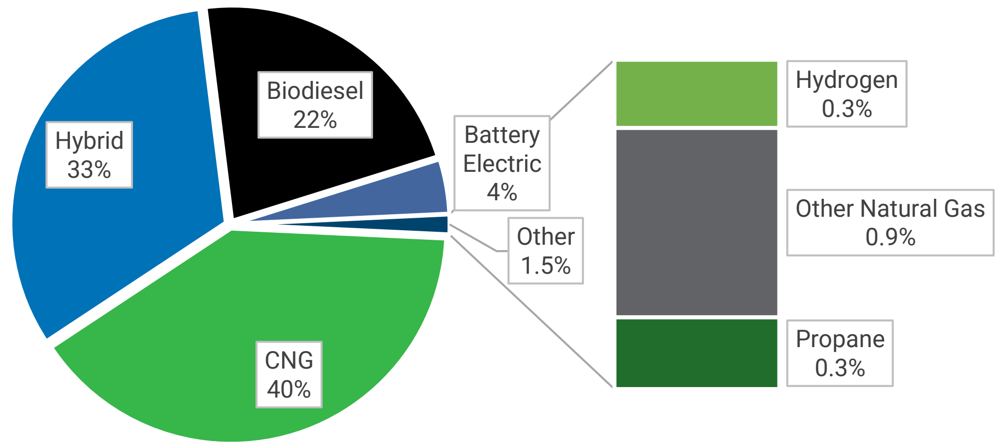
The first alternative fuel technology to gain prominence among transit fleets was compressed natural gas, which increased from 3 percent of transit vehicles to 13 percent between 1996 and 2005. A greater increase in CNG vehicles can be observed between 2015 and 2019, growing about 7 percent annually to an overall 30 percent share in fuel mix, making it the most employed alternative fuel on the market.

Hybrid vehicles (i.e., diesel and battery electric) have had a slow market penetration, with the first models introduced in the late 1990s. However, hybrid vehicles quickly gained traction between 2008 and 2014, growing from an overall fuel mix share of 3.8 percent to 17.9 percent. In 2023, the overall fuel mix share of hybrid vehicles was 18.3 percent.

Other alternative fuel technologies have made marginal market penetration, only recently surpassing 2% of overall fuel mix in 2023. The other alternatives category includes battery-electric, hydrogen, and propane. Propane as a fuel alternative is often used for smaller buses while gasoline is relatively unpopular due to its fuel compression properties and its lack of emission benefits over diesel. The adoption rates of these and other fuel alternative technologies have been impacted either by their level of maturity, cost, or reliability.

Figure 2-2 shows the current share that each alternative fuel technology has achieved among bus fleets in the U.S. in 2024. The most popular alternative fuel technology is CNG. Approximately 40 percent of the alternative fuel fleet is composed of CNG buses, followed by hybrid buses at 33 percent. Zero-emission buses make up close to 4 percent of all bus fleets, with 3 percent battery electric buses and less than 1 percent being hydrogen buses. Around 22 percent of buses use biodiesel and a combined 1.5 percent use some other fuel alternative such as propane, hydrogen, or another natural gas combination.

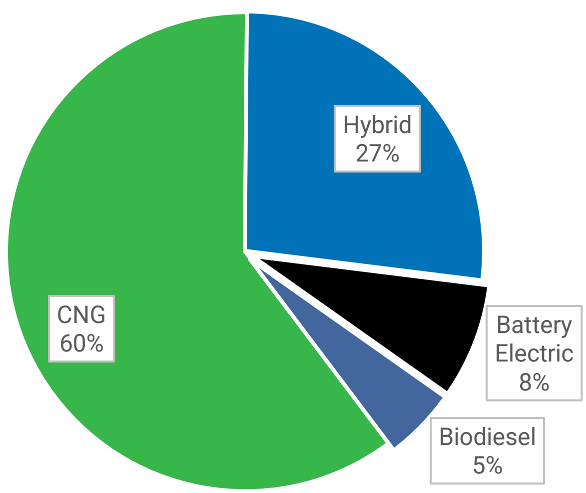
FIGURE 2-2: MIX OF ALTERNATIVE FUELS FOR US BUSES (2024)



Source: APTA Public Transportation Vehicle Database (2024)
Other Natural Gas includes compressed natural gas & diesel, compressed natural gas & gasoline, liquified natural gas propane & diesel, propane & gasoline, propane & compressed natural gas, liquified natural gas & diesel

Similar to the national trend, transit agencies in Florida are increasing their adoption of alternative fuel technologies. **Figure 2-3** shows the alternative fuel mix across buses in Florida in 2024. Among the various fuel alternative fuel technologies, CNG buses are the most common, followed by hybrid buses and battery electric buses.

FIGURE 2-3: MIX OF ALTERNATIVE FUELS FOR FLORIDA BUSES (2024)



Source: APTA Public Transportation Vehicle Database (2024)

The continued transition away from diesel fuel is expected to accelerate in the coming decade due to state and federal initiatives incentivizing conversion. Nonetheless, an uptick in diesel bus fleet share is observed between 2017 and 2023. The reversal of this trend away from diesel in recent years is due to a combination of factors, including agencies not renewing certain alternative fuel vehicles after pilot programs, and supply chain and manufacturing delays experienced during the COVID-19 pandemic, which may have required extended diesel vehicle usage until this issue was corrected. This all indicates that zero-emission fuels remain challenging to adopt, although their current fuel mix share continues to grow slowly. It is expected that these technologies will gain greater traction in the coming decades as their respective technologies mature.

Due to their low adoption rates, lack of readily available data and/or relatively small reductions in emissions, gasoline, propane, and LNG will not be explored further in this report. **Section 2.2** provides greater detail on five alternative fuel technologies: hybrid diesel-electric, CNG, biodiesel, battery electric and hydrogen FCE. Hybrid, CNG and biodiesel fuel technologies are widely used by transit agencies in Florida. Battery electric and hydrogen FCE vehicles have not been adopted very broadly; however, they are projected to become more popular and are becoming more affordable.

2.2 Alternative Fuel Technology Profiles

This section provides detailed profiles for each fuel type. Profiles include data related to the current state of the technology, a basic understanding of the fuel type, performance and reliability, and an evaluation of their impact on infrastructure and operations. Diesel is included below for comparison purposes. The various fuel alternative technologies are presented by category, starting with the low-emission category, and ending with the zero-emission category.

2.2.1 Technology Profiles

2.2.1.1 Diesel

Diesel engines have been used for propulsion since the early 20th century. The maturity and reliability of this fuel has made it the primary choice for bus fleet propulsion over the last century. Fuel consumption increased in the later 20th century as modern features were introduced in bus models such as air conditioning, heating, wheelchair lifts and other features that required more engine horsepower. In recent decades, federal regulations and technological advancements have reduced the impact of the fuel's emissions. Current improvements in diesel technology are focused on increased fuel efficiency and a reduction in emissions.

The latest changes in U.S. diesel engine standards occurred between 2007 and 2010, when the Environmental Protection Agency (EPA) aimed for the reduction of diesel emissions in a twofold approach. First, it required the reduction of sulfur content in diesel fuel by 97 percent. Second, it required vehicle exhaust emission controls like particulate filters and exhaust recirculation that reduce nitrogen oxide (NOx) and particulate matter (PM) emissions. The latter approach required improvements in engine design, leading to higher vehicle costs, and added parts for bus repair.

In March 2022, the EPA proposed rules to further reduce air pollution by lowering the emissions of NOx and PM from diesel engines to be introduced in diesel vehicles by model year 2027. Finally, the EPA suggests that for diesel vehicles in 2027, useful life periods and mileages be extended to reflect real-world usage, to extend the emissions durability requirement for heavy-duty engines and to ensure certified emission performance is maintained throughout more of an engine's operational life. These measures will likely impact bus operators by lengthening vehicle life

Breeze Diesel Fueling Station
Source: Benesch

spans, challenging current replacement schedules, increasing maintenance periods, and raising costs due to additional parts for emission control maintenance.

2.2.1.2 Biodiesel

Biodiesel, not to be confused with renewable or green diesel, is a low-emission diesel alternative produced through transesterification, where biodegradable elements such as feedstock or restaurant grease react to alcohol in the presence of a catalyst such as lye. The resulting biodiesel is referred to as B100, an acronym that indicates the percentage of biodiesel present. Pure B100 usage is uncommon; usually, biodiesel is blended with regular diesel to reduce the diesel content in favor of a more biodegradable alternative. Popular biodiesel blends currently available include five percent, 10 percent, and 20 percent forms known as B05, B10, and B20.

Source: National Renewable Energy Laboratory. www.nrel.gov

B20 is the more broadly available and used blend today; higher grades are expected to become more common. Biodiesel functions similarly to diesel in compression-ignition engines. While current diesel buses can use certain biodiesel blends, higher blends may require engine upgrades, as pure biodiesel can degrade rubber parts, affecting hoses and gaskets, and causing potential leaks. Biodiesel's lower oxidative stability can also lead to degradation with metals like copper, lead, tin, or zinc, creating sediment that may clog filters.

A cetane number (CN) is assigned to diesel and biodiesel fuels as a measure for identifying fuel ignition delay and related engine performance. Biodiesel fuels generally have a higher CN value than diesel and are considered a lower performing alternative which produces less energy. Biodiesel contains about 8 percent less energy per gallon than diesel. Nonetheless, fuel emissions are notably lower when using biodiesel blends and engines using them are notably cleaner because of a reduced amount of particulate matter compared to diesel.

In freezing temperatures, biodiesel may congeal due to grease-based components, however this is not a concern in Florida's subtropical climate.

Biodiesel blends below B20 are widely available and distributed and require no new infrastructure. The main considerations for any biodiesel fuel blend include specifying which biodiesel feedstock to use given the identified performance and maintenance concerns.

2.2.1.3 Compressed Natural Gas

CNG buses use natural gas as a low-emission fuel for internal combustion, similar to diesel buses but with key differences in fuel type. First, because natural gas is in a gaseous state, it must be compressed for optimal use. CNG is considered one the most mature and well-established fuels available to transit agencies, but its gaseous state has limitations.

CNG contains less energy than diesel, and its high-pressure cylinders connect to the engine via a fuel line with multiple valves and regulators. CNG engines require different mechanical parts than diesel, expanding the parts inventory and requiring specialized staff training.

CNG is considered a low-emission fuel alternative as its main emission is limited to NOx. This fuel alternative is flammable and, because it is an odorless and colorless gas, an additive provides a distinct odor to help detect leaks. Garages supporting CNG vehicles require an extensive evaluation to adhere to guidance from the National Fire Protection Association (NFPA). Additionally, maintenance facilities where CNG is stored or CNG vehicles are repaired require increased ventilation and gas detection systems that can detect and control gas leaks. While CNG may require additional safety infrastructure, issues related to gas leaks are rare.

CNG fueling can occur off site or on site. CNG fueling is a time-consuming process. If a fleet is larger, CNG is ideally produced or pumped on site as it increases operational efficiency. The availability of CNG is contingent upon the local natural gas utility provider. Currently, Collier County may find it challenging to find private CNG fueling but may coordinate with the Florida Power and Light (FPL) subsidiary, FPL Energy Services (FPLES), to assess the availability of natural gas services. Alternatively, private companies such as Trillium or NoPetro are known to create public private partnerships through which transit agencies could benefit from their CNG stations. On-site CNG infrastructure involves substantial investment, including a gas dryer, compressor, and storage system, with costs ranging from $500,000 for a smaller CNG station to $2 million for a larger CNG station[1].

2.2.1.4 Hybrid

Hybrid, specifically diesel-electric hybrid, buses are low-emission vehicles that combine an electric motor with an internal combustion engine. While hybrid buses have an electric component, they operate more like diesel buses than battery-electric buses and don't require external charging, instead using a rechargeable battery alongside traditional mechanical parts.

There are two types of propulsion system configurations in a hybrid bus:

- **Parallel hybrid:** Uses both the electric motor and internal combustion engine, switching between them based on driving conditions. Mostly, the electric motor is used in stop-and-go traffic, while the combustion engine powers the bus at higher speeds, such as on highways.
- **Series hybrid:** Relies solely on the electric motor for propulsion, with power supplied by a battery or a generator driven by an internal combustion engine. This configuration is better suited for stop-and-go conditions.

Concerns have been raised about the impacts related to the mining of lithium, a component required in vehicle batteries. There are two primary concerns: (1) environmental destruction from drilling and mining and (2) water contamination from the refining process. Some environmental advocates contend that the negative impacts created by the mining process may outweigh the environmental benefits achieved by battery powered vehicles.

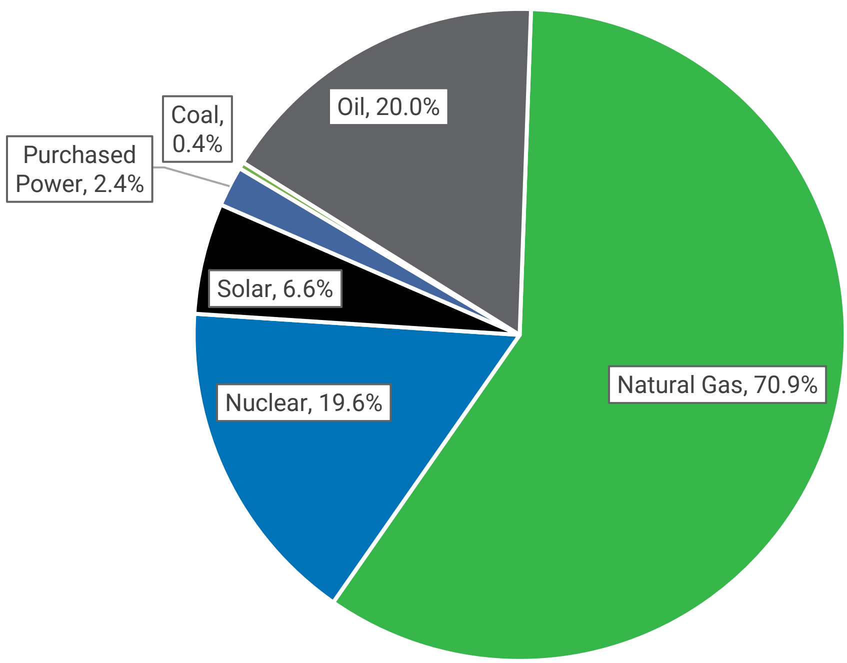
[1] Costs Associated With Compressed Natural Gas Vehicle Fueling Infrastructure, US Department of Energy, https://afdc.energy.gov/files/u/publication/cng_infrastructure_costs.pdf

In general, hybrid buses are known for their compromise in emissions and reliability between a diesel and a battery electric bus. Route characteristics and bus configuration may affect the performance of a hybrid bus, which often leads to lower reliability of the vehicle than their diesel and CNG counterparts. Nonetheless, most data shows that hybrids are much more fuel efficient than their diesel counterparts.

2.2.1.5 Battery Electric

Battery electric buses are a zero-emission technology powered by electricity from rechargeable batteries, which draw energy from the local electric grid. The environmental impact of battery electric buses depends on the fuel mix used by the local utility provider, in this case, primarily FPL. **Figure 2-4** shows the most recent fuel mix reported by FPL, CAT's primary local electric utility provider.

FIGURE 2-4: FPL ELECTRIC GENERATION FUEL MIX SOURCES (2024)



Source: Florida Power and Light, Energy News (2024)

Battery electric buses are evolving rapidly with every year bringing new, more efficient models, but the technology is still not mature. Battery electric buses draw concern due to multiple factors:

- Limited mileage range per charge
- Battery production and life cycle
- Lengthy charging times
- Variability in electric consumption affected by factors such as load, terrain, and climate

Buses carry large batteries that can be recharged and switched out as needed. These batteries require investments in charging infrastructure, with three main charging systems available

1. **Stand-alone Chargers:** This is the most widely used charging system. Chargers can be placed either at the depot or on the right of way, where buses can park next to the chargers and plug into the adapter.
2. **Pantograph Chargers:** These chargers require overhead wiring and a pantograph, an extension that transfers electricity from the overhead wiring into the electrical unit on the bus.

3. **Induction Chargers:** These chargers provide electricity to buses via electromagnetic induction where buses park over coils that are placed in the street surface to transfer electricity on board.

Most fleets start with stand-alone chargers, typically charging buses overnight at depots. Pantograph and induction chargers offer in-service boosts at stations with longer dwell times. These chargers may require facilities in the right of way and are more useful for larger battery electric fleets with high frequencies.

Source: APTA

Two forms of charging exist for buses: long-range charging or fast charging. Long-range charging is typically used overnight to charge vehicles for the following day. A full charge may require up to six hours, and the range may still be inadequate for some operational blocks. Overnight charging provides the cost benefit of lower electric rates, thereby keeping fuel costs down.

Fast charging is generally used in-route to provide a quick recharge of batteries to extend range. To implement fast-charging, in-route facilities require careful coordination to provide enough time to recharge and an understanding that the boost may be minimal compared with energy output. Scheduling for the charging facility is needed to avoid overlap, which can be difficult for low frequency systems using a pulse schedule. Additionally, since fast charging facilities are used in-route, they draw energy during daytime hours when the cost of electricity is typically higher than overnight. Fast charging may also need grid upgrades, as battery electric buses require 480 volts in three phases, while typical commercial supply is 240 volts.

Transitioning to battery electric buses involves considerations for maintenance and repair, with mechanics requiring specialized training. While battery electric buses theoretically need less maintenance due to fewer mechanical parts, practical experience may vary, and agencies often need to expand parts inventory. Moreover, complex repairs that cannot be addressed by local mechanical crews may require that a bus be taken out of service to be repaired by the manufacturer.

As noted under the hybrid section, concerns have been raised about lithium mining needed to produce these batteries.

2.2.1.6 Hydrogen Fuel Cell Electric

Hydrogen FCE buses are zero-emission vehicles that use hydrogen to generate electricity, emitting only water vapor. Despite being the cleanest mobility technology, FCE buses have low market penetration due to high costs and the need for new parts.

Hydrogen FCE buses expose hydrogen to oxygen to create electrical energy that powers the electric motor to propel the bus. While hydrogen is an abundant and renewable natural element, the gas is highly volatile and requires pressurization to be used as a fuel.

Hydrogen propulsion systems are similar to a battery electric bus, while its gas injection and maintenance is very similar to CNG buses. Hydrogen FCEs are in a stage of near maturity, but they remain expensive relative to other technologies.

Fueling options include on-site or off-site hydrogen production, though off-site sources are rare. Moreover, on-site fueling requires a substantial investment in infrastructure to deliver hydrogen. Hydrogen, like CNG, may be provided through trailered cylinders acquired locally. Hydrogen may also be stored in a liquid state. Finally, and more commonly, hydrogen may be created on site, using components similar to CNG such as a compressor, storage units, coolers and dispensers. The increased level of volatility requires more expensive materials, driving up costs significantly.

Source: https://www.act-news.com/

Due to complexity and the low levels of both demand and supply, training for such a fuel alternative is more challenging than with other fuel alternatives. Moreover, manufacturers of hydrogen equipment possess a stronghold over maintenance and repairs, meaning that specialized crews provided by manufacturers are required to perform maintenance, leading to increased lifespan costs and operational inefficiencies. Still, hydrogen FCE buses have fewer mechanical parts than diesel engines and offer a longer range than battery-electric buses, making them an appealing alternative.

Overall, nearly $3 to $5 million are required to build or modify facility conditions to adequately allow the use of hydrogen, while also requiring nearly 4,500 square feet of space. The cost of hydrogen equipment continues to drop over time, making it more affordable. The initial investment in hydrogen as an alternative may be expensive, but larger hydrogen fleets reduce the investment per vehicle costs.

2.2.2 Technology Comparison

The following section summarizes the data side-by-side to make comparing fuel technologies easier. **Table 2-2** compares key considerations for the various alternative fuel technologies. Several factors are assessed and correspond to five broad categories of impact:

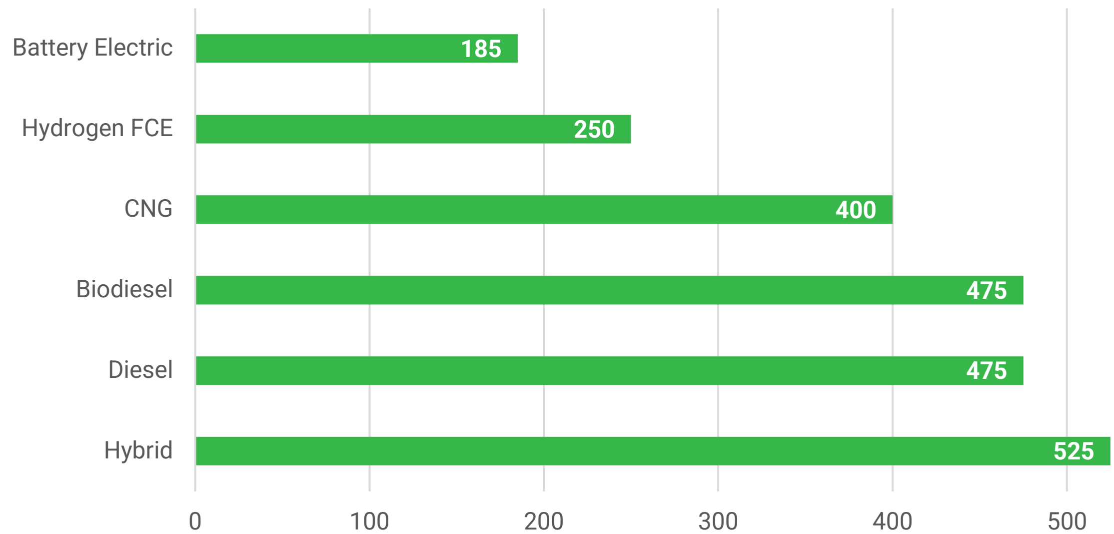
- **State of Technology:** Evaluates the current state of each alternative fuel technology such as the level of technology maturity, current industry adoption rate, the coordination required with various parties to deliver services using the technology for each bus, etc.
- **Financial Impact:** Considers the impact that each technology may have on agency finances, such as lifecycle costs, vehicle costs, and potential grant funding for each technology.
- **Impact to Facility Spaces:** Assesses the impact that the adoption of each fuel alternative technology may have on existing facility spaces, like whether using the fuel alternative requires facility upgrades or if additional space may be needed for new facilities.
- **Operations and Maintenance Impact:** Considers daily impacts of adoption such as the operational burden on the route network, reliability, and the number of unknown factors that may present themselves over time.
- **Regional Impact:** Considers a technology based on regional factors, such as the successful adoption of a technology in the region or climate and terrain factors.

TABLE 2-2: ALTERNATIVE FUEL TECHNOLOGIES COMPARISON

	Diesel	Biodiesel	CNG	Hybrid	Battery Electric	Hydrogen FCE
State of Technology						
Current Adoption Rate	Phasing Out	Stagnant	Steady	Steady	Growing	Growing
Maturity	Mature	Mature	Mature	Evolving	Evolving	Almost Mature
Emission Reduction	None	Low	Low	Low	High	High
Coordination Level	Few	Few	Some	Some	Many	Many
Ease of Adoption	Easy	Easy	Challenging	Easy	Challenging	Challenging
Financial Impact						
Lifecycle Cost	Medium	Medium	Low	Medium	Low	High
Vehicle Cost	Low	Medium	Medium	Medium	High	High
Infrastructure Cost	Low	Low	High	Low	Medium	High
Grant Security	None	Low	High	High	High	Medium
Impact to Facility Spaces						
Added Footprint	None	Low	High	Low	Medium	High
Facility Upgrades	None	Some	Many	None	Many	None
Operations and Maintenance Impact						
O&M Cost	High	High	High	Medium	Low	High
Vehicle Range	Standard	Standard	Standard	High	Low	Standard
Additional Training	None	Low	High	Medium	High	High
Added Inventory	None	Minimal	High	Medium	Medium	High
Reliability	High	Medium	High	Low	Low	Medium
Refueling Time	5 mins	5 mins	5-15 mins	5 mins	4 to 6 hours	7-20 mins
Unknown Factors	None	Few	Few	Some	Many	Many
Regional Impact (Florida)						
Regional Climate and Terrain Impact	None	Low	Low	Low	Medium	Low
Regional Agencies with Technology	Broad	Some	Broad	Broad	Minimal	None

Because vehicle range is so important to technology adoption, **Figure 2-5** provides greater detail on the range of each technology. On a full tank, hybrid buses provided the greatest vehicle range, even an improvement over the vehicle range for diesel buses. CNG buses, offering a 400-mile range, perform similarly to diesel. Battery electric buses have a relatively low range, which can present a challenge for systems that operate on longer blocks and routes. Hydrogen FCE has a relatively short range as well. It should be noted that vehicle range is affected by many factors including load, use of auxiliary systems such as heating and cooling, terrain, weather, etc.

FIGURE 2-5 AVERAGE VEHICLE RANGE (MILES)



Sources: HART presentation, "Adopting new Fuel Technologies" (2017); Fairfax County DOT presentation, "Electric Buses Overview" (2020); and Academies of Sciences, Engineering, and Medicine, Guidebook for Deploying Zero-Emission Transit Buses (2020)

3 PEER EXPERIENCE

The following section will review the profiles of Collier County's selected peers to understand the implementation of alternative fuels in their respective fleets.

3.1 Peer Review

The selection of Pinellas Suncoast Transit Authority (PSTA), Lee County Transit (LeeTran), and Jacksonville Transportation Authority (JTA) as peers was informed by the ongoing CAT Transit Development Plan (TDP) as well as market research of Florida transit agencies with a history of alternative fuel adoption. PSTA, LeeTran, and JTA have already adopted or have plans to adopt alternative fuel technologies, making them relevant benchmarks for CAT's Zero-Emission Transition Plan. While PSTA and JTA were considered for their vast implementation of alternative fuel vehicles, LeeTran scored highly in the TDP's peer comparison criteria, which considered factors such as service characteristics, operational efficiency, and demographic similarities. Their experiences offer valuable insights into the challenges and opportunities associated with transitioning to alternative fuels. **Table 3-1** presents a summary of the peer agencies.

TABLE 3-1: SELECTION OF PEERS FOR REVIEW

Agency	Location	VOMS*	Fuel Types
PSTA	Pinellas County, FL	273	Diesel, Electric Hybrid, Electric, and Autonomous Vehicle Advantage (AVA)
LeeTran	Lee County, FL	91	Diesel, Electric Hybrid
JTA	Duval County, FL	225	Compressed Natural gas (CNG), Diesel, Renewable Natural Gas (planned), Autonomous Electric Shuttles (Planned), Hydrogen (Exploratory)

**Vehicles on Maximum Service*

3.1.1 PSTA

PSTA serves Pinellas County, Florida, a region with approximately 960,000 residents. PSTA operates 38 fixed routes, including local and regional express bus services, along with popular trolley services like the SunRunner Bus Rapid Transit (BRT), Central Avenue Trolley, and Jolley Trolley routes. These transit options connect major destinations, including downtown St. Petersburg, Clearwater Beach, and Tampa, ensuring comprehensive coverage for residents and visitors. The agency also provides paratransit services for riders with disabilities.

PSTA has been a leader in sustainability efforts, transitioning its fleet to more environmentally friendly technologies. While diesel buses remain the predominant fuel type, the agency has made significant strides in incorporating electric buses, supported by grants through programs like the Low- or No-Emission Vehicle Program. In addition, PSTA has experimented with autonomous vehicle technology, including the Autonomous Vehicle Advantage (AVA) pilot project, as part of its ongoing innovations in transit solutions reflecting its critical role in regional mobility and its commitment to sustainable and efficient public transportation.

3.1.2 LeeTran

LeeTran serves Lee County, Florida, providing public transportation across an 820-square-mile area with a population of about 802,178. The system operates 24 fixed bus routes, seasonal trolleys, and paratransit services for individuals with disabilities.

In 2022, LeeTran provided approximately 2.2 million trips and covered nearly 4.8 million revenue miles. Its transit offerings focus on connecting urban centers like Cape Coral, Fort Myers, and Bonita Springs. LeeTran's fleet includes 141 vehicles, primarily diesel-powered, with some hybrid-electric buses as part of efforts to improve sustainability.

3.1.3 JTA

The Jacksonville Transportation Authority (JTA) serves Duval County and parts of Clay and Nassau Counties, providing public transportation to a population of approximately 1.6 million residents. JTA operates a diverse transit network that includes fixed-route buses, paratransit services, and the First Coast Flyer BRT system, which offers express service along key corridors.

JTA has been a leader in alternative fuel adoption, prioritizing Compressed Natural Gas (CNG) as its primary fuel source. As of 2023, JTA operates 225 vehicles in maximum service, with a fleet mix of CNG and diesel buses, ensuring operational flexibility and cost efficiency. As part of a plan to modernize Jacksonville's downtown transit infrastructure, the agency has also been at the forefront of autonomous vehicle technology as it is set to introduce 14 autonomous electric shuttles.

Additionally, JTA is exploring Renewable Natural Gas (RNG) and Hydrogen technologies as part of its long-term sustainability strategy. By leveraging a combination of alternative fuels and cutting-edge transit solutions, JTA remains committed to enhancing service reliability, reducing emissions, and preparing for the future of urban transportation in Northeast Florida.

3.2 Summary of Peer Interviews

Interviews were conducted to determine the peer agencies' experience with alternative fuel vehicles. The detailed interview notes are included in **Appendix B**.

3.2.1 PSTA

The interview with PSTA representatives provided insights into the agency's transition to alternative fuel technologies. PSTA has been incorporating hybrid-electric buses since 2009–2010 and electric buses since 2016–2017, with a strategy aimed at reducing emissions, securing grant funding, and lowering maintenance costs. While most of their fleet consists of hybrid-electric buses, they are gradually expanding the electric fleet, though diesel trolleys continue to be part of the mix. They reported success with hybrids, minimal issues with electric buses, and a 270-mile range on some electric models, though challenges remain, such as charging infrastructure and limited deployment on express routes. PSTA secured initial funding through a BP oil spill settlement and demonstrated the viability of alternative fuel buses before seeking additional funding. Key points learned include avoiding inductive charging due to impracticality, ensuring leadership support for fleet transitions, and recognizing that hybrid vehicles serve as a good starting point before a full conversion to electrification. While some cost savings have been achieved through reduced maintenance, range limitations and infrastructure improvements remain ongoing challenges.

3.2.2 LeeTran

The interview with LeeTran representatives revealed their experience with a diverse fleet mix, including aging hybrid buses (in service since 2013), propane vehicles (since 2015), and two electric buses expected in 2026. Their technology choices were driven by grant availability and fuel cost savings, although the hybrids did not meet expected fuel efficiency gains. Propane buses were initially attractive due to rebates but presented operational challenges, such as limited range, mid-day refueling needs, and maintenance delays, including frequent fuel pump replacements and long wait times for parts. Electric buses were selected to align with clean energy goals, particularly in downtown areas. Training needs varied, with propane fueling requiring only basic instruction while hybrid maintenance needs required certified technicians. The agency emphasized the importance of having backup plans due to potential breakdowns and high towing costs, noting that the overall costs of implementing and maintaining alternative fuel buses have been significant.

3.2.3 JTA

The Jacksonville Transportation Authority (JTA) interview highlighted a predominantly compressed natural gas (CNG) fleet, making up 70% of their 197 fixed-route vehicles, with CNG adoption starting in 2013–2014 to support their BRT system. Their decision to use CNG stemmed from stable fuel costs and a successful public-private partnership for fueling infrastructure. While early adoption of battery-electric buses through a 2017 grant faced range limitations and charging infrastructure issues, JTA maintains a diesel fleet for operational resiliency. They plan to introduce 14 autonomous electric shuttles in June and are exploring renewable natural gas (RNG) and hydrogen options. Challenges include underperforming electric vehicle ranges and facility space constraints for chargers. JTA values a mixed-fuel approach for safety and operational flexibility, treating its zero-emission bus plan as an evolving document to meet vehicle retirement schedules while leveraging various funding sources.

3.3 National Case Studies

As markets across the U.S. continue to transition from gasoline/diesel to various types of alternative sources of fuel energy, it is important to understand how transit agencies have utilized new technologies to enable themselves to do so. To give a broader perspective on alternative fuel implementation at the national level, three case studies from other U.S. based transit agencies were reviewed. Each case study will provide details about the agency and its service, explain their efforts in transitioning to alternate fuel sources, and provide outcomes and lessons regarding the shift. The three transit agencies explored include:

- Reno, NV: Regional Transportation Commission of Washoe County (RTC Washoe).
- Albuquerque, NM: Albuquerque Rapid Transit (ART)
- Lexington, KY: Lexington Transit Authority (Lextran)

3.3.1 Reno, NV: Regional Transportation Commission of Washoe County (RTC Washoe)

RTC Washoe serves Reno, Sparks, and other parts of Washoe County, Nevada, providing public transit to a population of approximately 450,000. The agency operates fixed-route buses, paratransit services, and BRT. RTC has been a leader in alternative fuel adoption, with 80% of its fleet already hybrid or electric.

However, the agency faced challenges with electric buses, including limited range (80-120 miles) and decreased efficiency in cold weather or on hilly routes. To address these issues, RTC recently introduced hydrogen fuel-cell buses, which offer a range of 300 miles, similar to diesel buses, making them suitable for longer routes. The agency is also building a hydrogen fueling station and providing innovative virtual reality training for mechanics to service the new buses.

Lessons learned include the importance of matching fuel technologies to operational needs, scalability of infrastructure, and proactive workforce training. RTC's approach demonstrates how agencies can balance diverse technologies to enhance sustainability and reliability.

3.3.2 Albuquerque, NM: Albuquerque Rapid Transit (ART)

Albuquerque Rapid Transit (ART), part of the ABQ RIDE system, serves Albuquerque, New Mexico, providing an essential transit backbone for the metropolitan area. ART is a BRT system that enhances connectivity along the Central Avenue corridor with high-capacity, efficient buses. ABQ RIDE overall provides over 13 million passenger trips annually, traveling approximately 160,000 miles daily.

ART's fleet initially used clean diesel buses, but the city has explored alternative fuel solutions as part of its broader sustainability goals. Recent developments include deploying electric buses, although early efforts faced challenges, such as operational issues and infrastructure gaps. These experiences highlighted the need for thorough pre-deployment testing and comprehensive charging infrastructure.

Lessons from ART include the importance of aligning technological upgrades with robust training for operators and maintenance staff. Albuquerque also demonstrated how transit projects like ART can serve as economic catalysts, fostering development along transit corridors.

3.3.3 Lexington, KY: Lexington Transit Authority (Lextran)

Lextran, the public transit agency serving Lexington, Kentucky, operates with a strong focus on sustainability and modernization. Its service area includes the Lexington-Fayette region, which has a population of over 320,000. Lextran offers a range of services, including fixed-route buses, paratransit, and campus shuttles.

In recent years, Lextran has made significant strides toward adopting alternative fuels. The agency has integrated CNG buses into its fleet, replacing aging diesel vehicles, and has introduced hybrid-electric paratransit vehicles. These initiatives were funded by federal programs like the Congestion Mitigation and Air Quality Improvement (CMAQ) program and the Low- or No-Emission Bus Grant Program. These upgrades not only mobile-source emissions but also lower operational costs and improve service reliability for riders. For example, in 2024, Lextran received over $4 million in federal funding to acquire six additional low-emission CNG buses, furthering its commitment to sustainability.

Lextran's transition to alternative fuel has provided valuable lessons. Leveraging federal grants has been key to modernizing its fleet without placing undue financial strain on the agency. Moreover, the focus on lower-emission vehicles aligns with broader environmental goals while enhancing community air quality and service dependability.

3.3.4 Summary of National Case Studies

The three case studies—RTC Washoe, Albuquerque Rapid Transit (ART), and Lextran—demonstrate the diverse approaches used by transit agencies in adopting alternative fuel technologies. RTC Washoe in Reno has strategically incorporated hydrogen fuel-cell buses to overcome range and terrain limitations, showcasing the importance of tailoring fuel solutions to specific regional needs. ART in Albuquerque initially faced reliability challenges with its electric bus fleet, highlighting the necessity of rigorous pre-deployment testing and robust infrastructure planning.

Meanwhile, Lextran in Lexington has successfully utilized federal grants to integrate CNG buses and hybrid-electric paratransit vehicles, emphasizing the role of funding in facilitating a sustainable transition. Across these agencies, alternative fuel adoption requires a thorough understanding of regional characteristics, proactive investment in infrastructure and workforce training, and strategic use of federal resources. By learning from these examples, other transit agencies can better navigate their own transitions to alternative fuels, balancing environmental goals with operational efficiency and reliability.

3.4 Key Takeaways for CAT

The lessons learned from these agencies are important for Collier County and CAT as the possibility of transitioning to different fuel types continues to be explored. Some key takeaways include:

- It is important to understand the range of EVs as buses may need to cover long distances daily. Use of EVs may need to be supplemented by other fuel and battery technologies to extend ranges.
- Any new infrastructure or modifications to existing infrastructure supporting alternative fuel strategies, including its maintenance, should be planned in advance to ensure a smooth transition.
- There are several alternate fuel types that may be explored using different vehicle types and fueling/EV infrastructure. Depending on the scale of changes, multiple fuel types may fit for different uses or route types.
- Funding sources for EV or Low/No-Emission vehicles have been available in the past. Exploring current available funding may provide opportunities for CAT to begin the process of transitioning fuel types.
- Other transit agencies are exploring alternate fuel types and the infrastructure that goes along with it. Even though there are issues that arise when doing so, these are efforts that agencies are utilizing to lower mobile-source emissions and to match community and infrastructure changes.

4 LOCAL, REGIONAL, AND STATE INITIATIVES

Understanding the broader landscape of initiatives that support alternative fuel vehicles or zero-emission vehicles (ZEV) implementation is critical to shaping CAT's decision-making and operational planning. This section provides a review of several local, regional, and state initiatives to provide valuable insights into best practices, infrastructure development, and strategic alignment for adopting electric and alternative fuel vehicles. The goal is to highlight key insights and opportunities that CAT can leverage as it transitions its fleet to alternative fuel types. The initiatives reviewed include:

- Federal Transit Administration Low or No Emission Grant Program
- Florida's Energy & Climate Action Plan (2008)
- Florida Electric Vehicle Roadmap Executive Report (2020)
- FDOT EV Infrastructure Master Plan (2021)
- CAT Transit Development Plan Major Update (2020) and Annual Progress Report (2024)
- Collier County Comprehensive Plan (2023)
- City of Naples Critical Assets and Facilities Adaptation Plan (2024)
- LeeTran FTA Bus Low- and No-Emission Grant Award (2022)

To enhance collaboration and leverage existing resources, CAT is encouraged to engage with other County departments managing large fleets—such as fire, police, solid waste, and education—to explore their experiences with ZEVs and alternative fuel technologies. These cross-departmental discussions are essential for addressing potential challenges, such as shared infrastructure and redundancy planning, and will inform CAT's approach to sustainable transit solutions.

4.1 Federal Transit Administration Low or No Emission Grant Program

The FTA's Low-No Program provides funding to help transit agencies purchase low- and zero-emission buses, such as electric or hydrogen-powered vehicles, and build facilities like charging stations to support these technologies. It also includes resources for workforce training to prepare transit workers to maintain and operate the advanced vehicles and infrastructure. The program aims to reduce air pollution, improve energy efficiency, and support climate goals while also promoting economic benefits like job creation and local manufacturing. By modernizing fleets, the program helps communities transition to cleaner, more sustainable public transportation systems, benefiting both the environment and public health.

Key Takeaways

- Provides critical funding to help transit agencies transition to low/no-emission technology.
- Includes electric/hydrogen buses and their associated infrastructure.
- Used to replace older, high-emission vehicles.
- Reduces greenhouse gas emissions, improves air quality, and aligns public transit with climate and sustainability goals.
- Includes training in the maintenance and operation of low/no emission vehicles and their associated facilities.
- Promotes job creation and supports local manufacturing.

4.2 Florida's Energy & Climate Change Action Plan (2008)

The Governor's Action Team on Energy and Climate Change developed a plan that will secure Florida's energy future, reduce greenhouse gas emissions, and heavily support and sustain strategic economic development in the emerging "green tech" sector. The plan concluded that Florida will be significantly impacted if: the current trajectory of greenhouse gas emissions is not reversed; addressing climate change can present significant energy benefits; energy management can reduce energy costs; investments in sustainable energy can stimulate Florida's economy; and that market-oriented regulations can guide a low-carbon economy.

Key Takeaways

- Transportation is the second-largest contributor to greenhouse gas emissions.
- Greenhouse gas emissions can be reduced through improving vehicle efficiency, shifting to more efficient fuel types, and reducing vehicle miles traveled.
- Transportation planning efforts should consider reductions in greenhouse gas emissions.
- Implementation of policies/strategies to include funding for non-SOV (single occupant vehicles) modes of travel.

4.3 Florida Electric Vehicle Roadmap Executive Report (2020)

Examines the current state and future needs of electric vehicle (EV) charging infrastructure across Florida. The report highlights the critical role of EVs in reducing greenhouse gas emissions and improving public health, outlines gaps in charging infrastructure, and provides recommendations for site selection, planning, and regulatory improvements. It also addresses specific challenges, such as rural and underserved community access, emergency evacuation needs, and aging infrastructure. The roadmap emphasizes the importance of collaboration among public, private, and state entities to support the transition to electric transportation.

Key Takeaways

- Identifies the need to address gaps in charging infrastructure and to upgrade existing chargers.
- Recommends temporary charging solutions for emergencies.
- Education and incentives are necessary to increase support for EV implementation.
- Collaboration among governments, businesses, and utility providers is important for successful implementation of EV infrastructure.

4.4 FDOT EV Infrastructure Master Plan (2021)

The Master Plan details a comprehensive course of action to efficiently and effectively provide EV charging infrastructure, supporting the goals of F.S. 339.287. This document serves as a starting point for both public and private entities to become familiar with the challenges and opportunities associated with EV charging infrastructure. It also serves as a guide for future legislative, agency-level and public engagement efforts. By advancing the use of EVs to improve air quality and fosters economic development by encouraging the expansion of the labor force to support EV infrastructure, this Master Plan also supports the Florida Transportation Plan (FTP). The EVMP supports opportunities to lower the total cost of vehicle ownership per household and enhances transportation equity. The primary objectives of the EVMP include: support short-range and long-range EV travel as well as emergency evacuation in the state; adapt state highway infrastructure consistent with market demand; ensure availability of adequate and reliable EV charging stations.

Key Takeaways

- Charging a transit bus will require an electric grid with an output between 150kW – 350kW
- About 5 megawatts (MW) of power will be required to support 30-35 150kW chargers, which would support a 100-bus depot on a daily basis.
- The most common method of vehicle charging comes from on-site chargers; enroute charging is also used to extend bus range and improve operations where beneficial.
- Multiple buses may be necessary to run routes traditionally run by diesel, depending on battery size and charging strategy.

4.5 CAT Transit Development Plan Major Update (2020) and Annual Progress Report (2024)

The Transit Development Plan (TDP) is a 10-year plan for transit and mobility needs, cost and revenue projections, and community transit goals, objectives, and policies. The TDP major update occurs every five years with annual updates outlining progress the transit agency has made over the past year in achieving the goals and objectives identified in the last major update. CAT is currently updating the TDP for adoption later in 2025.

Key Takeaways

- Supports CAT transition to cleaner, alt-fuel vehicles.
- Establishes need for EV charging infrastructure to be used as vehicle chargers as well as public emergency generators during disasters.
- Explores solar energy as source for EV and operations of transit facility.
- Identifies previous and ongoing CAT grant funding for EV acquisition as well as assumptions on future funding availability.

4.6 Collier County Comprehensive Plan (2023)

The Collier County Comprehensive Plan emphasizes creating a safe, efficient, and sustainable multimodal transportation system while protecting natural and coastal resources. The Transportation Element focuses on reducing greenhouse gas emissions through improved traffic circulation, mixed land-use zoning, and enhanced pedestrian, bicycle, and public transit options. The Conservation and Coastal Management Element prioritizes climate adaptation and resiliency, with strategies to address flooding, storm surge, and sea-level rise while conserving water, energy, and biodiversity. Both elements encourage sustainable development and infrastructure improvements to support long-term environmental and community health.

Key Takeaways

- Transportation strategies include reducing vehicular trips, supporting transit/active transportation, and compliance with statewide goals and objectives.
- Calls for integration between local efforts and regional planning agencies.

- Long term climate resilience through monitoring sea-level rise, low-emission travel infrastructure, and sustainable land use.
- Emphasizes a balanced approach to development and environmental stewardship for enhanced community resilience and sustainability.

4.7 City of Naples Critical Assets and Facilities Adaptation Plan (2024)

Outlines strategies to mitigate the impacts of climate hazards, particularly flooding and extreme heat. The plan builds upon prior vulnerability assessments and identifies critical infrastructure, community facilities, and natural and cultural resources that require adaptation. Strategies are categorized into tiers based on priority, with actions ranging from policy updates to infrastructure projects. The plan emphasizes community and stakeholder engagement, as well as regional partnerships, to ensure effective implementation and resiliency enhancement.

Key Takeaways

- Ranks 47 strategies into high, medium, and low priority for addressing climate risks.
- Focuses on urgent needs to reduce the negative effects of weather events, such as flooding and extreme heat.
- Combines physical infrastructure upgrades with policy updates.
- Community input identified flooding as the greatest concern.
- Aims to secure funding, protect health, and enhance the city's resiliency and livability aspects.

4.8 LeeTran FTA Bus Low- and No-Emission Grant Award (2022)

Provided $1.66 billion in grants to transit agencies, territories and states across the U.S. to invest in bus fleets and facilities. Majority of funded projects use zero-emissions technology, which reduces air pollution.

Key Takeaways

- Awarded $3.9 million for LeeTran to purchase battery electric buses.
- Includes additional charging infrastructure.

5 UTILITY PROVIDER COORDINATION

The transition to electric vehicles within CAT's fleet requires the development of electric charging infrastructure as well as an overall greater use of the local power grid. To better understand the amount of electricity and its associated infrastructure needed when working towards the electrification of the CAT fleet, communication with Florida Power & Light (FPL) and the Lee County Electric Cooperative (LCEC) was established. The goal of communicating with these electricity providers is vital in gathering information regarding necessary infrastructure upgrades, in-route charging options, planning level-cost estimates, and future maintenance requests.

FPL's Power Distribution Group focuses on larger, commercial industry projects within the Collier County area. This group may work with CAT in developing their site for possible projects that would develop the capacity for on-site EV charging. Currently, the FPL Distribution Group is conducting an internal site review of the Collier Area Transit Administration Office at 8300 Radio Road, Naples, Florida 34104 to determine their local grid's capacity and availability to grow. Continued communication with FPL will provide CAT options for the establishment of EV charging on-site through the local power grid.

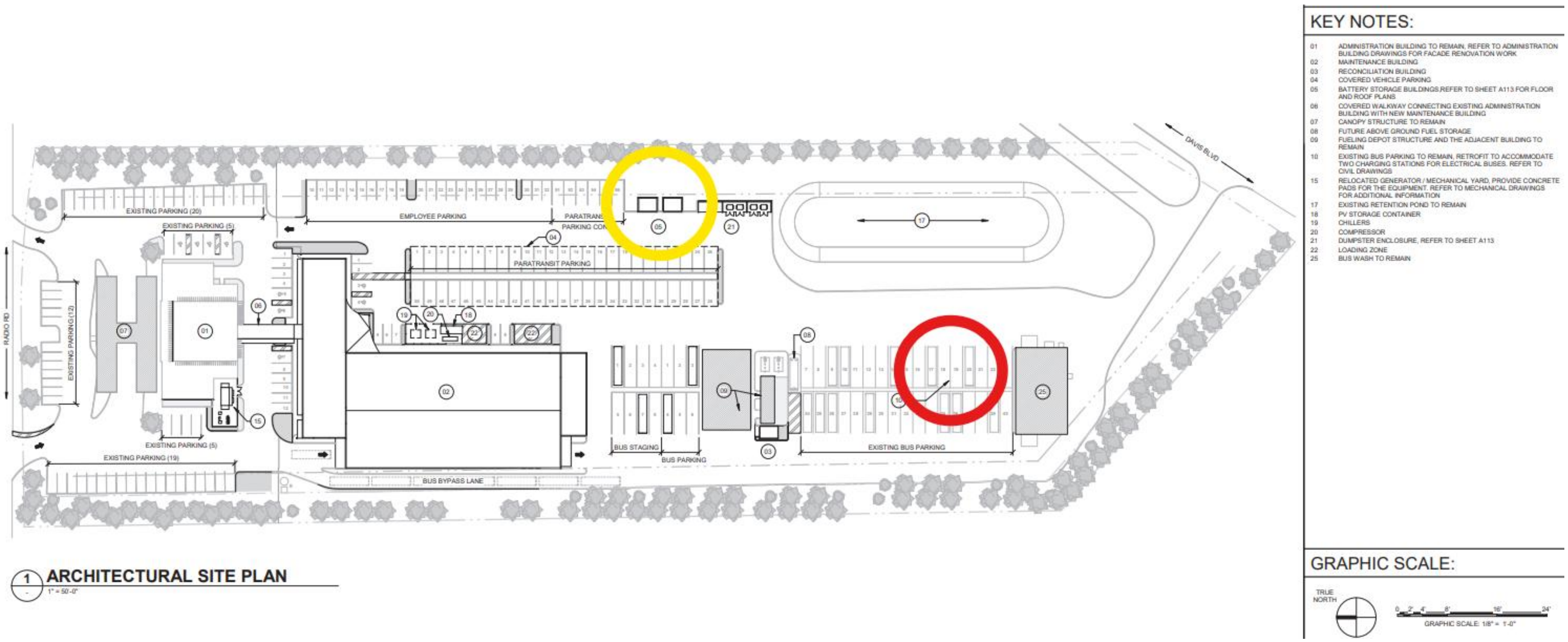
5.1 FPL EVolution

FPL's Evolution program provides comprehensive EV charging at residential and commercial levels. While the program is designed primarily for personal vehicles, fast charging and level 2 charging infrastructure can be provided, which may be used in the overnight charging of an EV bus or support vehicles. The EVolution Fleet program was created for commercial businesses to electrify their fleets. The program provides public fast charging stations at no cost, charging the driver of the EV based on the amount of electricity used for charging.

5.2 Facility Analysis

CAT has developed a site plan to include EV charging infrastructure at their administrative office. **Figure 5-1** highlights where the infrastructure will be located on the site. According to the plan, two new battery storage units will be installed on the west side of the site and are highlighted in a yellow circle. CAT also plans on retrofitting two of its current bus parking spaces to include EV charging stations, which may be used during buses' downtime to refuel the vehicle. The location of these spaces on the site is highlighted in a red circle. Overall, these electric infrastructure upgrades do not hinder the ability of the site, as the batteries are out of the way of vehicular traffic and CAT currently provides its vehicles with ample parking.

FIGURE 5-1: SITE PLAN FOR CAT ADMINISTRATIVE BUILDING



6 ALTERNATIVE FUEL FEASIBILITY

This section presents the findings of a comprehensive feasibility analysis conducted to evaluate the potential implementation of ZEVs and other alternative fuel vehicles within CAT's current transit network. The analysis includes a detailed assessment of fixed-route bus operations, demand-response paratransit operations, and equipment or support vehicle services. By modeling weekday, Saturday, and Sunday service levels, the analysis explores the operational feasibility of battery electric, hydrogen, hybrid electric, and compressed natural gas vehicles. Specific emphasis has been placed on evaluating battery electric vehicles under nominal and strenuous energy demand scenarios, while also considering factors such as battery degradation over the lifecycle of the vehicle.

This analysis aims to provide actionable insights into how fuel alternatives may align with CAT's operational needs and network requirements. Key considerations include the feasibility of vehicle block schedules, the potential addition of mid-route or off-site charging infrastructure, and the number of vehicles required to maintain efficient operations. The findings will support decision-making regarding the transition to a ZEV fleet, with the ultimate goal of achieving sustainable and efficient transit solutions.

6.1 Baseline Data

CAT provides service throughout Collier County through a total of 16 bus routes: 12 fixed routes, three circulators, and one express route. Fixed route service is provided seven days a week by CAT along with paratransit services through CATConnect for ADA clients and Transportation Disadvantaged clients. The following information was provided by CAT Staff to understand service provision, fleet size and other data that will help generate an understanding of the feasibility of introducing alternative fuel vehicles.

6.1.1 Fleet

CAT owns a fleet of 69 vehicles composed of revenue (rolling stock) and non-revenue (equipment) vehicles. **Table 6-1** summarizes CAT's current fleet composition by asset class and number of vehicles.

TABLE 6-1: CAT FLEET SUMMARY

Asset Class	Number of Vehicles
Fixed Route	*30*
Demand Response	*33*
Rolling Stock Total	63
Support (Equipment) Total	6
TOTAL FLEET SIZE	**69**

The following section describes the fleet by asset class with considerations regarding vehicle lengths, fuel types, and purchase years, as well as replacement period policies.

6.1.1.1 Fixed Route

At the time of this study, CAT's fixed route consisted of the following vehicles which are split into vehicle lengths and fuel types. The fixed route fleet is composed of 30-foot, 35-foot, and 40-foot buses. In total, CAT has 30 buses for fixed route service, with five additional buses currently in procurement. CAT's current fixed route fleet is largely made up of diesel buses, although CAT has experience with one hybrid diesel-electric bus and a new battery electric bus. **Table 6-2** presents the fixed route fleet by fuel type as well as vehicle lengths. **Table 6-3** presents the purchase year of the various buses in CAT's fleet. The largest purchases were made in 2022 and 2012, with six and five vehicles in each year respectively.

TABLE 6-2: FIXED ROUTE FLEET BY FUEL TYPE AND VEHICLE LENGTH

Vehicle Length	Diesel	Gasoline	Battery Electric	Total
30'	18**	2	0	**20**
35'	10**	0	1*	**11**
40'	4	0	0	**4**
Total	**32**	**2**	**1**	**35**

**In Procurement **Two in Procurement*

TABLE 6-3: FIXED ROUTE FLEET BY FUEL TYPE AND PURCHASE YEAR

Purchase Year	Diesel	Gasoline	Battery Electric	Total
2025	4*	0	1*	5*
2024	1	0	0	1
2023	4	0	0	4
2022	6	0	0	6
2020	0	2	0	2
2019	1	0	0	1
2018	1	0	0	1
2017	4	0	0	4
2016	3	0	0	3
2015	1	0	0	1
2014	2	0	0	2
2012	5	0	0	5
Total	32	2	1	35

** In Procurement*

CAT follows FTA's Minimum Useful Life Policy for the replacement of its vehicles: CAT replaces its 30-foot buses every 10 years, and its larger 35-foot and 40-foot buses every 12 years. CAT regularly evaluates its rolling stock's maintenance records to determine if a bus needs to be replaced, including if the bus has reached the indicated minimum replacement mileage, which would be 350,000 miles for the 30-foot buses or 500,000 miles for the 35-foot buses. For this analysis, the assumptions are based on the minimum useful years, but this does not preclude CAT from replacing vehicles as needed.

Based on these assumptions, CAT's current fixed route fleet is expected to be replaced as indicated in **Table 6-4**. The information in this table is important in building a replacement schedule that strategically moves CAT towards its vision for a low and zero-emission future.

TABLE 6-4: ESTIMATED FIXED ROUTE VEHICLE REPLACEMENT SCHEDULE

Replacement Yr.	Diesel	Gasoline	Battery Electric	Total
2037	2	0	1	3
2036	1	0	0	1
2035	2	0	0	2
2034	1	0	0	1
2033	4	0	0	4
2032	5	0	0	5
2031	0	0	0	0
2030	0	2	0	2
2029	1	0	0	1
2028	3	0	0	3
2027	5	0	0	5
2026	3	0	0	3
2025	0	0	0	0
2024	5	0	0	5
2023	0	0	0	0
Total	32	2	1	35

6.1.1.2 Demand Response

At the time of this study, CAT's demand response fleet consists primarily of 23-foot cutaway buses, with a handful of either 24-foot or 17-foot buses. In total, CAT has 33 cutaway buses for demand response service. CAT's current demand response fleet is largely fueled by gasoline, with a number of diesel-fueled cutaways. All six diesel cutaways are 23 feet in length. **Table 6-5** presents information regarding the demand response fleet by fuel type and vehicle lengths. **Table 6-6** presents the purchase year of the various cutaways in CAT's fleet. The largest purchases were made in 2019 and 2020, with eight and seven vehicles each year.

TABLE 6-5: DEMAND RESPONSE FLEET BY FUEL TYPE AND VEHICLE LENGTH

Vehicle Length	Diesel	Gasoline	Total
17'	0	3	**3**
23'	6	20	**26**
24'	0	4	**4**
Total	**6**	**27**	**33**

TABLE 6-6: DEMAND RESPONSE FLEET BY FUEL TYPE AND PURCHASE YEAR

	Diesel	Gasoline	Total
2024	0	3	3
2021	0	6	6
2020	0	7	7
2019	4	4	8
2018	0	4	4
2016	2	2	4
2012	0	1	1
Total	**6**	**27**	**33**

CAT follows FTA's Minimum Useful Life Policy for the replacement of its cutaways from its fleet every 5 years, regardless of vehicle length. CAT regularly evaluates its cutaway's maintenance records to determine if they need to be replaced, including if the cutaway has reached the indicated minimum replacement mileage, which would be 150,000. For this analysis, the assumptions are based on the minimum useful years, but this does not preclude CAT from replacing vehicles as needed

Following CAT's vehicle replacement guidelines, the current demand response fleet is expected to be replaced as indicated in **Table 6-7**. This information is useful in building a replacement schedule that strategically phases out conventional fuel vehicles, such as diesel and gasoline, for alternative fuel vehicles. The table does not reflect all vehicles that will be replaced since some will not be replaced until they have met the minimum replacement mileage. Additionally, some vehicles were not replaced at the desired time due to delays in the supply chain during COVID-19.

TABLE 6-7: ESTIMATED DEMAND RESPONSE VEHICLE REPLACEMENT SCHEDULE

	Diesel	Gasoline	Total
2029	0	3	3
2026	0	6	6
2025	0	7	7
Total	**0**	**16**	**16**

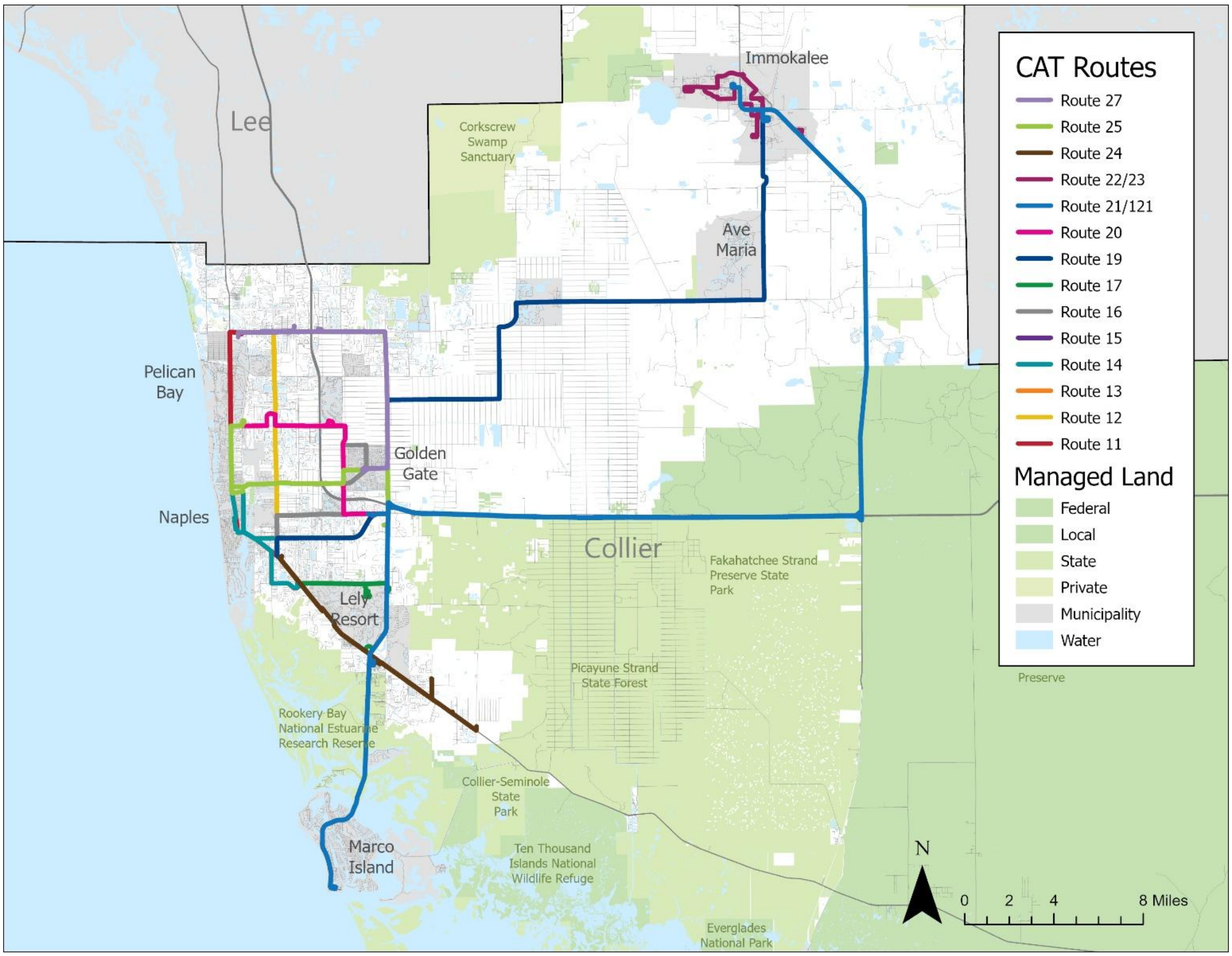
6.1.1.3 Support Vehicles

CAT operates a total of six support vehicles, all of which are gasoline fueled. Support vehicles include one sedan automobile, one sports utility vehicle (SUV), two minivans, and two pickup trucks. Two support vehicles were purchased in 2016, one in 2017 and three in 2018. Following FTA's minimum useful life policy of five years, however, asset management rules are generally less stringent about the useful life of support vehicles since they are not in revenue service. Additionally, it takes support vehicles a longer time to accumulate enough mileage before replacement is needed. CAT will be replacing its two minivans for two electric SUVs in the near future, both of which were purchased in 2018.

6.1.2 Fixed Routes and Service Blocks

CAT provides fixed route transit services across Collier County on 16 routes. **Map 6-1** presents the geographical coverage of CAT's fixed route system. Services generally cover the western, urban and suburban sectors of Collier County, including Naples, Marco Island, Pelican Bay, Golden Gate, North Naples, and other communities. Another set of routes and circulators serve Immokalee and Ave Maria which are in the northeastern portions of Collier County. Direct connections to Immokalee are provided by Route 19 to Collier County Government Center in Naples, and by Route 121 to Marco Island.

MAP 6-1: CAT ROUTES



Source: Collier Area Transit

Table 6-8 presents a profile of each CAT Route, identified by the numerical route designation along with a description of where these routes operate, service type, and route length.

Additionally, the routes were evaluated for the environment and traffic conditions under which they operate to understand how well some routes may combine with certain fuel types. Suburban routes tend to operate with fewer stops and generally on a faster pattern encountering low to medium levels of traffic. Some of these routes are long-distance commuter routes operating over suburban types of roads. On the other hand, some routes operate in an urban context, encountering traffic and stopping frequently.

TABLE 6-8: CAT ROUTE PROFILES

Route Number	Description	Route Type	Route Length*	Route Profile
11	US 41 to Creekside Commerce Park	Fixed	27.6 mi	Suburban/Low Traffic
12	Airport Road to Creekside Commerce Park	Fixed	31.4 mi	Suburban/Medium Traffic
13	NCH & Coastland Center Mall	Fixed	17.4 mi	Urban
14	Bayshore Drive to Coastland Mall	Fixed	15.7 mi	Urban
15	Golden Gate City (Santa Barbara)	Fixed	28.3 mi	Urban
16	Golden Gate City (Santa Barbara)	Fixed	42.2 mi	Urban
17	Rattlesnake to FSW	Fixed	23.6 mi	Suburban/Low Traffic
19/19X	Golden Gate Estates and Immokalee	Fixed	40.4 mi	Suburban/Commuter
20	Pine Ridge Road	Fixed	29.2 mi	Urban
21	Marco Island Circulator	Circulator	37.4 mi	Urban
22	Immokalee Circulator	Circulator	22.2 mi	Urban
23	Immokalee Circulator	Circulator	22.2 mi	Urban
24	US 41 to Charlee Estates	Fixed	30.1 mi** 17.6 mi***	Suburban/Medium Traffic
25	Golden Gate Pkwy & Goodlette-Frank	Fixed	30.2 mi	Urban
27	Immokalee Road	Fixed	32.1 mi	Suburban/Low Traffic
121	Immokalee to Marco Island Express	Express	134.6 mi	Suburban/Commuter

** Represents the total inbound and outbound route lengths*
*** Represents the long route configuration*
**** Represents the short route configuration*

The Zero Emission Vehicle Transition Plan requires evaluating the feasibility of alternative fuel vehicles within existing operations. This assessment must consider not only route profiles but, more importantly, the number of trips a single bus completes on a route or a combination of routes, as determined by the agency's operations unit, referred to as a block.

A **service block**, **vehicle block**, or simply, a **block,** is a group of scheduled trips assigned to a single vehicle. These blocks are subject to the organization of the service provider and may follow a single route or may be split among multiple different routes. Blocks are designed with careful consideration for the number of available vehicles in a fleet, the maximum hours a driver can operate a bus, and miles before refueling, among other things.

To conduct this study, it is essential to determine the number of blocks CAT operates and the total miles a vehicle travels per block, including both revenue miles and deadhead miles.

CAT currently operates weekday service on 16 routes using 21 vehicle blocks. Four of these blocks are paired, with each pair served by a single vehicle. The operating hours for each block vary across weekdays, Saturdays, and Sundays, with some blocks not running on one or both weekend days. On Saturdays, 17 of the 21 blocks are in service, while 13 blocks operate on Sundays.

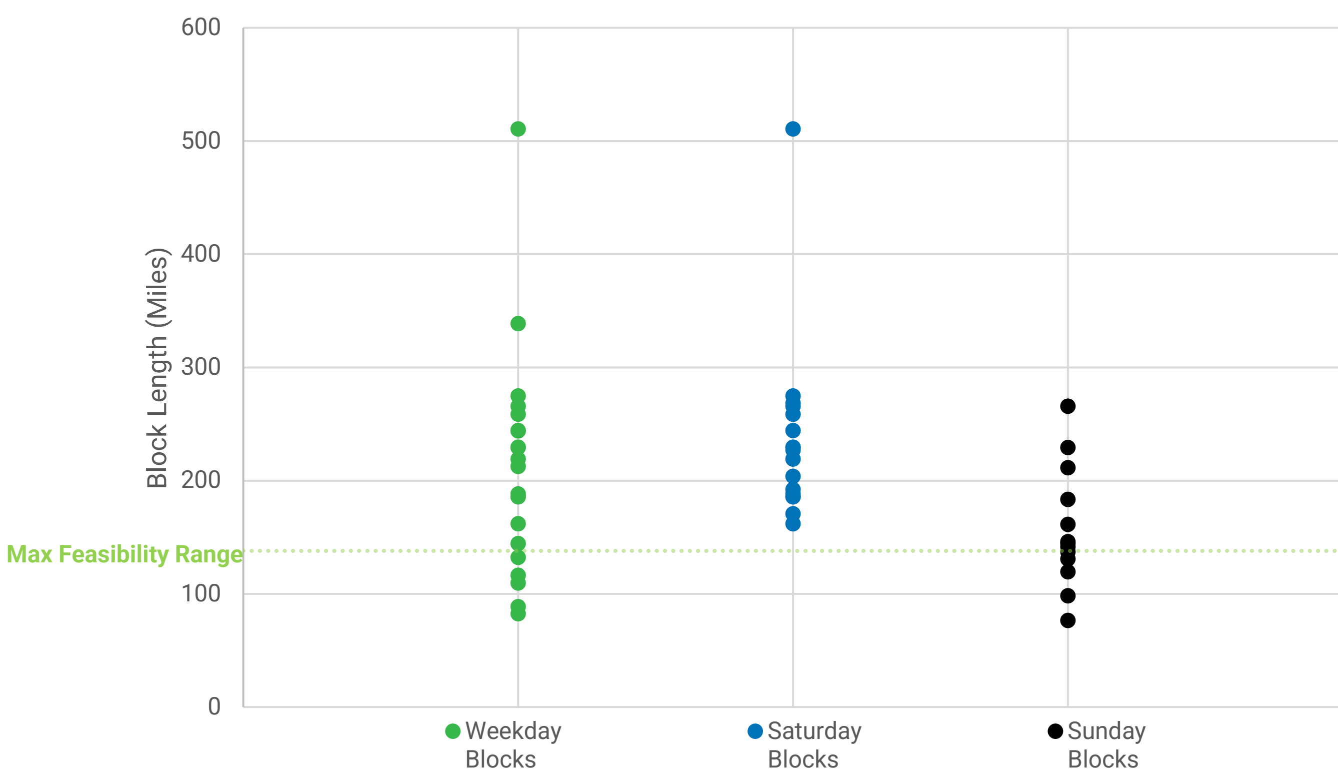
Table 6-9 presents the number of blocks in service by day and by vehicle length. Vehicle length is a key consideration for battery electric buses, as each length corresponds to a different battery capacity. This variation requires distinct assumptions when analyzing energy needs and operational feasibility.

TABLE 6-9: FIXED ROUTE SERVICE BLOCKS BY DAY OF WEEK AND VEHICLE LENGTH

Vehicle Length	Weekday	Saturday	Sunday
30'	16	12	9
35'	4	4	3
40'	1	1	1
Total	**21**	**17**	**13**

Figure 6-1 illustrates the distribution of block lengths in miles for each day of operation. On weekdays, most blocks fall between 100 and 300 miles, with two exceeding this range. Saturday blocks are generally longer, primarily ranging from 150 to 300 miles, with one block extending just over 500 miles. Sunday blocks are the shortest, typically between 100 and 250 miles. A general reference on electric vehicle feasibility range is added at around 125 miles as a quick reference to understand the distribution of blocks that may feasibly be served by battery electric buses.

FIGURE 6-1: DISTRIBUTION OF BLOCK LENGTHS FOR EACH SERVICE DAY



CAT service blocks are assigned simple integer identifiers ranging from 1 to 22, excluding Block 14 which is used for route maintenance purposes. Collectively, weekday blocks cover approximately 4,423 miles, including deadhead miles, and covering over 231 hours of total service, which accounts for deadhead and layover time. **Table 2-2** presents a comprehensive overview of service blocks, assigned routes, vehicle lengths, and operational details by day. Highlights of the operating conditions for the block schedule are listed below.

WEEKDAY SERVICE

Among weekday service blocks, Block 4 (assigned to Route 19) covers the longest distance at approximately 510 miles, followed by Block 10, which serves Routes 24 and 19, at around 339 miles. Route 19 is a long-distance commuter route that is nearly 50-miles long connecting Immokalee to the Collier County Government Center in Naples, contributing to Block 4's high mileage. Route 24 extends south of the government center along Tamiami Trail to Six L's Farm Road.

At the other end of the spectrum, Block 21 (serving Route 20) covers the shortest distance at 82 miles, followed by Block 22 (assigned to Routes 21 and 24) at 89 miles. Route 20 primarily operates along Santa Barbara Boulevard and Pine Ridge Road, while Route 21, the Marco Island Circulator, connects the Super Walmart on Collier Boulevard with Marco Island.

SATURDAY SERVICE

On Saturdays, service blocks cover a total of 4,015 miles over 209 hours. Block 4 remains the longest, operating the same distance and weekday schedule Route 19. The second-longest block, Block 3, is assigned to Route 19's express service and Route 11, which runs along Tamiami Trail north to Immokalee Road.

The shortest Saturday block is Block 16, serving Route 22, at 162 miles, followed by Block 10. Route 22, known as the Immokalee Circulator, operates as a loop serving various points around Immokalee.

SUNDAY SERVICE

Sunday service covers 2,046 miles and operates for 109 hours. The longest block, Block 1, is assigned to Route 13 and covers 266 miles, followed by Block 3, which spans 230 miles.

The shortest block, Block 2, runs Route 25 for 77 miles, followed by Block 5, which serves Route 16 at 98 miles.

TABLE 6-10: FIXED ROUTE SERVICE BLOCK PROFILES

Block No.	Vehicle Length	Assigned to Route(s)	Weekday		Saturday		Sunday	
			Time (Hours)	Distance (mi.)	Time (Hours)	Distance (mi.)	Time (Hours)	Distance (mi.)
1	40’	19/12	14:39	258.79	14:39	258.79	06:24	265.89
2/20	30’	25/19 Express	13:58	276.59	11:17	203.8	03:15	76.62
3	30’	19 Express/11	14:54	274.95	14:54	274.95	12:50	229.16
4	35’	19	17:55	510.62	17:55	510.62	10:16	146.04
5	35’	16	13:40	218.96	13:40	218.96	03:19	98.4
6	30’	121	06:24	265.89	06:24	265.89	12:08	211.6
7	30’	15	14:43	244.21	14:43	244.21	09:01	144.46
8	30’	11	12:23	185.94	12:23	185.94	10:53	161.3
9	30’	17	11:51	188.14	11:51	188.14	08:56	137.05
10	30’	24/19	13:09	338.74	06:29	170.69	07:13	130.84
11	30’	13	13:26	185.82	13:44	226.93	09:37	119.5
12	30’	27	13:56	244.1	11:14	192.16	08:39	141.62
13	35’	21	04:53	116.54	13:26	185.82	06:18	183.39
15/21	30’	20	11:14	192.17	12:50	229.16		
16	30’	22	12:50	229.16	11:35	161.92		
17	30’	14	11:35	161.92	12:50	229.48		
18	35’	23	12:50	229.48	09:18	268.37		
19	30’	24	12:44	212.64				
22	30’	21/24	04:08	88.76				
Totals			**231:12**	**4423.42**	**209:12**	**4015.83**	**108:49**	**2045.87**

6.1.3 Demand Response Service Details

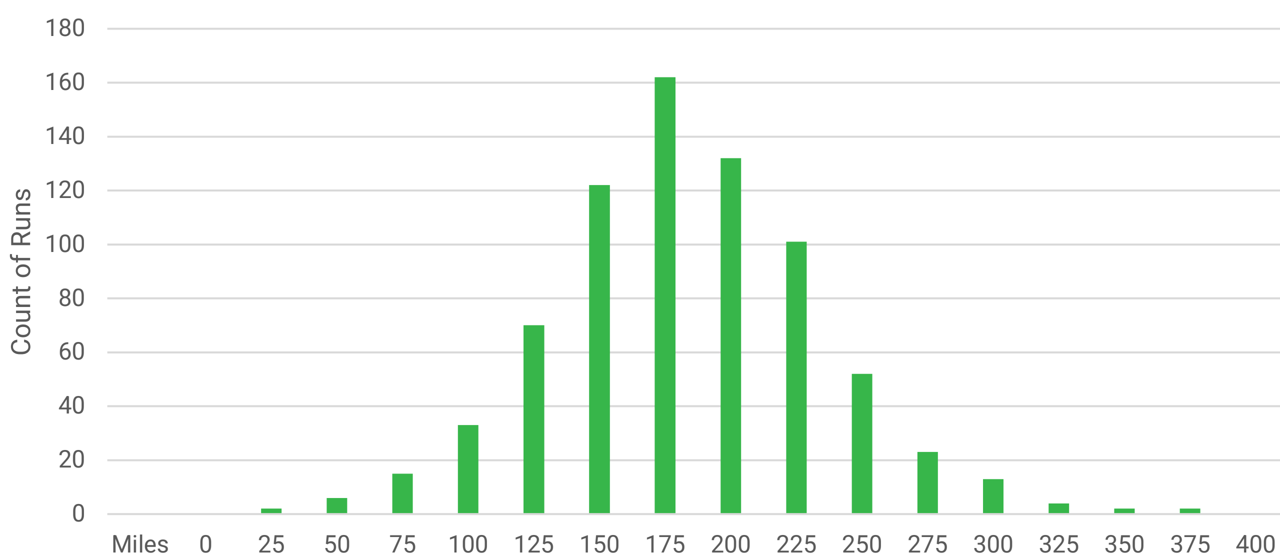
Demand Response operations are not served by routes or blocks, rather they are served by service runs. A service run is the total miles that a vehicle operates for a specific trip on a given day. Because the nature of this type of service is not fixed but based on demand, service details are less predictable. To account for the randomness of trip lengths, a sample of CAT's daily demand response run productivity was analyzed for the month of November 2024. **Table 6-11** provides a few descriptives from this data sample.

TABLE 6-11: DESCRIPTIVE DATA FROM NOVEMBER 2024 OBSERVED RUNS

Values	Miles
Minimum	35
First Quartile	166
Median	193
Average	196
Third Quartile	228
Maximum	400
Sample Size	N=739

The observed trip lengths range from 35 to 400 miles, with the most frequently occurring trips falling between 166 and 228 miles. The average trip length is 196 miles. **Figure 6-2** illustrates the distribution of trip runs in 25-mile intervals. The assessment compares the feasible service range to the various mileage values presented including average run, quartiles, percentiles, minimums and maximums.

FIGURE 6-2: DISTRIBUTION OF OBSERVED RUNS BY TRIP LENGTHS



N=739
Source: Collier Area Transit

6.1.4 Equipment/Support Mileage Details

Support vehicles are operated as needed, with each serving a distinct function, resulting in varying mileages across the support vehicle fleet. Data from the observed FY 24 mileage report for each vehicle is available, however, there is a lack of more detailed information such as daily vehicle usage data, which makes predicting service details for these vehicles challenging.

A set of conservative mileage estimates were developed to assess the feasibility of electric vehicles replacing the current support vehicle fleet. First, an estimated average daily mileage value is needed, which is the observed FY 24 mileage for each vehicle, divided by the number of service days (359), assuming operation of these vehicles occurred every day except for holidays.

Since actual daily mileage is assumed to be random, a value resembling the estimated maximum daily mileage was necessary for a robust feasibility analysis. To determine this, daily mileage values over the year were assumed to follow a normal distribution. The assumption takes that a value approximately one standard deviation from the mean encompasses a significant portion of the observed travel. Given the absence of a calculated standard deviation in the dataset, the empirical rule was applied, which assumes that one standard deviation is roughly 50% of the average value. Given these assumptions, the assumed maximum daily mileage is expressed as follows:

Estimated Maximum = Average + (1 X (0.5 X Average)) *which is also* **1.5 X Average**

The resulting estimated maximum values used in the feasibility analysis are indicated for each vehicle in **Table 6-12**.

TABLE 6-12: MILEAGE ASSUMPTIONS USED FOR EACH VEHICLE

Vehicle ID	Vehicle Type	Observed FY24 Mileage	Estimated Average Daily Mileage	Assumed Maximum Daily Mileage
CC2-2106	Minivan	21,975	59.6	89.3
CC2-2107	Minivan	20,625	55.9	83.8
CC2-2019	SUV	5,102	13.8	20.7
CC2-1553	Sedan	5,972	16.2	24.3
CC2-1662	Pickup Truck	24,222	65.6	98.5
CC2-1402	Pickup Truck	20,100	54.5	81.7

6.1.5 Facilities and Infrastructure

CAT operates seven key facilities throughout Collier County, serving as important stops or transfer stations. The largest of these include the CAT Operations and Transfer Station, which serves as the bus depot, the Intermodal Transfer Facility at the Collier County Government Center in Naples, and the newly opened CAT Transfer Facility in Immokalee. **Table 6-13** shows the names and location of CAT's various facilities.

When incorporating electric vehicles into a fleet, potential locations for charging infrastructure must be carefully evaluated. Charging site selection should consider service operations across the transit system, prioritizing layover points and locations where multiple routes converge as strategic recharging hubs. Additionally, a spatial analysis should be conducted to determine optimal placement for charging infrastructure and necessary electrical system expansions. While CAT has identified seven transfer locations for its services, only three of these facilities are owned by Collier County, where the introduction of electric infrastructure could be facilitated. The three county owned facilities include the CAT Operations and Transfer Station, the Intermodal Transfer Facility at the Government Center, and the new CAT Transfer Facility in Immokalee. **Map 6-2** through **Map 6-4** indicate the location of these transfer facilities and the routes that have an established layover at each location.

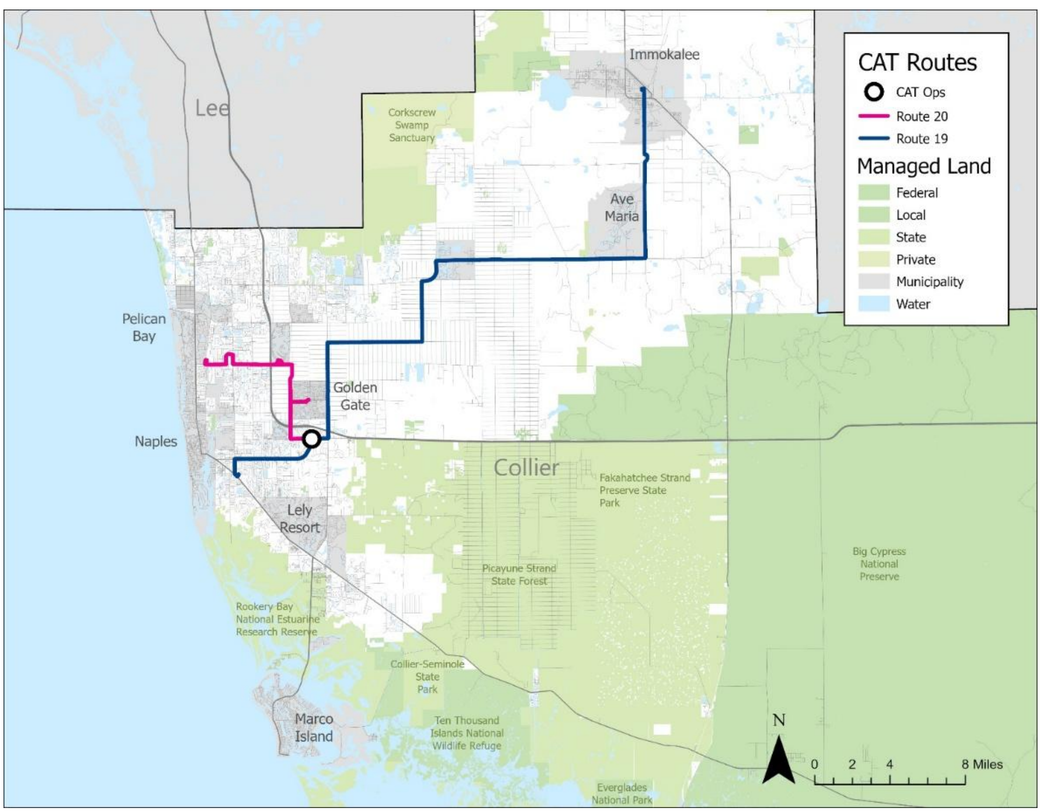
TABLE 6-13: CAT DEPOT AND TRANSFER FACILITY LOCATIONS

Depot / Transfer Station	Stop ID	Address
CAT Operations and Transfer Station	161	8300 Radio Rd, Naples, FL 34104
Intermodal Transfer Facility (Government Center)	1	3355 Tamiami Trail E, Naples, FL 34112
CAT Transfer Facility - Immokalee	398	155 Immokalee Drive, Immokalee, FL 34142
Creekside (Immokalee Rd.)	66	Immokalee Rd / Arthrex Way - North Naples, FL 34108
Walmart Plaza (US41 / CR951)	235	6650 Collier Blvd, Naples, FL 34114
Magnolia Square Plaza (Pine Ridge and Goodlette Frank Rd.)	471	5920 Goodlette-Frank Rd, Naples, FL 34109
Coastland Center	50	Fleischmann Blvd, Naples FL 34102

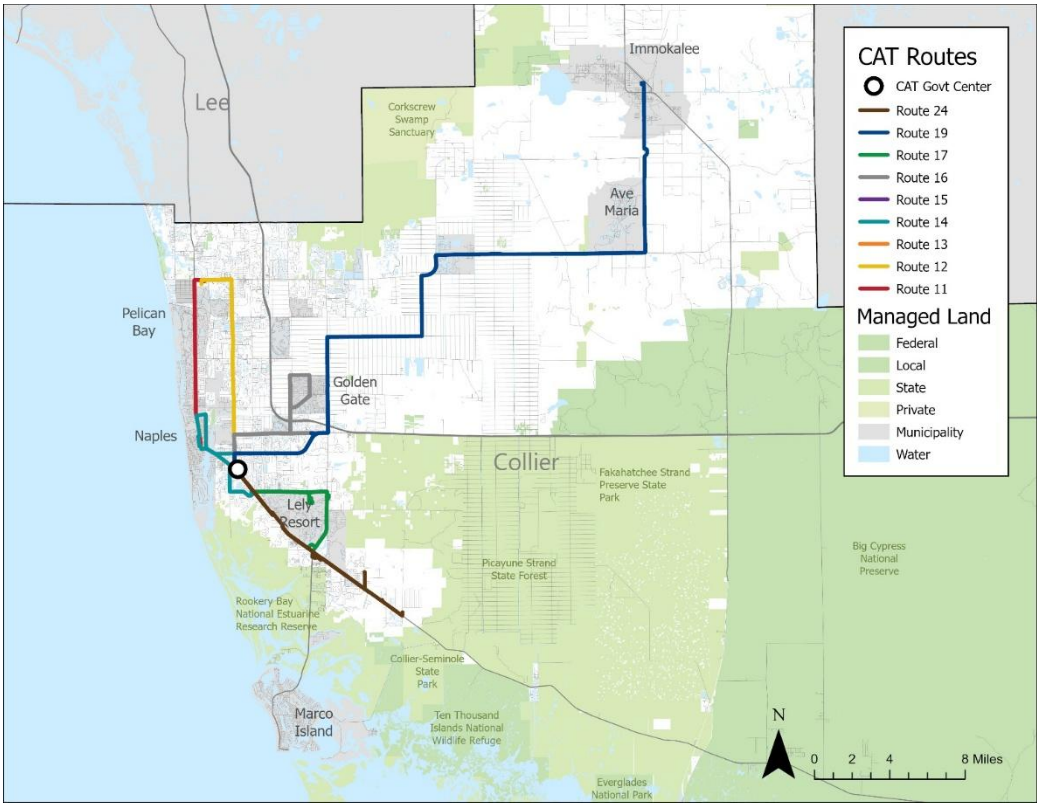
Source: Collier Area Transit

Examining these locations can help in strategizing both slow and fast charging approaches for electric vehicles and can provide understanding for which locations would have a higher demand for charging infrastructure.

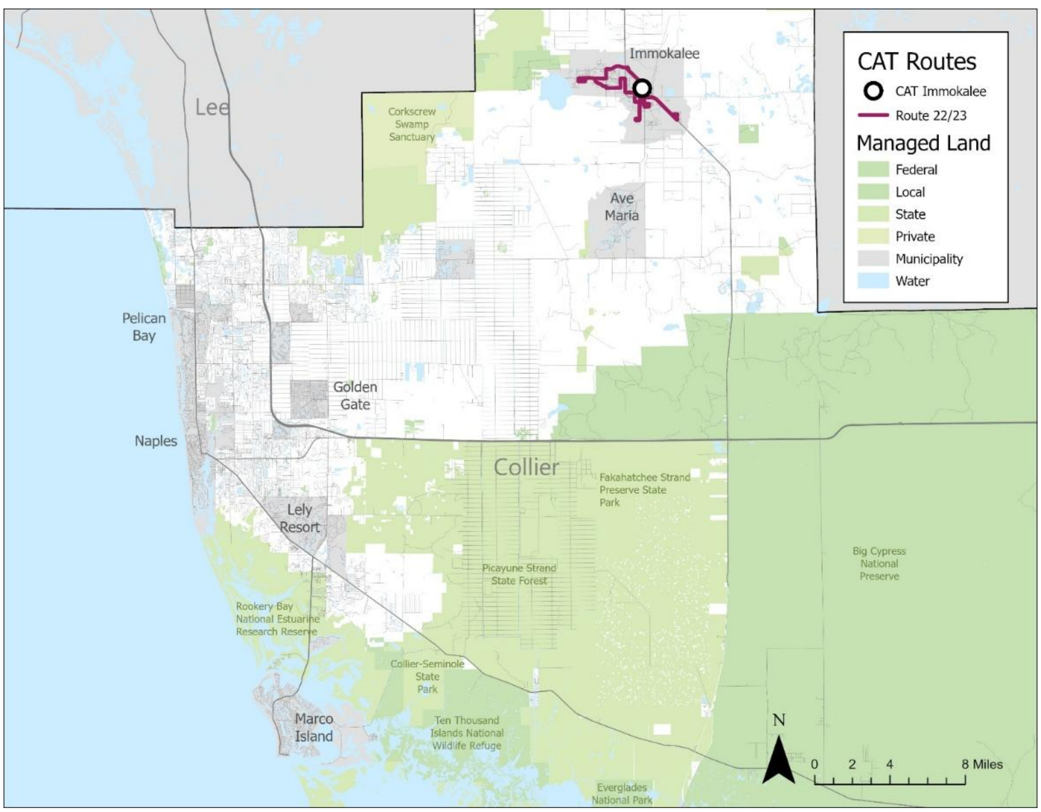
MAP 6-2: ROUTES WITH LAYOVERS AT CAT'S OPERATIONS CENTER



Map 6-3: Routes with Layovers at the Government Center Intermodal Transfer Facility



Map 6-4: Routes with Layovers at the Immokalee Transfer Facility



6.2 Feasibility Analysis Assumptions

The following section outlines the assumptions used in the feasibility analysis, focusing particularly on those related to battery electric buses, which require special consideration. Assumptions for other fuel alternatives are addressed subsequently.

6.2.1 Battery Electric Assumptions and Considerations

The battery electric bus analysis evaluates the feasibility of transit operations considering multiple factors at the same time. Battery Electric Vehicles are susceptible to a few challenges in operation due to their low travel range output from a full charge compared to the experience of agencies with vehicles operating on conventional fuels such as gasoline or diesel which provide a longer range. Additionally, strenuous service conditions such as heavy loads, elevated terrains, and hot or cold weather, have adverse impacts over the energy output, limiting the range of operations that are actually able to be served. Moreover, batteries are known to experience degradation over time due to recharging cycles. This additional factor can have impacts over the expectation of service operations of a bus in its later years or may trigger the need to purchase a new battery. These factors are examined further in the following discussion.

6.2.1.1 Nominal and Strenuous Conditions

The battery electric bus analysis evaluates the feasibility of transit operations under two conditions, Nominal and Strenuous. These two conditions reflect the impact that external conditions may have on energy consumption. Energy consumption is measured in kilowatt-hours per mile (kWh/mi, analogous to miles per gallons, mpg) as a way to understand energy efficiency. Additionally, the auxiliary power is also evaluated. While an alternator in diesel buses is responsible for recharging the battery that powers auxiliary systems in those vehicles, there is generally no such system to support the auxiliary power in a battery electric bus. Therefore, auxiliary power is drawn from the same battery that powers the bus for propulsion, adding to the total consumption of energy drawn from the battery.

Assumptions for vehicle energy consumption and auxiliary power are detailed in **Table 6-14** in both nominal and strenuous conditions. Assumptions were developed for the average battery electric bus operating on terrains and climates similar to those in Collier County. These assumptions are used in the model for all vehicle lengths.

Assumptions will specify the vehicle types they apply to. "Fixed Route" (FR) will generally refer to all buses, but when a specific vehicle length is indicated (e.g., "30' FR"), it applies only to buses of that specific length. All cutaways will be designated as "Demand Response" (DR), regardless of length. Assumptions for the support/equipment fleet will be categorized separately by vehicle type, such as minivans, sport utility vehicles (SUVs), or pickup trucks and may be jointly be described as Electric Vehicles (EV).

TABLE 6-14: NOMINAL AND STRENUOUS ASSUMPTIONS FOR BATTERY ELECTRIC BUSES

Variable	Description	Assumption
Nominal Energy Consumption	Energy required to operate the vehicle under nominal conditions	1.85 kWh/mi for all FR 0.9 kWh/mi for all DR
Strenuous Energy Consumption	Energy required to operate the vehicle under strenuous conditions	2.14 kWh/mi for all FR 1.0 kWh/mi for all DR
Nominal Auxiliary Power	The amount of power needed to operate auxiliary systems under nominal conditions	6.5 kW for all FR 3.2 kW for all DR
Strenuous Auxiliary Power	The amount of power needed to operate auxiliary systems under strenuous conditions	27 kW for all FR 13.1 for all DR

6.2.1.2 Battery Utility and Degradation

The analysis also considers the impact of battery utility and degradation on the operational capabilities of battery electric buses. It has been observed that the nominal energy capacity labeled on a battery does not account for the energy that can be used reliably. A certain amount of energy is reserved for internal battery use, reducing the usable energy to a figure lower than the stipulated total battery energy.

Additionally, the feasibility model considers an additional reserve energy of 20 kWh, which acts as a safety net for buses to travel in cases of emergency or unexpected circumstances. Moreover, battery degradation has also been observed over the years of battery usage. This degradation is responsible for the slow decrease in battery capacity over time. Experience of use suggests that batteries have a 10-year useful life and that within this period, the battery's original energy capacity is reduced by 20%, giving an annual average degradation rate of 2%. Higher rates of degradation can be mitigated by proper battery recharging protocol, which will be discussed in another section.

Table 6-15 presents the assumptions regarding battery degradation and reserve energy used in the model. Additionally, the table reports the nominal (or total) battery energy for each bus length based on vehicle models available in the market in 2024, as well as the amount of usable energy available, and service energy for each vehicle. These battery capacities are presented in kWh and are also modeled for a new battery scenario in analysis year 2025, and in the end-of-life year 2035 considering the full impact of battery degradation over the years.

TABLE 6-15: BATTERY LIFE AND DEGRADATION ASSUMPTIONS

Variable	Description	Assumption
% of Original Capacity	Percentage of the original battery's capacity that is useable at the end of battery life	80%
Useful Life of Battery	The number of years of a battery's useful lifecycle	10 years
Annual Degradation	The annual Rate of Battery Degradation	-2%
Reserve Energy (kWh)	Estimated energy required to travel approximately 10 miles to the depot from an on-route location; a "safety net" to ensure the bus can return to the depot if a bus experiences an issue on-route, causing it to use more energy than expected.	20 kWh for all FR 9 kWh for all DR

Variable	Description	Assumption
New Battery Scenario (2025)		
Total Battery Energy (kWh)	The total energy contained in the battery upon purchase	30’ FR: 350 kWh 35’ FR: 420 kWh 40’ FR: 500 kWh DR: 113 kWh
Useable Energy (kWh)	The total energy that can be withdrawn from a new battery before needing to stop	30’: 280 kWh 35’: 336 kWh 40’: 400 kWh DR: 90 kWh
Service Energy (kWh)	Maximum energy that should be used in revenue service for buses with new batteries (“Useable Energy” minus “Reserve Energy”)	30’ FR: 260 kWh 35’ FR: 316 kWh 40’ FR: 380 kWh DR: 81 kWh
End of Life Battery Scenario (2035)		
Total Battery Energy (kWh)	The total energy contained in the battery at the end of battery life	30’ FR: 286 kWh 35’ FR: 344 kWh 40’ FR: 409 kWh DR: 93 kWh
Useable Energy (kWh)	The total energy that can be withdrawn from the battery before needing to stop	30’ FR: 229 kWh 35’ FR: 275 kWh 40’ FR: 327 kWh DR: 74 kWh
Service Energy (kWh)	Maximum energy that should be used in revenue service (Useable Energy minus Reserve Energy)	30’ FR: 209 kWh 35’ FR: 255 kWh 40’ FR: 307 kWh DR: 65 kWh

6.2.1.3 Battery Improvement

Although battery electric vehicles may currently seem limited in their ability to directly replace conventional fuel vehicles, ongoing research and development aimed at improving battery capacity is making this replacement more achievable each year. Studies show that battery capacity has increased by about 7% annually since 2012, with this rate accelerating as new technologies emerge. For this analysis, a 3.5% annual improvement in battery capacity was used to project which service blocks might become feasible over the next 10 years. Total, usable, and service energy data for each vehicle length are provided in **Table 6-16** for the model years 2030 and 2035.

CAT has procured an electric Gillig bus which at the time of this writing is being built. Notably, the bus has a significantly higher capacity than the average electric bus models available in the current market. Additional analysis based on a 686 kWh battery capacity was conducted, and the results are included in **Appendix D**.

TABLE 6-16: BATTERY CAPACITY IMPROVEMENT ASSUMPTIONS

Variable	Description	Assumption
Annual Battery Capacity Improvement	The annual rate of battery capacity improvements due to increased research and development in the industry over the current year's energy assumptions	+3.5%
2030 Battery Improvement Scenario		
Total Battery Energy (kWh)	The total energy contained in the battery	30' FR: 416 kWh 35' FR: 499 kWh 40' FR: 594 kWh DR: 110 kWh
Useable Energy (kWh)	The total energy that can be withdrawn from the battery before needing to stop	30' FR: 326 kWh 35' FR: 399 kWh 40' FR: 475 kWh DR: 88 kWh
Service Energy (kWh)	Maximum energy that should be used in revenue service (Useable Energy minus Reserve Energy)	30' FR: 306 kWh 35' FR: 379 kWh 40' FR: 455 kWh DR: 79 kWh
2035 Battery Improvement Scenario		
Total Battery Energy (kWh)	The total energy contained in the battery	30' FR: 495 kWh 35' FR: 592 kWh 40' FR: 706 kWh DR: 130 kWh
Useable Energy (kWh)	The total energy that can be withdrawn from the battery before needing to stop	30' FR: 396 kWh 35' FR: 474 kWh 40' FR: 565 kWh DR: 104 kWh
Service Energy (kWh)	Maximum energy that should be used in revenue service (Useable Energy minus Reserve Energy)	30' FR: 376 kWh 35' FR: 454 kWh 40' FR: 545 kWh DR: 95 kWh

6.2.2 Other Fuel Alternatives

Assessing the operational capacity of alternative fuel vehicles is generally less challenging than evaluating battery electric vehicles. Unlike battery electric vehicles, the performance of vehicles using other fuel types does not degrade significantly over their lifecycle and is more predictable. While external factors such as load, terrain, application scenarios, and climate do affect these vehicles, their impact is not as pronounced as it is for battery electric vehicles. Furthermore, refueling alternative fuel vehicles is typically a more straightforward and simple process, enabling these vehicles to cover greater distances without significant downtime for recharging or refueling.

6.2.2.1 Hydrogen Fuel Cell Electric Bus (FCEB)

Hydrogen buses operate with very limited impacts to service. Factors that can influence a FCEB include passenger load, terrain, and the efficiency of the fuel cell. A FCEB requires 10 to 20 minutes for refueling, making it easy to introduce into operations. The range of a FCEB is about 250 miles, which will be used as an assumption on vehicle range in the feasibility analysis.

6.2.2.2 Compressed Natural Gas (CNG)

CNG buses operate with limited impacts to service. Factors that impact fuel efficiency include passenger load, terrain, and importantly, driving patterns. Urban stop-and-go routes have a reduced range compared to highway or long drives. CNG buses can be applied more efficiently over suburban routes with less stop-and-go conditions, but not long commuter routes. A CNG bus requires about 10 to 20 minutes for refueling, making it easy to introduce into operations. The range of a CNG bus is about 400 miles.

6.2.2.3 Biodiesel

Biodiesel fuel is very much a direct substitute to diesel experiencing the same impacts to fuel efficiency that diesel buses do. Biodiesel fueled buses experience a slightly lower range due to the reduced energy density of biofuel compared to diesel, but the difference may be negligible. The most important consideration for a biodiesel fueled bus is that it may perform less efficiently in cold climates when no additives are introduced into the biodiesel mix since this fuel tends to coagulate in colder temperatures. The range of a bus running on biodiesel fuel is 475 miles.

6.2.2.4 Hybrid Diesel-Electric

Hybrid Diesel-Electric buses also act as a substitute for diesel with limited impacts to service. The Hybrid bus operates best in urban stop-and-go environments due to regenerative braking maximizing the efficiency of the bus. As such the longest ranges are experienced in these urban settings, and less in highway settings. The hybrid battery will also play a role in efficiency but may be negligible if well maintained during the vehicle's useful life cycle. The range of a hybrid diesel electric bus is 525 miles.

Table 6-17 presents a summary of alternative fuel vehicle range assumptions used for the feasibility study. The assumptions only consider a quarter tank equivalent of reserve fuel for each vehicle in case of any emergency. Additionally, the total vehicle ranges are also considered for each vehicle type, as presented in the previous discussion. Assumptions are made for both fixed route buses and demand response cutaways. If an alternative fuel type configuration is not in the market for demand response vehicles, these are excluded from the analysis as not available or "NA."

The metric used to assess feasibility is the assumed service range which is simply the difference between the total vehicle range for each vehicle type, and the fuel reserve assumption that is applied to all vehicle types.

Table 6-18 outlines additional qualitative factors considered during the feasibility assessment. These factors complement the route profile evaluations by offering strategic insights into the most suitable fuel alternative for each service block. While these considerations are particularly important when developing recommendations for Low or Zero-Emission transition strategies or scenarios, they do not preclude the use of alternative fuel vehicles on blocks that may not fully align with these factors.

TABLE 6-17: SUMMARY OF ALTERNATIVE FUEL VEHICLE RANGE ASSUMPTIONS

Variable	Description	Fuel Alternative	Assumption
Fuel Reserve	The policy of having a fuel reserve for vehicles as a "safety net" to ensure the bus can return to the depot if a bus experiences an issue on-route requiring added fuel.	All Fuel Types	25% or ¼ Tank Equivalent
Total Vehicle Range	Estimated maximum range of travel for all buses on a full tank or equivalent for each respective fuel type	Hydrogen FCEB	250 miles for FR NA for DR
		CNG	400 miles for FR 275 miles for DR
		Biodiesel	475 miles for FR 350 miles for DR
		Hybrid Diesel-Electric	525 miles for FR NA for DR
Service Range	Maximum range of travel achievable for use in revenue service (Total Vehicle Range minus Fuel Reserve)	Hydrogen FCEB	188 miles for FR NA for DR
		CNG	300 miles for FR 225 miles for DR
		Biodiesel	357 miles for FR 263 miles for DR
		Hybrid Diesel-Electric	394 miles for FR NA for DR

TABLE 6-18: OTHER FEASIBILITY CONSIDERATIONS MADE DURING FEASIBILITY ASSESSMENT

Fuel	Other Consideration
Hydrogen FCEB	Fuel Cell Efficiency may degrade over time
CNG	Great for Suburban Routes, with mostly go conditions
Biodiesel	Cold climate impact over fuel
Hybrid Diesel-Electric	Operates best in urban stop-and go conditions

6.2.3 Assumptions used for Support Vehicle Assessment

Assumptions for support vehicles take into account the various vehicle models currently used by CAT and their electric vehicle equivalents available in today's market. The most common fuel alternatives available today are hybrid gasoline-electric and full-electric vehicles; hybrid models are not available for all vehicle types, so they were not considered in further analysis. Each vehicle's make and model was categorized under a group, and a suitable electric vehicle model was chosen to assess the impact of replacing it with a comparable electric option. **Table 6-19** presents this information.

TABLE 6-19: SUPPORT VEHICLE CURRENT INVENTORY AND THEIR EV EQUIVALENT

Vehicle Group	Current Inventory	Electric Model Equivalent
Minivan	Ford Transit	Ford E-Transit
SUV/Sedan	Ford Escape/Ford Taurus SEL	Chevrolet Equinox EV
Pickup Truck	Ford F-150 XL/XLT	F-150 Lightning

The assessment of electric support vehicles followed a more simplified approach than the analysis conducted for fixed-route buses and cutaways. While usable energy, reserve energy, and strenuous energy consumption were thoroughly detailed for buses and cutaways, this data is not readily available for the selected support vehicle models. To address this, a conservative assumption was applied to estimate a feasible service range. Specifically, 70% of the total available energy for all electric vehicle models was designated as the assumed safe service range. **Table 6-20** presents the nominal ranges for each vehicle model based on the manufacturer's specifications, along with the service range assumption used to evaluate feasibility.

TABLE 6-20: SERVICE RANGE ASSUMPTIONS USED FOR EACH VEHICLE GROUP

Vehicle Group	Nominal Range	Service Range Assumption
Minivan	159 miles	111 miles
SUV/Sedan	319 miles	223 miles
Pickup Truck	240 miles	168 miles

6.3 Model Results

The following section presents the results of the block feasibility model. The section first looks at results from the battery electric bus model for fixed route service blocks, followed by results for other fuel alternative vehicle types. The results are then presented in the same order for demand response vehicles, and equipment vehicles.

6.3.1 Fixed Route Block Results

The fixed route block feasibility model considers all the assumptions and considerations in the previous sections for fixed route buses. Assumptions for each of the three vehicle lengths are considered and tabulated separately for each service day.

6.3.1.1 Current Electric Bus Feasibility

The first scenario evaluates the potential implementation of battery electric buses in the current year (2025). The model is performed for each vehicle length testing for the various energy capacity assumptions determined, and accounting for battery degradation up to the 10th year of battery usage (2035) as well as nominal and strenuous conditions. Feasibly was determined as follows:

- **Feasible**: bus can feasibly operate the entire length of a block in strenuous conditions without tapping into reserve energy even after the potential amount of battery degradation in that given model year.
- **Maybe**: The bus may be able to operate but could potentially run into occasional issues where the reserve energy may need to be used. This indicator can also suggest the feasibility of a block if in-route or off-route charging were implemented.
- **Unfeasible**: The bus will likely fail to operate the entire length of a block unless major operational changes are made such as splitting a block, adjusting scheduled operations, reducing number of trips, or making the alignment shorter.

Table 6-21 lists blocks that are or may be feasible in this scenario. Detailed results can be found in **Appendix C** for each block.

TABLE 6-21: CURRENTLY FEASIBLE BLOCKS BY OPERATION DAY

Block	Vehicle Length	Block Feasibility by Operation Day		
		Weekday	Saturday	Sunday
2	30’			✓
4	35’			!
5	35’			✓
13	35’	✓		
22	30’	✓		

✓ = Feasible ! = Maybe Feasible

6.3.1.2 Future Electric Bus Feasibility

The second scenario evaluates the potential implementation of battery electric buses starting in a future year. Considering that electric battery capacities are improving at a rate of 7% annually, the availability of new blocks that can be feasibly served by battery electric buses can increase. The model looks at the purchase year's battery capacity and accounts for degradation as well as projected improvements until the battery’s tenth year. This tenth year is then analyzed for feasibility. As an example, for a bus purchased in 2025, feasibility is evaluated using the tenth year of its operation, which would be 2035. Therefore, the future scenario model identifies if a block can reliably support a bus throughout the entire ten-year period after it has been purchased. **Table 6-22** summarizes the various blocks will be or may be feasible for vehicles purchased in either 2025 or 2035. This will indicate which blocks flip from previously unfeasible to feasible in the next ten years. Detailed results from this analysis can be found in **Appendix C**.

TABLE 6-22: FUTURE FEASIBLE BLOCKS BY OPERATION DAY FOR PURCHASE YEARS 2025 AND 2035

Block	Vehicle Length	Block Feasibility by Operation Day					
		Weekday		Saturday		Sunday	
		2025	2035	2025	2035	2025	2035
2	30’					✓	✓
4	35’					!	✓
5	35’					✓	✓
7	30’						!
8	30’						!
9	30’						✓
10	30’						✓
11	30’						✓
12	30’						!
13	35’	✓	✓		!		!
16	30’				!		
17	30’		!				
22	30’	✓	✓				

✓ = Feasible ! = Maybe Feasible

Based on the results of the service modeling, one additional weekday block would become partially feasible by 2035: Block 17. Block 17 is expected to become partially feasible due to improved battery capacity for vehicle model years 2035 and beyond. Additional in route charging support could make this block fully feasible with the increased battery capacity.

6.3.1.3 Electric Re-Charging Scenario

A selection of blocks was further analyzed to understand the ability to support on-route or off-route charging strategies. Charger types were analyzed for their power output and by battery capacities to assess the amount of time required to charge a battery using one of these. Fast charging is best provided by Fast chargers with outputs between 150 kW and 350 kW. When looking at the recharge speed based for each charger, a broad assumption that one-minute of vehicle recharging is equivalent to one-mile gained in range was developed to encompass the overall recharging capacity which can range between a .8-mile gain to a 2 mile gain. The results are found in **Table 6-23**

TABLE 6-23: CHARGING OPTIONS AND TIME TO FULL CHARGE

Charger Type	Power Output (kW)	Time to Full Charge			
		350 kWh	420 kWh	500 kWh	686 kWh
DC Fast Charger (50 kW) or Induction Charger (60 kW)	50 kW	7h	8h 25m	10h	13h 45m
DC Fast Charger (150 kW) Induction Charger (180 kW)	150 kW	2h 20m	2h 50m	3h 20m	4h 30m
DC Fast Charger (350 kW)	350 kW	1h	1h 12m	1h 30m	2h
Overhead Pantograph (450 kW)	450 kW	45m	55m	1h 5m	1h 30m
Overhead Pantograph (600 kW)	600 kW	35m	40m	50m	1h 10m

Additional assumptions for the on-route charging scenarios include the implementation of fast DC chargers, with the only constraint being that the layover facility must be a county-owned property. Three main locations were identified: CAT Operations Center, Government Center, and Immokalee Transfer Facility. Blocks analyzed needed to have a layover at one of these locations. Vehicles traveling off-route to access a layover location needed to have more than 15 minutes, including deadhead to the off-route location to be considered a feasible off-route recharge location. The following briefly describes the selected routes and the assessment.

- **Block 2/20** Neither in the current scenario nor in the future scenario does Block 2/20 confidently complete a trip in the most strenuous circumstance. This would lead to failure in a worst-case scenario.
- **Block 15/21** would comfortably benefit from on-route charging at the CAT Operations Center through the 10th year in the current scenario. This block would be an excellent candidate for the on-route charging.
- **Block 17** would comfortably benefit from on-route charging at the Government Center through the 10th year in the current scenario. Considerations include the addition of chargers at the transfer station.
- **Block 11** in the current scenario would not benefit from recharging at the Government Center after the fifth year of purchase, when battery degradation will have impacted recharging

capacity significantly. However, Block 11 is expected to benefit from recharging starting in a future scenario.

- **Block 5** Neither in the current scenario nor in the future scenario does Block 5 confidently complete a trip in the most strenuous circumstance. This would lead to failure in a worst-case scenario.
- **Block 16** may be able to complete most of its trips after recharging at the Immokalee transfer station but could fail during its final deadhead trip back to the CAT Ops Center in the current scenario. Adding between 15 and 45 minutes of layover time in the schedule could make this possible. It is, however, possible that battery improvements make on-route charging feasible for Block 16 in a future scenario.
- **Block 18** may be able to complete most of its trips after recharging at the Immokalee transfer station but could fail during its final deadhead trip back to the CAT Ops Center in the current scenario. Adding between 15 and 45 minutes of layover time in the schedule could make this possible. It is, however, possible that battery improvements make on-route charging feasible for Block 18 in a future scenario.
- **Block 7** Neither in the current scenario nor in the future scenario does Block 7 confidently complete a trip in the most strenuous circumstance. This would lead to failure in a worst-case scenario.

It is expected that the on-route charging approach will allow 2 blocks (15/21 and 17) to operate comfortably with Battery Electric Buses. Three additional blocks (11, 16, and 18) will become feasible through on-route charging in a future scenario.

6.3.1.4 Current Alternative Fuel Vehicle Feasibility

The alternative fuel vehicle feasibility model assesses the viability of implementing alternative fuel buses in 2025, using vehicle range assumptions outlined previously in **Table 6-17**. Unlike battery electric buses, this model assumes that fuel type does not significantly impact vehicle range. Additionally, external factors affecting fuel efficiency, such as strenuous operating conditions, are not accounted for, as their impact is considered negligible for modeling purposes.

Tables 6-24 summarizes the model results based on the day of the week. Feasibility is categorized as follows:

- **Feasible**: The bus can operate the entire length of a block under most conditions without relying on fuel reserves.
- **Maybe**: The bus may complete the block but could occasionally require fuel reserves. This classification also applies to blocks that may be feasible if refueling is possible during layovers.
- **Unfeasible**: The bus is unlikely to complete the block without depleting fuel reserves unless major operational adjustments are made. These could include splitting the block, modifying schedules, reducing trips, or shortening the route.

More detailed information regarding each block and for each analysis year can be found in the **Appendix C**.

TABLE 6-24: FEASIBLE BLOCKS BY FUEL TYPE AND DAY OF OPERATION

Block	Vehicle Length	Block Feasibility by Operation Day											
		Hydrogen FCE			CNG			Biodiesel			Hybrid		
		Wkd.	Sat.	Sun.	Wkd.	Sat.	Sun.	Wkd.	Sat.	Sun.	Wkd.	Sat.	Sun.
1	40’				✓	✓	✓	✓	✓	✓	✓	✓	✓
2/20	30’		!	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	30’			!	✓	✓	✓	✓	✓	✓	✓	✓	✓
4	35’			✓			✓			✓	!	!	✓
5	35’	!	!	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6	30’			!	✓	✓	✓	✓	✓	✓	✓	✓	✓
7	30’	!	!	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8	30’	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
9	30’	!	!	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10	30’		✓	✓	!	✓	✓	✓	✓	✓	✓	✓	✓
11	30’	✓	!	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
12	30’	!	!	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
13	35’	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
15/21	30’	!	!		✓	✓		✓	✓		✓	✓	
16	30’	!	✓		✓	✓		✓	✓		✓	✓	
17	30’	✓	!		✓	✓		✓	✓		✓	✓	
18	35’	!			✓	✓		✓	✓		✓	✓	
19	30’	!			✓			✓			✓		

✓ = Feasible ! = Maybe Feasible

HYDROGEN FCE

Based on the results of the service modeling, 5 weekday blocks are feasible (24% of blocks), 9 may be feasible, and 7 are not feasible. Only two blocks, Blocks 8 and 13 are feasible on weekdays, Saturdays, and Sundays.

CNG BUSES

The results of the service modeling indicate that all weekday blocks are feasible except for Block 10, which may be feasible, and Block 4, which is unfeasible. On Saturday, only Block 4 remains unfeasible, and on Sunday, all blocks are feasible.

BIODIESEL

Biodiesel fueled buses can feasibly serve all weekday and Saturday blocks except for Block 4, which is unfeasible. All Sunday blocks can be served feasibly.

HYBRID DIESEL ELECTRIC

All weekday blocks can feasibly be served by a hybrid bus on weekdays and Saturday except for Block 4 which may be served under certain conditions. All Sunday blocks can be served feasibly.

6.3.2 Demand Response

The following section presents feasibility results for demand response trips. The feasibility model considers all the assumptions and considerations previously presented for demand response cutaways. Assumptions are considered separately for each service day.

6.3.2.1 Current Electric Cutaway Feasibility

The feasibility assessment for electric cutaways differs from that of buses. To evaluate their viability, a month's worth of service runs was analyzed to represent typical trip lengths for demand response services throughout the year. Given that trip lengths vary based on client needs and locations, understanding the distribution of trips by length as a percentage of total trips during the observation period is crucial. This analysis provides insight into how effectively an electric cutaway can accommodate demand response trips as a percentage of accomplishable trips.

In the current scenario, the model results indicate that up to 1% of trips currently served by CATConnect can be feasibly served through 2030. This suggests that the technology is not capable of supporting a reliable amount of services for CAT's demand response unit. This is because most cutaway batteries have low capacities and may be impacted by the use of electric lifts and other additions common in demand response fleets, which in turn drain the battery quicker in addition to the fact that average trip lengths far exceed both nominal and strenuous mileage. Conversely, CATConnect may be serving longer than average demand response trips relative to its peers. This could be a factor due to land use distribution, where origins and destinations may be further apart from each other than in more urban settings.

6.3.2.2 Electric Results Future Scenario

The second scenario evaluates the potential implementation of battery electric cutaways in future years. Considering that electric battery capacities are improving at a rate of 7% annually, the ability for an electric cutaway to serve a larger share of demand response trips feasibly is possible. The model uses the assumptions of the current year's battery capacity (2025) and builds upon the battery's improved capacity over the next ten years (2035).

It is evident that electric cutaways will not be able to reliably assist the demand response fleet in the long-term, as improvements in battery capacity do not seem sufficient to cover even five percent of trips through 2035. Unless drastic operational changes were made to accommodate this challenge, it is strongly recommended that CAT not look into replacing any part of its DR fleet with electric cutaways.

6.3.2.3 Alternative Fuel Results

Unlike buses, alternative fuel cutaways are available in fewer configurations. This study evaluates CNG and biodiesel models, as they are compatible with the fuel types used by buses, allowing for shared fueling resources across the fleet. The analysis follows the same methodology applied to electric cutaways, assessing the distribution of demand response trips by length to determine the vehicle's effectiveness in meeting service needs. **Table 6-25** presents the results of this assessment.

Table 6-25: Percentage of DR Trips Served Feasibly by Alternative Fuel Cutaways

Observed Trips	Miles	CNG Cutaways	Biodiesel (Using Diesel Cutaways)
First Percentile	70	✓	✓
Fifth Percentile	110	✓	✓
Tenth Percentile	135	✓	✓
25th Percentile	165	✓	✓
Median	193	✓	✓
Average	195	✓	✓
50th Percentile	195	✓	✓
75th Percentile	230	!	✓
85th Percentile	245	!	✓
All Trips	400		

✓ *= Feasible* ! *= Maybe Feasible*

The results indicate that CNG cutaways can reliably serve up to 85% of trips currently provided by the DR fleet, making them a strong replacement option for a significant portion of operations; gasoline or diesel cutaways would still be necessary to accommodate the longest trips. Similarly, biodiesel-fueled cutaways are capable of serving nearly all DR trips, with only a few exceptions for the longest trips. This suggests that biodiesel could effectively replace the entire DR fleet with minimal operational disruptions.

6.3.3 Equipment/Support Vehicle

The following section presents feasibility results for CAT's equipment/support vehicles. The feasibility model considers all the assumptions and considerations previously presented for various vehicle models that best represent current vehicle types. Assumptions are considered separately for each vehicle depending on the observed annual mileage for each. The feasibility is only assessed for battery electric vehicles as models in other fuel types are uncommon.

6.3.3.1 Electric Results

Electric vehicle feasibility is assessed using the annual mileage observed for each vehicle. Because daily travel data for each vehicle is unavailable, feasibility is examined through a simple method where the individual vehicles assumed maximum daily mileage is compared with an assumed safe service range. The methodology and assumptions used for this analysis can be found in Sections 6.1.4 and 6.2.3. **Table 6-26** shows the results by vehicle.

Table 6-26: Feasibility of EVs to Serve the Maximum Daily Mileage of Support Vehicles

Vehicle ID	Vehicle Type	EV Feasibility
CC2-2106	Minivan	✓
CC2-2107	Minivan	✓
CC2-2019	SUV	✓
CC2-1553	SUV	✓
CC2-1662	Pickup Truck	✓
CC2-1402	Pickup Truck	✓

✓ *= Feasible* ! *= Maybe Feasible*

The results indicate that electric vehicles can reliably replace minivans, SUVs, sedans, and pickup trucks in the existing support vehicle fleet, even on days when these vehicles travel long distances. If sufficient downtime is available throughout the day, recharging could maximize the usability of any of these vehicles.

6.4 Fuel Mix Recommendations

After reviewing the results of the feasibility model in the previous section, the output was considered for the development of possible fuel mix configurations that CAT can adopt to achieve a low or zero emission objective. The following looks at various approaches that CAT can consider for the replacement of its diesel and gasoline vehicles.

6.4.1 Fixed Route

Several possible scenarios can be considered when determining the fuel mix recommendations for the fixed route blocks. The first scenario is the most visionary approach, attempting to replace vehicles in a way that achieves the lowest emissions possible while accounting for reduced capital and operational challenges such as adding vehicles and blocks. The second scenario mimics the first scenario but simplifies the diversification of fleet, compromising for keeping two fuel types with minimal capital investment while maintaining a commitment towards battery electric buses. The third scenario minimizes the impact of capital costs but commits to a soft transition towards a low emission bus fleet. **Table 6-27** presents the recommendations under each scenario, proposing a replacement fuel type that best serves the stated objective.

TABLE 6-27: FIXED ROUTE FUEL MIX RECOMMENDATIONS

Block No.	Recommendations			
	Scenario 1: Least Harmful Emissions	**Scenario 2: Optimized Vehicle Function**	**Scenario 3: Balanced Approach**	**Scenario 4: Lowest Capital Cost**
1	Hybrid	CNG	Biodiesel	Hybrid
2/20	Hybrid	Hybrid	Hybrid	Hybrid
3	Diesel	Diesel	Diesel	Diesel
4	Diesel	Diesel	Diesel	Diesel
5	Hybrid	Hybrid	Hybrid	Hybrid
6	Hybrid	CNG	Biodiesel	Hybrid
7	Hybrid	Hybrid	Hybrid	Hybrid
8	Hybrid	CNG	Biodiesel	Hybrid
9	Hybrid	CNG	Biodiesel	Hybrid
10	Diesel	Diesel	Diesel	Diesel
11	Hybrid or BEB with On-Route Charging after 2030	Hybrid or BEB with On-Route Charging after 2030	Hybrid or BEB with On-Route Charging after 2030	Hybrid
12	Hybrid	CNG	Biodiesel	Hybrid
13	**Battery Electric**	**Battery Electric**	**Battery Electric**	Hybrid
15/21	Hybrid or BEB with On-Route Charging	Hybrid or BEB with On-Route Charging	Hybrid or BEB with On-Route Charging	Hybrid
16	Hybrid	Hybrid	Hybrid	Hybrid
17	Hybrid/BEB 2035+ or BEB with On-Route Charging	Hybrid/BEB 2035+ or BEB with On-Route Charging	Hybrid/BEB 2035+ or BEB with On-Route Charging	Hybrid
18	Hybrid or BEB with On-Route Charging after 2035	Hybrid or BEB with On-Route Charging after 2035	Hybrid or BEB with On-Route Charging after 2035	Hybrid
19	CNG	CNG	Biodiesel	Hybrid
22	**Battery Electric**	**Battery Electric**	**Battery Electric**	Hybrid

6.4.1.1 Scenario 1: Least Harmful Emissions

This scenario is designed to minimize the impact of harmful emissions in the environment given the operational conditions that CAT can provide within the study period. This maximizes the use of Battery Electric Buses, paired with the least harmful fuel alternative. When modeling the impacts of overall carbon emissions, Hybrid vehicles paired well with battery electric vehicles, due to their balanced profile of carbon emissions, as well as hybrid vehicle's well-to-wheels lifecycle cost on the environment, which is overall slightly lower than CNG buses for example. Additionally, Hybrid vehicles have a reliable range to accommodate CAT's current operations. Finally, a small portion of blocks would remain diesel. **Figure 6-3** demonstrates the expected fuel mix assigned to blocks for Scenario 1A.

A variation of Scenario 1 (1B) was also evaluated, which also aims to minimize the impact of harmful emissions in the environment. This variation maximizes the use of Battery Electric Buses by adopting on-route charging. When modeling the impacts of overall carbon emissions, Hybrid vehicles remained a choice support for battery electric vehicles, due to their balanced profile of carbon emissions. In this scenario, the objective is to flip as many blocks towards Hybrid as possible. A small portion of blocks would remain diesel, representing the longest blocks, as well as the need to retain a portion of the fleet fueled with diesel buses in the case of emergency operations in the absence of electricity. **Figure 6-4** demonstrates the expected fuel mix assigned to blocks for Scenario 1B.

Figure 6-3: Scenario 1A (No On-Route Charging)

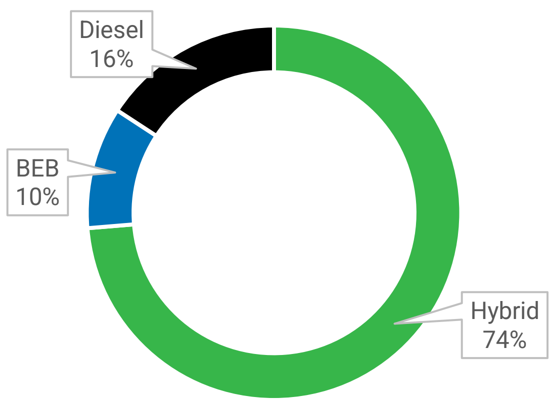
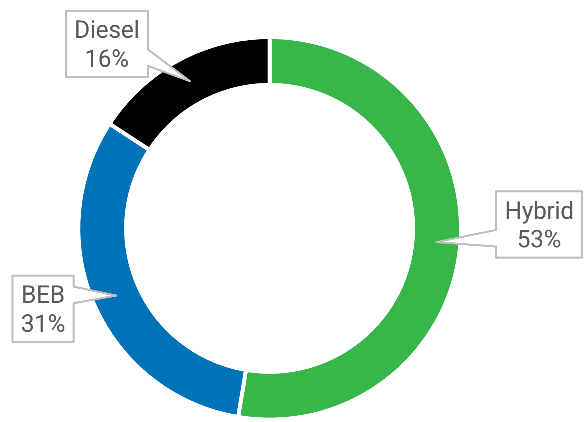


Figure 6-4: Scenario 1B (On Route Charging)



6.4.1.2 Scenario 2: Optimized Vehicle Function

Scenario 2 focuses on optimizing vehicle functions by assigning them to the environments and route profiles where they operate most efficiently. This approach minimizes unnecessary strain on the vehicles, potentially reducing breakdowns and extending fleet longevity. This scenario presents a more experimental approach with a largely diverse fuel mix. This scenario suggests the implementation of CNG as the low-emission fuel of supporting some of CAT's longest blocks with consideration of the suburban nature of parts of the county. This scenario also maximizes the inclusion of battery electric buses without on-route charging. **Figure 6-5** demonstrates the expected fuel mix assigned to blocks for Scenario 2A.

A variation of Scenario 2 (2B) is presented which also aims to maximize the functionality of each vehicle type with regards to operating environment. This variation maximizes the use of Battery Electric Buses by adopting on-route charging. A small portion of blocks would remain diesel, representing the longest blocks, as well as the need to retain a portion of the fleet fueled with diesel buses in the case of emergency operations in the absence of electricity. **Figure 6-6** demonstrates the expected fuel mix assigned to blocks for Scenario 2B.

FIGURE 6-5: SCENARIO 2A
(NO ON-ROUTE CHARGING)

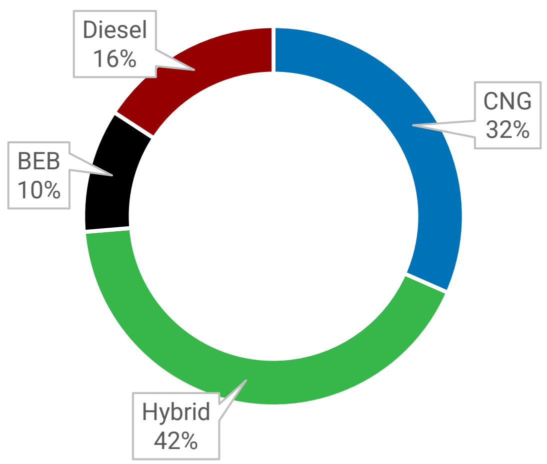
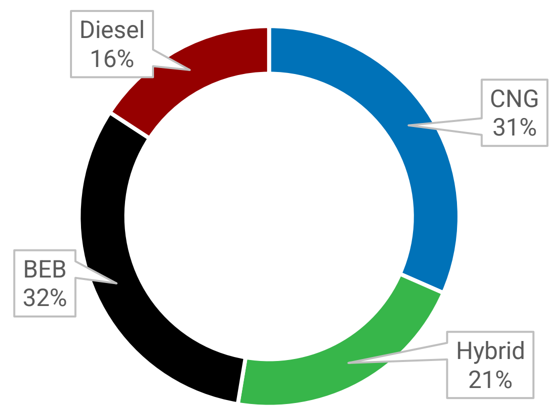


FIGURE 6-6: SCENARIO 2B
(ON-ROUTE CHARGING)



6.4.1.3 Scenario 3: Balanced Approach

Scenario 3 balances capital costs and emissions to achieve the optimal balance between both. This scenario represents a commitment to reduced emissions while also controlling costs. This scenario was best achieved by including biodiesel fuels which reduce capital costs based on the need to only purchase a tank to hold the fuel and its dispensers, which can be added to existing diesel fueling infrastructure. It also retains a larger portion of diesel vehicles in the fleet than other scenarios.

A variation of Scenario 3 (3B) was also evaluated, with the inclusion of battery electric buses. Scenario 3B demonstrates that a continued increase of electric vehicles that are feasible for each block, a decrease in the hybrid fleet is observed. Meanwhile the diesel and biodiesel group is maintained, controlling capital costs.

The fleet fuel mix for Scenario 3A and Scenario 3B are shown in **Figure 6-7** and **Figure 6-8**.

FIGURE 6-7: SCENARIO 3A
(NO ON-ROUTE CHARGING)

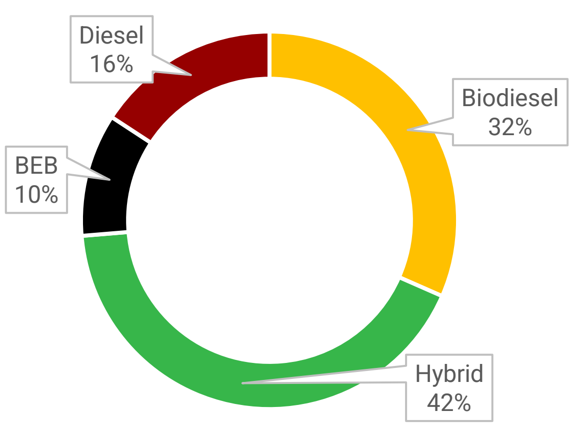
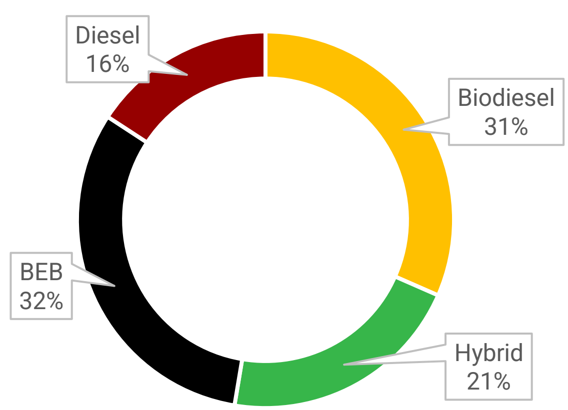


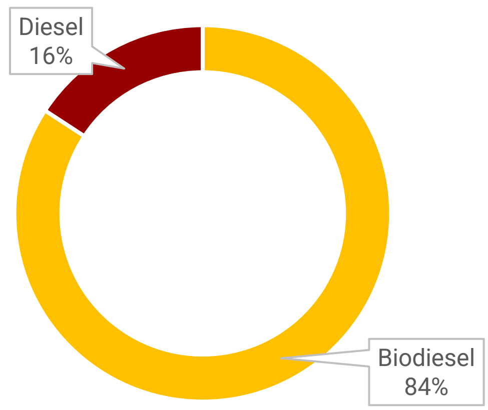
FIGURE 6-8: SCENARIO 3B
(ON-ROUTE CHARGING)



6.4.1.4 Scenario 4: Lowest Capital Cost

Finally, Scenario 4 examines the lowest capital cost approach towards a fleet transition. Without constraints, it is expected that the lowest capital cost is incurred by transitioning to a biodiesel fleet. This scenario minimizes the diversity of the fuel mix and controls the capital cost at the same time. An increase in emissions is expected due to the nature of the organic material related to biodiesel, however, a reduction in lifecycle greenhouse emissions due to fuel production are lower than the current scenario. **Figure 6-9** illustrates the fuel mix.

FIGURE 6-9: SCENARIO 4



6.4.1.5 Fixed Route Fuel Mix Scenario Comparison

The following compares estimated financial profiles for each scenario as well as annual emissions outputs, and lifecycle greenhouse gas emissions incurred during the production of the fuel type. These all help to balance considerations and benefits as well as challenges related to each scenario.

The first comparison looks at the total capital cost incurred in the implementation of each vehicle type. Assumptions for these estimates were drawn from the 2023 AFLEET tool, which models capital costs for each vehicle type. The assumptions were made for the generic transit bus assumption built in the tool and considers the vehicle cost (assuming about two vehicles per block) and the cost of additional infrastructure to accommodate the introduction of new fuel types.

Described below are the assumed infrastructure needs for each scenario.

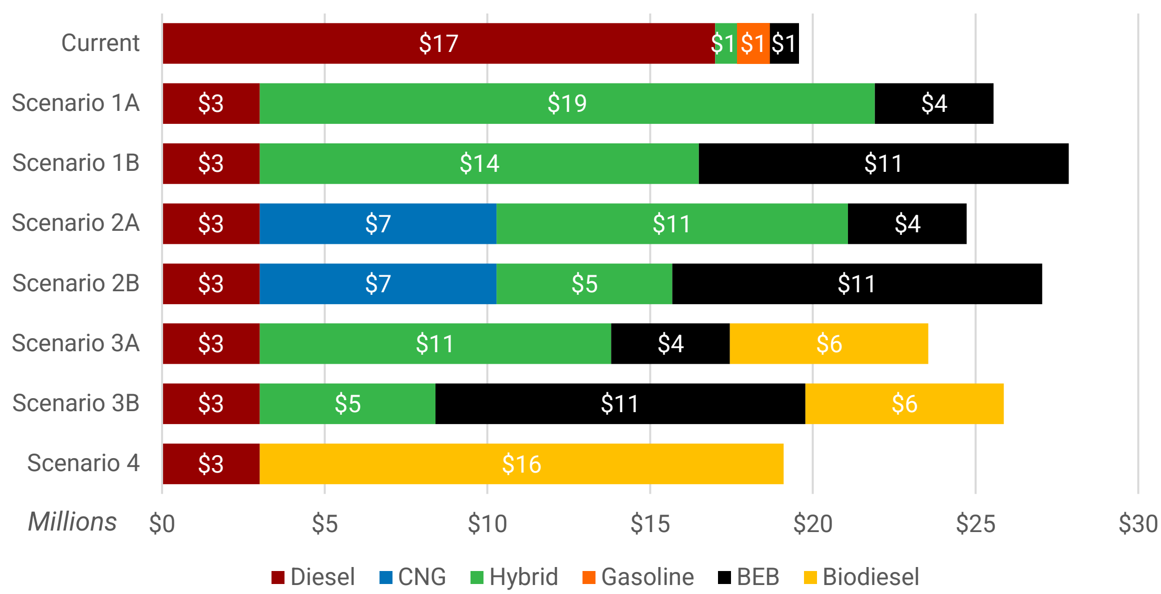
- Scenario 1A: The purchase of four Level 2 Chargers for overnight depot charging as well as the cost of installing these chargers.
- Scenario 1B: The cost of installing 12 Level 2 chargers for overnight depot charging as well as 3 fast chargers to be installed at the CAT Operations Facility, Government Center Transfer Station, and Immokalee Transfer Station, as well as the cost of installation and electrical grid upgrades.
- Scenario 2A: The purchase of four Level 2 Chargers for overnight depot charging as well as the cost of installing these chargers; and the installation of a small to medium slow-fill CNG facility, gas dryers and 12 dispensers at the depot.
- Scenario 2B: The cost of installing 12 Level 2 chargers for overnight depot charging as well as 3 fast chargers to be installed at the CAT Operations Facility, Government Center Transfer Station, and Immokalee Transfer Station, as well as the cost of installation and electrical grid upgrades.

Also, the installation of a small to medium slow-fill CNG facility, gas dryers and 12 dispensers at the depot.

- Scenario 3A: The purchase of four Level 2 Chargers for overnight depot charging as well as the cost of installing these chargers; and the addition of a fuel storage tank for biodiesel and a few added dispensers.
- Scenario 3B: The cost of installing 12 Level 2 chargers for overnight depot charging as well as 3 fast chargers to be installed at the CAT Operations Facility, Government Center Transfer Station, and Immokalee Transfer Station, as well as the cost of installation and electrical grid upgrades. The addition of a fuel storage tank for biodiesel and a few added dispensers.
- Scenario 4: The addition of a fuel storage tank for biodiesel and a few added dispensers.

Figure 6-10 presents these estimated costs for comparison purposes.

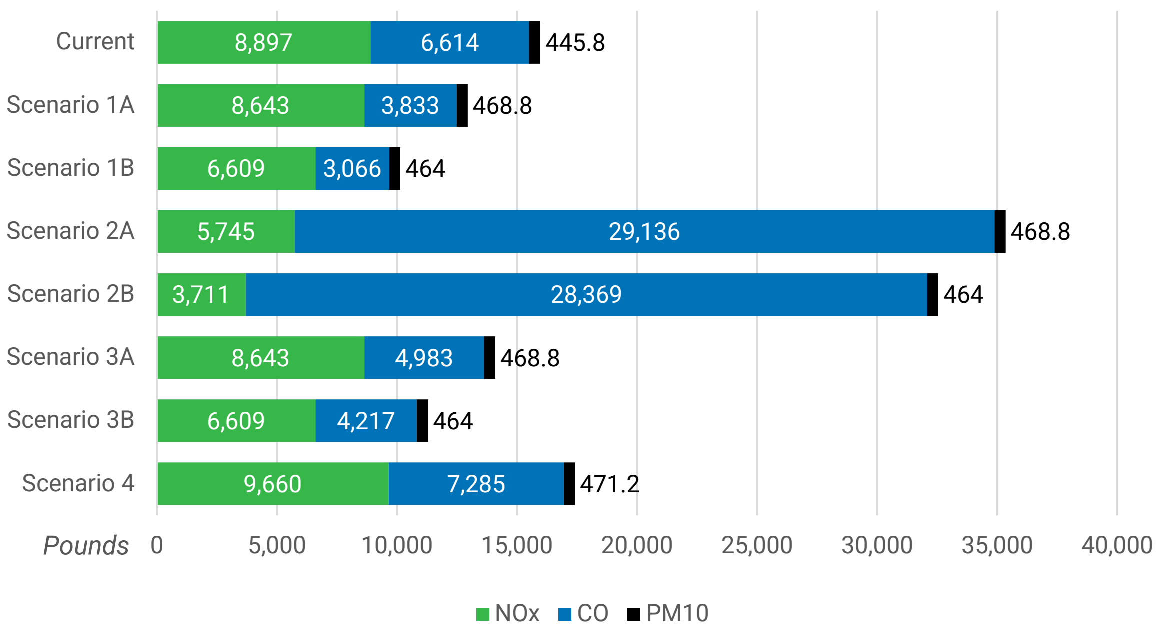
FIGURE 6-10: FIXED ROUTE ESTIMATED CAPITAL COSTS



Costs range between $18 million and $28 million, with Scenario 1B being the costliest, and Scenario 4 being the least costly, even when compared to the current scenario. Scenario 1A is the median costing approach at just over $25 million.

The estimated annual emissions output was analyzed for each scenario, varying based on the fleet's fuel mix. These figures serve as planning estimates rather than exact values. The emissions evaluated are Carbon Monoxide (CO), Nitrous Oxide (NOx), and Particulate Matter (PM10). Carbon Monoxide is found in natural and organic material in abundance and is released when incomplete fuel burning occurs. Carbon Monoxide is, however, less problematic in open air and is harmful in larger quantities when compared to NOx which can cause acid rain, smog, and ground level ozone. Moreover, NOx can cause respiratory issues and inflammation when inhaled. Finally Particulate Matter is most impactful on human health, which can be introduced into the human tissue and the bloodstream, causing severe problems including a premature death. **Figure 6-11** shows the estimated emissions profile for each scenario and should be interpreted cautiously.

FIGURE 6-11: ESTIMATED ANNUAL EMISSIONS PROFILE FOR FIXED ROUTE

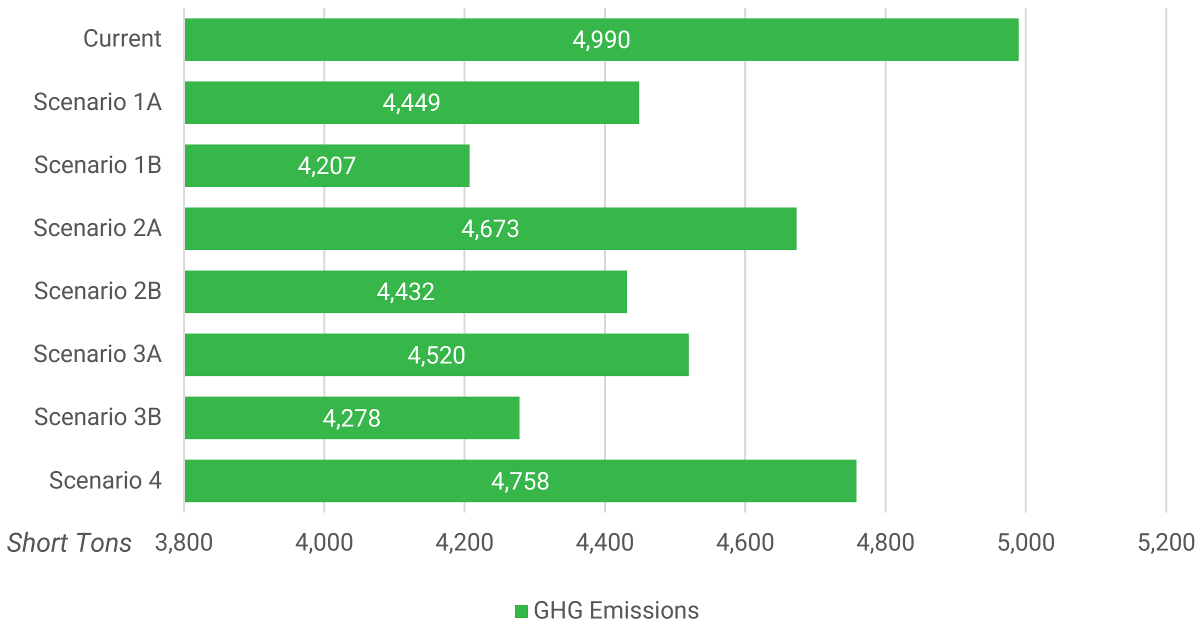


Scenarios 2A and 2B have the highest CO impact due to the release of methane and carbon monoxide from incomplete burning of natural gas in the fleet. While CO may disperse, the figures are significant. On the other hand, these scenarios also show the greatest reduction in NOx due to a large movement away from diesel. Finally, the particulate matter is standard relative to other scenarios. Scenario 1A and 1B present the lowest carbon footprint overall although the NOx profile for 1B is lower than 1A. Scenario 4 has the highest NOx emissions due to maintaining diesel fuel, and the largest particulate matter emission, being more harmful in every respect to the current scenario.

For further consideration, a well-to-wheels lifecycle analysis was also assessed. This analysis looks at the greenhouse gas emissions that are generated during the fuel production and distribution process. In the case of battery electric vehicles, this includes lithium mining for batteries, and petroleum extraction for diesel, biofuel activation for biodiesel, and natural gas extraction for CNG. **Figure 6-12** provides a comparison of the various fuel types in short tons.

The current scenario has the greatest overall impact due to the petroleum extraction process. All other scenarios present a decrease in emissions by comparison. Most notably, Scenario 1B has the lowest emission profile for fuel production, largely due to the lithium batteries, and a reduced overall use of diesel.

Figure 6-12: Well to Wheels Lifecycle Greenhouse Gas Emissions Fixed Route Comparisons



6.4.2 Demand Response

Several possible scenarios can be considered when determining the fuel mix recommendations for the transition of the demand response fleet. None of the scenarios propose the addition of electric cutaways, as these seem to be inadequate for adoption given the current demand response fleet's operations. The first scenario is the most visionary approach, attempting to replace vehicles in a way that achieves the lowest emissions possible while accounting for operational challenges such as long DR trips out of range for certain fuel types. The second scenario mimics the first scenario but simplifies the diversification of fleet by keeping two fuel types with minimal capital investment with a commitment towards low emissions. The third scenario minimizes the impact of capital costs but commits to a soft transition towards a low emission cutaway fleet. **Table 6-28** summarizes the existing fuel mix for Demand Response vehicles and resulting mix for each of the scenarios.

TABLE 6-28: DEMAND RESPONSE FUEL MIX RECOMMENDATIONS

Vehicle Type	Current Scenario		Recommendations					
			Scenario 1: Balanced Emissions and Costs		Scenario 2: Lowest Capital Cost		Scenario 3: Strong CNG	
Diesel	25%	8	0%	0	25%	8	0%	0
Gasoline	75%	24	75%	24	0	0	0%	0
Biodiesel	0%	0	0%	0	75%	24	25%	8
CNG	0%	0	25%	8	0	0	75%	24

6.4.2.1 Scenario 1

Scenario 1 aims to balance the emissions output and capital costs. This scenario envisions maintaining 24 gasoline vehicles, which is the current composition of the gasoline fleet, and replacing diesel cutaways with CNG cutaways.

6.4.2.2 Scenario 2

Scenario 2 Aims to reduce capital costs while transitioning into a fuel alternative. This scenario maximizes the diesel fleet and applies the use of biodiesel fuel in the fleet.

6.4.2.3 Scenario 3

Scenario 3 aims to take a strong approach or investment into CNG. 75% of the demand response fleet would transition to CNG, with a selection of diesel cutaways to serve the longest trips.

6.4.2.4 Scenario Comparisons

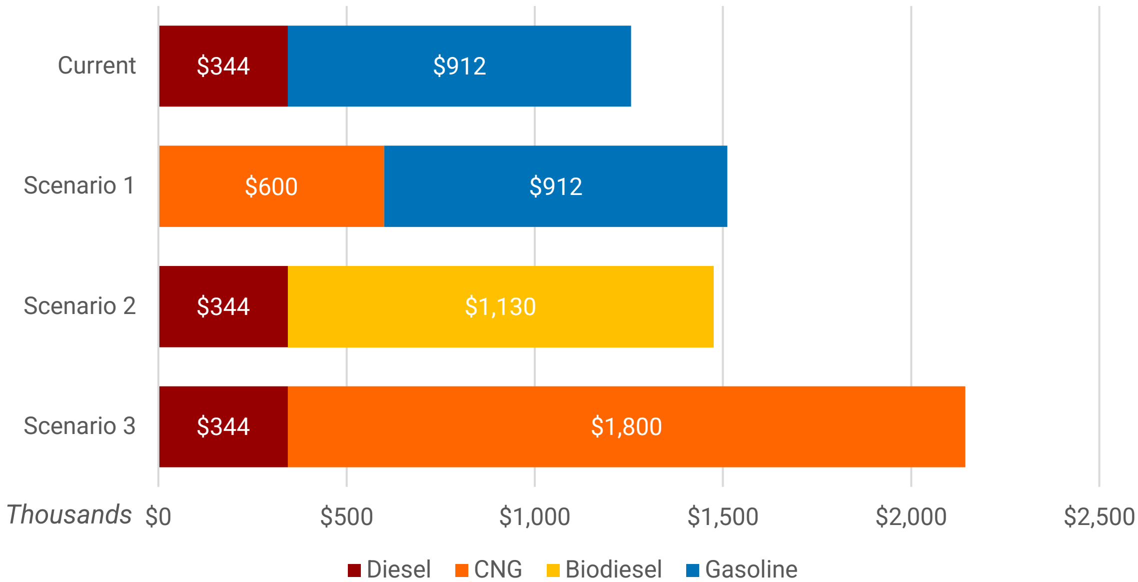
The capital costs range between $1.5 million and $2.2 million, while the current fleet cost is currently about $1.3 million. Scenario 3 is the costliest due to the added infrastructure that would be required in addition to the vehicle purchase. Scenario 2 is the least expensive, only requiring the addition of a biodiesel tank.

Assumptions regarding capital costs include:

- Scenario 1: the installation of a small CNG facility with dispensers
- Scenario 2: The purchase and installation of a biodiesel tank
- Scenario 3: The installation of a small to medium CNG facility with dispensers.

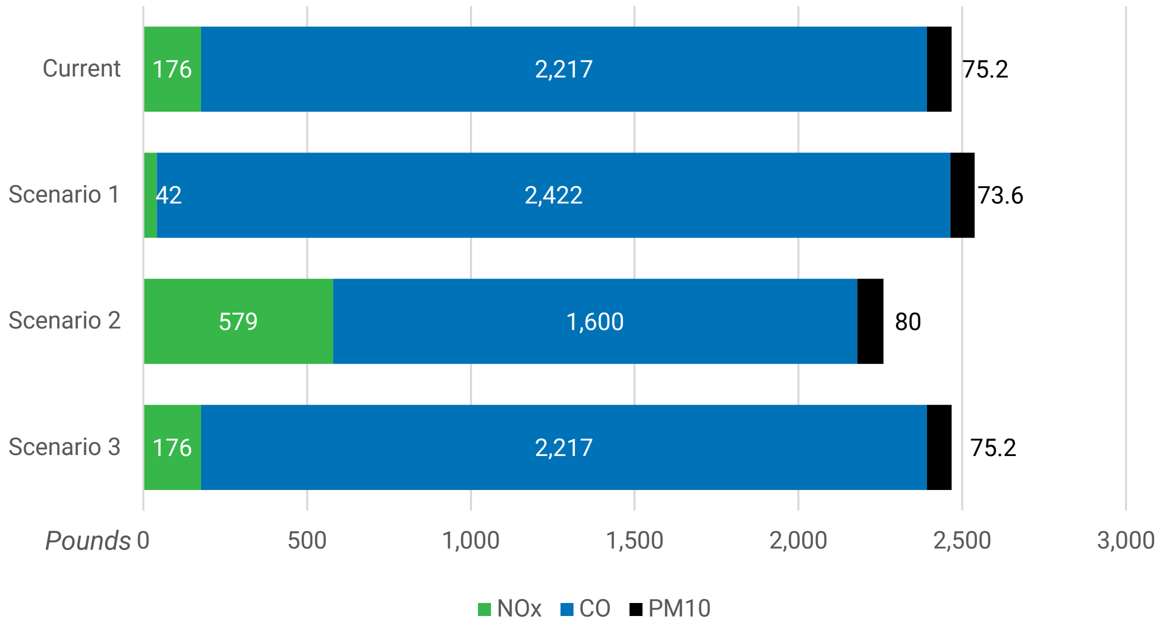
Figure 6-13 presents the capital costs for the various scenarios proposed compared to the current scenario.

FIGURE 6-13: DEMAND RESPONSE ESTIMATED CAPITAL COSTS



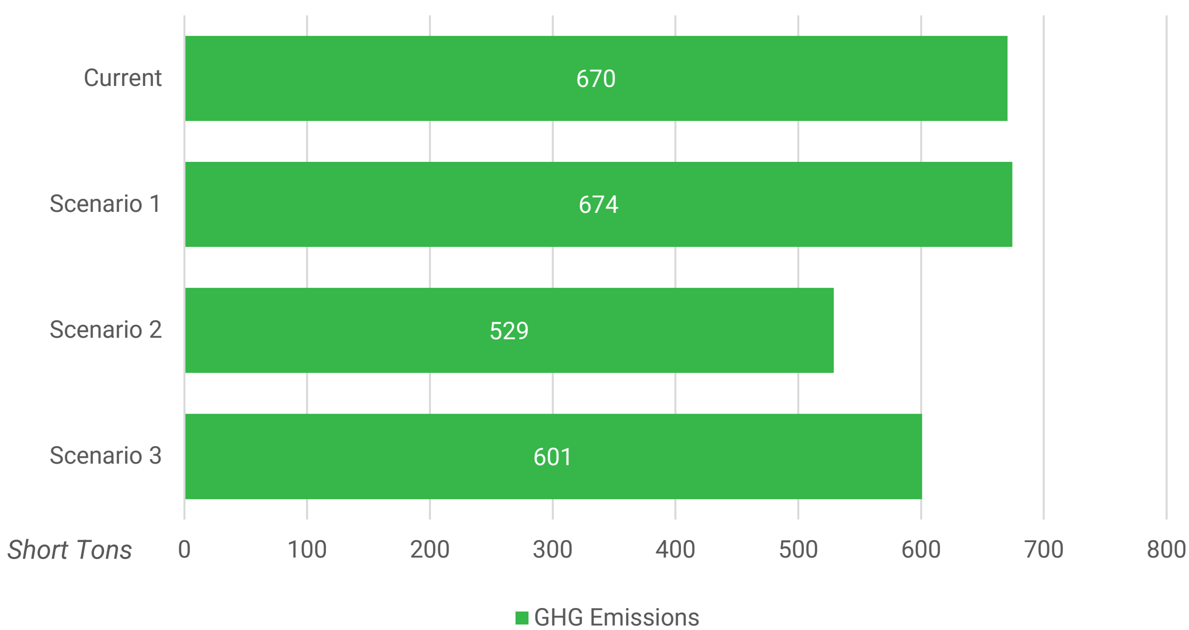
Emissions profiles were also developed for the various demand response scenarios proposed. Variation in emission output is less pronounced compared to fixed route scenarios. The largest observable change is Scenario 2's large increase in NOx and Particulate Matter emissions compared to other scenarios, even though it does achieve a reduction in CO. This could be an alarming counterintuitive approach due to its relatively higher NOx output. **Figure 6-14** presents the comparison.

FIGURE 6-14: ESTIMATED ANNUAL EMISSIONS PROFILE FOR DEMAND RESPONSE



A well to wheels emissions profile was also developed and assessed for the demand response scenarios. Scenario 2 has a clear advantage in its reduction of lifecycle emissions from the well, in this case, the production of biofuel. Meanwhile, the CNG Scenario 3 is also a clear reducer of emissions overall. **Figure 6-15** presents these profiles.

FIGURE 6-15: WELL TO WHEELS LIFECYCLE GREENHOUSE GAS EMISSIONS DEMAND RESPONSE COMPARISONS



6.4.3 Equipment/Support Vehicle

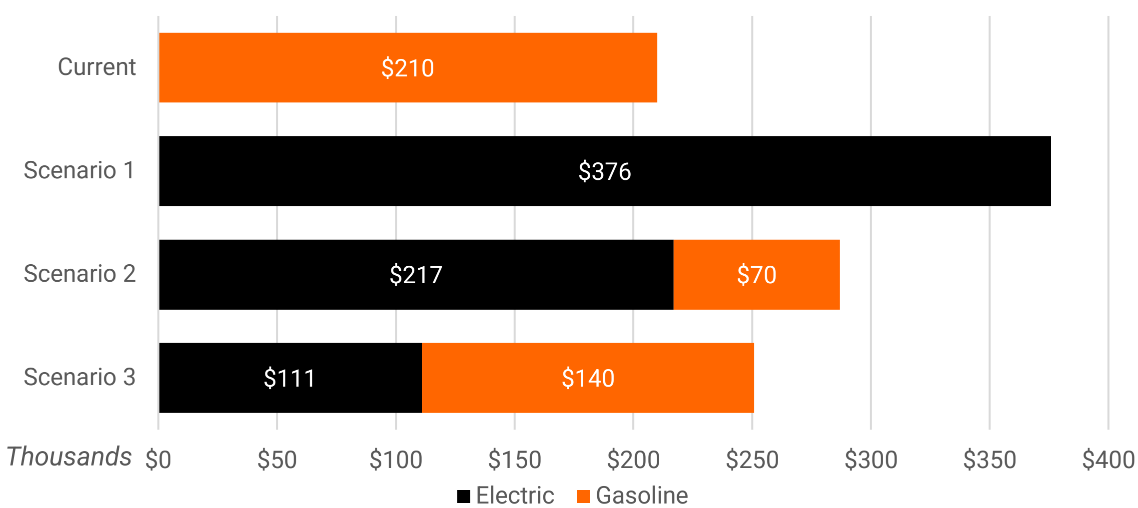
Three recommended scenarios were developed for the Equipment/Support Vehicle fleet. The first scenario commits to the lowest possible emissions, while adding an additional minivan as backup for important operator shift rides in the absence of one vehicle. The second scenario is similar to the first scenario but is cautious about the limitations in operations that can be experienced by minivans. The third scenario attempts to commit to the transition towards zero emissions while limiting the capital cost by reducing the number of EVs, as well as maintaining a cautious approach to emergency backup fleet needs during storms, maintaining enough Gasoline fueled vehicles for this scenario. **Table 6-29** summarizes the recommendations.

TABLE 6-29: SUPPORT VEHICLES FUEL MIX RECOMMENDATIONS

Vehicle Type	Current Scenario		Recommendations					
			Scenario 1: Lowest Emissions (and Lifecycle Cost)		Scenario 2: Operations Limited		Scenario 3: Lowest Capital Cost	
	Gas	EV	Gas	EV	Gas	EV	Gas	EV
Minivan	2	0	0	3	2	0	2	0
SUV	2	0	0	2	0	2	1	1
Pickup Truck	2	0	0	2	0	2	1	1

Transitioning from gasoline to electric vehicles has its cost benefits. Going full electric is currently almost $375 thousand for CATs DR fleet. However, Scenario 3 presents a balanced approach to the support vehicle fleet that is less than $50 thousand more expensive than the current scenario. **Figure 6-16** presents the cost comparisons. Cost assumptions only consider the installation of small commercial chargers for these vehicles, and no additional fuel tanks for any gasoline vehicles.

FIGURE 6-16: SUPPORT VEHICLES ESTIMATED CAPITAL COSTS



When evaluating the estimated emissions output for support vehicles, going all electric is nearly feasible and can be the first part of CATs total fleet to have a low impact overall. Adding electric vehicles is a clear step away from emissions as observable in **Figure 6-17**.

Following a similar pattern, the integration of electric vehicles reduces the overall lifecycle greenhouse gas emissions, although these are still present in all electric scenarios, likely due to lithium mining and transferring demand to local energy sources. See **Figure 6-18** for the comparisons.

FIGURE 6-17: ESTIMATED ANNUAL EMISSIONS PROFILE FOR SUPPORT VEHICLES

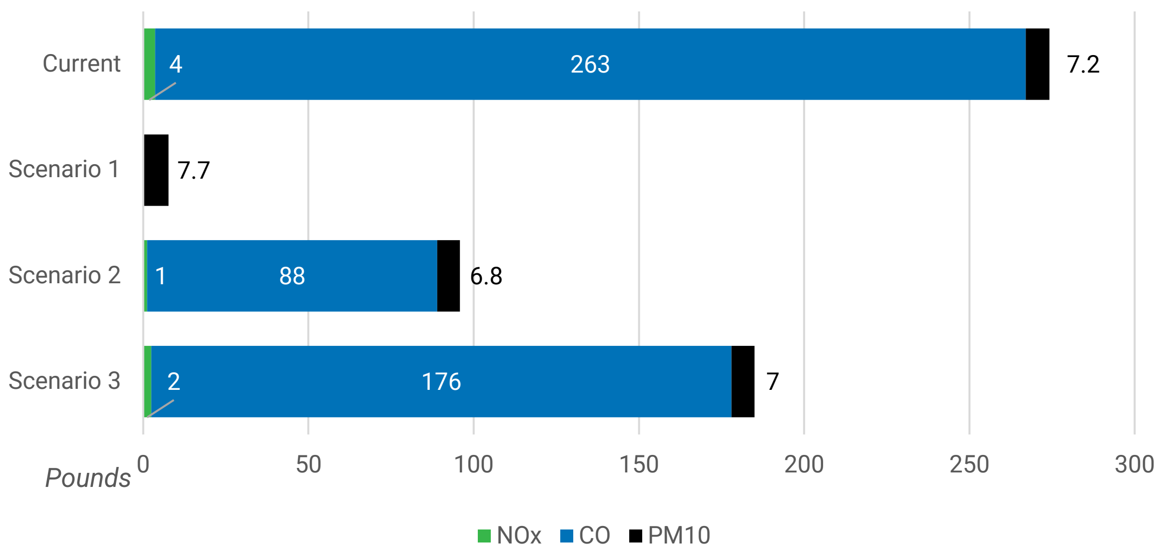
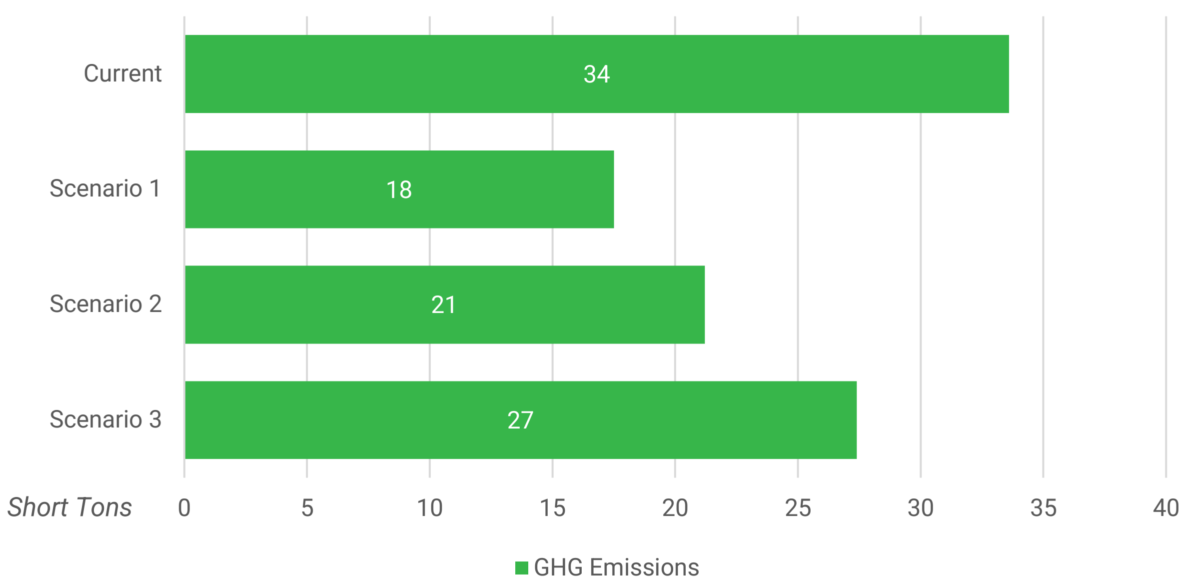


FIGURE 6-18: WELL TO WHEELS LIFECYCLE GREENHOUSE GAS EMISSIONS SUPPORT VEHICLE COMPARISONS



7 FINANCIAL ANALYSIS

Incorporating the findings from the feasibility analysis, this financial analysis examines the same fuel mix scenarios to assist in the preparation of a vehicle replacement plan for fixed-route, paratransit and support vehicles. These financial estimates, in conjunction with input from the Steering Committee, determined the percentage of vehicles desired to be transitioned to ZEV. The resulting vehicle replacement plan, included in the ZEV transition plan, covers ten years to ensure all current vehicles are replaced with the recommended technology based on the percent replacement desired.

Included in the financial analysis are high-level capital cost estimates for the recommended fleet conversion, recommended charging infrastructure, and maintenance/storage facility modifications. In addition, this section provides a review of state and federal funding sources, including FTA's Low or No Emission Grants and the Environmental Protection Agency's (EPA) Community Change Grant Program.

7.1 Financial Plan

Prior to finalizing the vehicle replacement plan and ZEV transition plan, a high-level ten-year financial plan was developed for each scenario by estimating vehicle costs and operating expenses, and assuming all other capital and operating expenses as presented in CAT's FY 2024 Transit Development Plan Annual Progress Report (TDP APR).The Argonne National Laboratory's Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) tool was used to develop capital vehicle cost assumptions for this financial analysis. Additionally, a 2.51% annual inflation rate was assumed to reflect the average annual inflation rate over the past ten years, according to the Bureau of Labor Statistics. Despite these assumptions, this financial analysis does not account for confounding variables such as unforeseen maintenance expenses.

Figure 7-1 summarizes the estimated ten-year total capital expenses for CAT for each fuel mix scenario. Total capital expenses assume each scenario to differ by fleet fuel mix (and associated infrastructure expenses) while all other expenses remain constant. Scenario 4 and the status quo boast the lowest estimated capital expenses, as a fleet with predominately standard internal combustion engine (ICE) vehicles (fueled by diesel and biodiesel) is less expensive than those comprised of other ZEV's. Each of the other scenarios require an extra $5 to $14 million investment over ten years for costlier capital expenses such as battery electric vehicles and charging infrastructure.

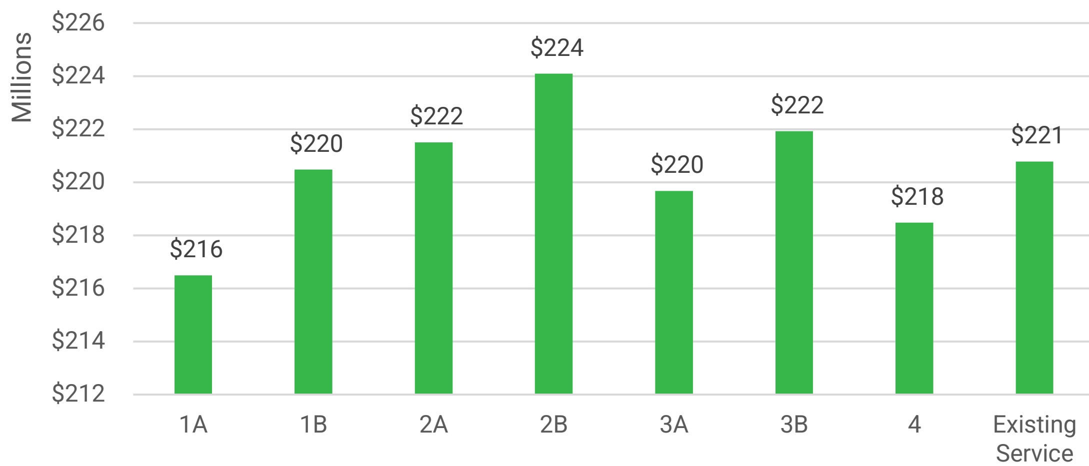
FIGURE 7-1: TOTAL CAPITAL COSTS BY FUEL MIX SCENARIO (2025-2034)

Figure 7-2 summarizes the estimated ten-year total operating expenses for CAT by fuel mix scenario. Total operating expenses assume each scenario to differ by fleet fuel mix (and associated operating expenses) while all other expenses remain constant. Scenarios 2A and 2B boast the lowest estimated operating expenses, as these propose fleets with the lowest levels of diesel consumption, in contrast to the highest levels of diesel consumption experienced with the existing fuel mix, which is projected to cost an additional $14 million over ten years to operate when compared to Scenario 2A.

FIGURE 7-2: TOTAL OPERATING COSTS BY FUEL MIX SCENARIO (2025-2034)

Considering the sum of capital and operating expenses, **Figure 7-3** visualizes the estimated grand total cost for CAT over ten years, by fuel mix scenario. Scenarios 1A and 2A are likely to be the most affordable overall, as the fuel mix for those fleets are comprised by a limited number of battery electric vehicles, a limited number of vehicles exclusively powered by diesel, and do not require on-route charging. For an extra $6.3 million over ten years, the status quo is the most expensive scenario to operate as the predominantly ICE fleet experiences higher operating costs due to the high consumption of diesel fuel.

FIGURE 7-3: TOTAL CAPITAL AND OPERATING COSTS BY FUEL MIX SCENARIO (2025-2034)



7.1.1 Cost Savings

Each proposed fuel mix scenario presents a either a slight increase or a slight decrease in cost savings when compared to the status quo, with an estimated net difference between $-3 and $4 million over ten years depending on the scenario, as indicated in **Table 7-1**. Despite potential savings or increased costs of over a million dollars, each fuel mix scenario offers only differs in cost by a rate of no more than two percent when compared to status quo, depending on the scenario.

Scenario 1A presents the greatest potential cost savings because of its relatively low amounts of capital investment and low amounts of operating expenses associated with a fixed-route fleet with many hybrid vehicles and a demand response fleet with many gasoline vehicles. On the other end of the spectrum, Scenario 2B represents the greatest cost increase due to its high amounts of capital investment required for on-route charging, CNG, vehicles, and battery electric vehicles.

TABLE 7-1: SUMMARY OF COST SAVINGS BY SCENARIO

Scenario	Fuel Mix Scenario	Est. Cost Savings	Percent Savings
1A	Least Harmful Emissions (**No** On-Route Charging)	**$4.3 Million**	2.0%
1B	Least Harmful Emissions (On-Route Charging)	**$0.3 Million**	0.1%
2A	Optimized Vehicle Function (**No** On-Route Charging)	**$-0.7 Million**	-0.3%
2B	Optimized Vehicle Function (On-Route Charging)	**$-3.3 Million**	-1.5%
3A	Balanced Approach (**No** On-Route Charging)	**$1.1 Million**	0.5%
3B	Balanced Approach (On-Route Charging)	**$-1.1 Million**	-0.5%
4	Lowest Capital Cost	**$2.3 Million**	1.1%
Existing Service		$0	0.0%

7.1.2 Vehicles

Listed below are the vehicle cost assumption made for the financial analysis by fuel type. **Table 7-2** documents the assumed capital costs of vehicles and

Table 7-3 documents the assumed operating costs of vehicles.

TABLE 7-2: ASSUMED CAPITAL COSTS OF VEHICLES BY FUEL TYPE (AFLEET TOOL, 2023)

Service Type	Fuel Type	Vehicle Cost
Fixed Route	CNG	$704,000
	Battery Electric	$1,058,000
	Biodiesel	$580,000
	Hybrid	$783,000
	Diesel	$580,000
	Gasoline	$580,000
Demand Response	CNG	$316,000
	Battery Electric	$282,000
	Biodiesel	$181,000
	Diesel	$181,000
	Gasoline	$160,000
Equipment/Support Vehicles	Battery Electric	$74,000
	Gasoline	$45,000

Source: AFLEET Tool Per Unit Cost Assumptions (2023)

TABLE 7-3: ASSUMED OPERATING COSTS OF VEHICLES BY FUEL TYPE*

Service Type	Fuel Type	Cost per Mile
Fixed Route	CNG	$3.18
	Battery Electric	$3.26
	Biodiesel	$3.49
	Hybrid	$2.79
	Diesel	$3.96
	Gasoline	$3.96
Demand Response	CNG	$3.46
	Battery Electric	$2.86
	Biodiesel	$3.91
	Diesel	$3.91
	Gasoline	$3.91
Equipment/Support Van/SUV	Battery Electric	$0.10
	Gasoline	$0.33
Equipment/Support Pickup Truck	Battery Electric	$0.11
	Gasoline	$0.39

**Sources for assumptions include the National Transit Database (2023), FTA/King Co. (2017), HART (2017), King Co. (2018), NREL (2019), FTA/HART/NREL, FTA/King Co., Mountain Line ZEB Plan (2020), Transfort ZEB Plan, ICF 2019 Report (Table II-11), DOE, NREL, and the 2023 Federal Fleet Report*

7.1.3 Infrastructure/Facility Upgrades

Rolled into the overall capital costs estimates for the purpose of this financial analysis, **Table 7-4** outlines infrastructure cost assumptions associated with the implementation of each fuel type.

TABLE 7-4: ASSUMED COSTS OF ALTERNATE FUEL INFRASTRUCTURE (AFLEET, 2023)

Service Type	Infrastructure Type	Per Vehicle Cost	Flat Cost
Fixed Route	CNG Station and Dispensers (Medium)	$66,660	
	Overnight Chargers (and installation)	$11,900	
	On-Route Chargers (and installation)		$163,300*
	Biodiesel Tank and Dispensers		$97,935
Demand Response	CNG Station and Dispensers (Small)	$27,700	
	Overnight Chargers (and installation)	$11,900	

**per location*
Source: 2023 AFLEET Tool

7.1.4 Cost Feasible Plan

Figure 7-4 lists the ten-year operating expenses and revenue sources from CAT's cost feasible plan and **Figure 7-5** lists the ten-year capital expenses and revenue sources from CAT's cost feasible plan. This cost feasible plan from the TDP APR was used as the framework for this financial analysis.

Per the cost feasible plan, the following funding sources contribute to CAT's revenue stream:

- Capital
  - Federal Grants 5307, 5310, 5339
  - Local Match for 5310
- Operating
  - Federal Grant 5311
  - Local Match for 5307, 5310, 5311
  - Federal Grant 5307
  - FDOT Transit Block Grant
  - Transportation Disadvantaged Funding
  - Collier County CAT Enhancements
  - FDOT Match for 5307 and 5310
  - Fare Revenue
  - Other Local Revenues

FIGURE 7-4: CAT OPERATIONS COST FEASIBLE PLAN (2025-2034)

Cost/Revenue			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	10-Year Total
Operating			1	2	3	4	5	6	7	8	9	10	
Operating Cost													
Maintain Existing Service - Fixed Route	Existing		$9,015,510	$9,221,063	$9,431,304	$9,646,337	$9,866,274	$10,091,225	$10,321,305	$10,556,630	$10,797,322	$11,043,501	$99,990,469
Maintain Existing Service - Paratransit	Existing		$7,131,499	$7,294,098	$7,460,403	$7,630,500	$7,804,476	$7,982,418	$8,164,417	$8,350,566	$8,540,958	$8,735,692	$79,095,027
Route 22 Realigned - no cost	Route Realignment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Route 23 Realigned plus freq 60 to 40	Route Realignment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$673,469	$673,469
New Route 25 EW, no change	Route Realignment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Route 25 NS, to Immokalee Rd	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$700,957	$700,957
New Route 27 EW, Immokalee to Randa	Route Realignment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Route 27 NS, Collier 441 to Immok	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,448,282	$1,448,282
Route 121 - Add one AM and one PM	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$288,856	$288,856
Route 11 from 30 to 20 mins	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,155,424	$1,155,424
Route 12 from 90 to 45 mins	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$500,684	$500,684
Route 13 from 40 to 30 min	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$165,226	$165,226
Route 14 from 60 to 30 min	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$481,427	$481,427
Route 15 from 90 to 45 min	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$288,856	$288,856
Route 16 from 90 to 45 min	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$308,113	$308,113
Route 17/18 90 to 45 minutes	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$510,312	$510,312
Route 24 from 85 to 60-min	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Route 11 - Extend Hours to 10:00 PM	Increase Hours of Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$192,571	$192,571
Route 13 - Extend Hours to 10:00 PM	Increase Hours of Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$130,948	$130,948
Route 14 - Extend Hours to 10:00 PM	Increase Hours of Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$130,948	$130,948
Route 17/18 - Extend Hours to 10:00 PM	Increase Hours of Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$237,247	$237,247
Route 19/28 - Extend Hours to 10:00 PM	Increase Hours of Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$111,691	$111,691
New Island Trolley	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,232,452	$1,232,452
New Bayshore Shuttle	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$519,941	$519,941
New Autonomous Circulator	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$392,844	$392,844
New Naples Pier Electric Shuttle	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$616,226	$616,226
Mobility on Demand - Golden Gate	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$736,410	$736,410
Mobility on Demand - North Naples	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$368,205	$368,205
Mobility on Demand - Naples	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$873,571	$873,571
Mobility on Demand - Marco Island	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$490,705	$490,705
Total Operating Costs			**$16,147,009**	**$16,515,161**	**$16,891,707**	**$17,276,837**	**$17,670,749**	**$18,073,642**	**$18,485,721**	**$18,907,196**	**$19,338,280**	**$32,334,557**	**$191,640,860**
Operating Revenues													
Federal Grant 5311	Existing	Federal	$800,153	$818,397	$837,056	$856,141	$875,661	$895,626	$916,047	$936,933	$958,295	$980,144	$8,874,454
Local Match (5311)	Existing	Local	$800,153	$818,397	$837,056	$856,141	$875,661	$895,626	$916,047	$936,933	$958,295	$980,144	$8,874,454
Federal Grant 5307 Operating Assistanc	Existing	Federal	$1,808,252	$1,849,480	$1,891,648	$1,934,777	$1,978,890	$2,024,009	$2,070,157	$2,117,356	$2,165,632	$2,215,008	$20,055,209
Local Match (5307)	Existing	Local	$1,808,252	$1,849,480	$1,891,648	$1,934,777	$1,978,890	$2,024,009	$2,070,157	$2,117,356	$2,165,632	$2,215,008	$20,055,209
Federal Grant 5307 ADA and Preventati	Existing	Federal	$965,946	$987,969	$1,010,495	$1,033,534	$1,057,099	$1,081,201	$1,105,852	$1,131,065	$1,156,854	$1,183,230	$10,713,243
FDOT Transit Block Grant Operating Ass	Existing	State	$1,194,529	$1,221,764	$1,249,620	$1,278,112	$1,307,253	$1,337,058	$1,367,543	$1,398,723	$1,430,614	$1,463,232	$13,248,447
TD Funding	Existing	State	$737,630	$754,448	$771,649	$789,243	$807,237	$825,642	$844,467	$863,721	$883,414	$903,556	$8,181,006
Local Match for FDOT Transit Block Gran	Existing	Local	$1,194,529	$1,221,764	$1,249,620	$1,278,112	$1,307,253	$1,337,058	$1,367,543	$1,398,723	$1,430,614	$1,463,232	$13,248,447
Local TD Funding	Existing	Local	$73,763	$75,445	$77,165	$78,924	$80,724	$82,564	$84,447	$86,372	$88,341	$90,356	$818,101
Collier County CAT Enhancements	Existing	Local	$4,631,560	$4,737,160	$4,845,167	$4,955,637	$5,068,626	$5,184,190	$5,302,390	$5,423,284	$5,546,935	$5,673,405	$51,368,356
Federal Grant 5307 -PM	New	Federal	$1,008,555	$1,031,550	$1,055,069	$1,079,125	$1,103,729	$1,128,894	$1,154,633	$1,180,958	$1,207,884	$1,235,424	$11,185,822
FDOT Match for Federal 5307 and 5310 -	New	State	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Local Match for Federal 5307 and 5310 -	New	Local	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Existing Paratransit Fare Revenue	Existing	Local	$192,157	$196,538	$201,019	$205,603	$210,290	$215,085	$219,989	$225,005	$230,135	$235,382	$2,131,204
Fare Revenue from New/Improved Ser	New	Fare	$0	$0	$0	$0	$0	$0	$0	$0	$0	$808,438	$808,438
Fare Revenue from Existing Services	Existing	Fare	$931,530	$952,769	$974,492	$996,710	$1,019,435	$1,042,678	$1,066,452	$1,090,767	$1,115,635	$1,141,072	$10,331,540
Other Local Revenues	Existing	Other Local Sources	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Local Revenue Required - N	New	Other Local Sources	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Revenue			**$16,147,009**	**$16,515,161**	**$16,891,706**	**$17,276,837**	**$17,670,749**	**$18,073,642**	**$18,485,721**	**$18,907,196**	**$19,338,280**	**$20,587,632**	$171,190,227
Annual Revenues Minus Costs			**($0)**	**($0)**	**($0)**	**($0)**	**($0)**	**($0)**	**($0)**	**($0)**	**($0)**	**($11,746,925)**	**($11,746,927)**

FIGURE 7-5: CAT CAPITAL COST FEASIBLE PLAN (2025-2034)

Cost/Revenue			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	10-Year Total
Capital Costs													
Vehicles			**$2,434,517**	**$1,871,811**	**$4,759,875**	**$2,497,076**	**$1,396,437**	**$977,241**	**$2,879,823**	**$4,030,267**	**$381,881**	**$1,778,313**	**$25,410,250**
Replacement Fixed Route Buses - Maintain Existing Service			$554,063	$1,133,390	$4,057,311	$1,778,493	$606,348	$0	$0	$3,243,873	$1	$606,348	$14,954,612
Replacement Vans - Maintain Existing Paratransit Services			$1,678,977	$686,903	$702,565	$718,583	$734,967	$751,724	$1,922,158	$786,393	$4	$734,967	$8,888,891
Replacement of Support Vehicles			$201,477	$51,518	$0	$0	$55,123	$225,517	$57,665	$0	$1	$55,123	$666,746
Preventative Maintenance			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Route 23 Realigned plus freq 60 to 40			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Increase Frequency on Routes 24 and 121			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
										$0	$0	$0	$0
New Island Trolley			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Bayshore Shuttle			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Autonomous Circulator			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Naples Pier Electric Shuttle			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MOD Service Zones (expanded microtransit)			$0	$0	$0	$0	$0	$0	$0	$0	$381,875	$381,876	$0
Spares for New Service and Improved Existing Service			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Spares for MOD Services			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ADA Service for New Fixed Route Hours			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Capital/Infrastructure			**$2,533,377**	**$5,570,538**	**$13,557,976**	**$570,698**	**$583,710**	**$597,019**	**$610,631**	**$624,553**	**$638,793**	**$653,357**	**$28,035,135**
Shelter Rehab			$40,912	$41,845	$42,799	$43,775	$44,773	$45,794	$46,838	$47,906	$48,998	$50,115	$429,235
Facility			$2,000,000	$5,000,000	$13,000,000								$22,334,797
Bus Shelters			$492,465	$503,693	$515,177	$526,923	$538,937	$551,225	$563,793	$576,648	$589,795	$603,242	$5,221,103
Security - Driver Protection Barriers			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Technology - Avail Replacement			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Technlogy - APC			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Technology - Annunciators			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Technology - Onboard Information Media			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Technology - Farebox Replacement			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Study Santa Barbara Corridor			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$25,000
Study: Regional Service and Fares			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Study I-75 Managed Lanes Express			$0	$25,000	$0	$0	$0	$0	$0	$0	$0	$0	$25,000
Study Everglades City Vanpool			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Capital Costs			**$4,967,894**	**$7,442,349**	**$18,317,852**	**$3,067,774**	**$1,980,147**	**$1,574,260**	**$3,490,454**	**$4,654,820**	**$1,020,674**	**$2,431,670**	**$53,445,385**
Capital Revenues													
Federal Grant 5307 Capital Assistance	Existing	Federal	$2,920,334	$900,000	$13,920,520	$920,520	$941,508	$962,974	$984,930	$1,007,386	$1,030,355	$1,053,847	$27,888,688
Federal Grant 5339 Capital Assistance	Existing	Federal		$5,000,000	$0	$0	$0	$0	$0	$0	$0	$0	$6,000,000
Federal Grant 5339 Capital Assistance	Existing	Federal	$368,583	$376,986	$385,582	$394,373	$403,364	$412,561	$421,968	$431,588	$441,429	$451,493	$3,907,704
Federal Grant 5310 Capital Assistance	Existing	Federal	$1,511,080	$618,213	$632,308	$646,725	$661,470	$676,552	$1,729,943	$707,754	$4	$661,470	$8,000,002
Local Match 5310 Capital Assistance	Existing	Federal	$167,898	$68,690	$70,256	$71,858	$73,497	$75,172	$192,216	$78,639	$0	$73,497	$888,889
Total Capital Revenues			**$4,967,894**	**$6,963,889**	**$15,008,666**	**$2,033,476**	**$2,079,839**	**$2,127,259**	**$3,329,056**	**$2,225,368**	**$1,471,788**	**$2,240,307**	$46,685,283
Annual Revenues Minus Costs			**($0)**	**($478,460)**	**($3,309,186)**	**($1,034,299)**	**$99,692**	**$553,000**	**($161,398)**	**($2,429,452)**	**$451,114**	**($191,363)**	**($6,760,102)**

7.2 Potential Additional Funding

This section provides an overview of the grant opportunities available to fund the vehicle and infrastructure needs related to the transition plan. Match requirements vary so CAT will have to work with its governing board to identify funds to match grants received. Grant opportunities are primarily available through FTA, which has allocated greater funding for the Low- or No-Emission Vehicle Program under Section 5339(c). Other federal agencies also provide similar funding opportunities. These funding sources are summarized in **Table 7-5**. A Detailed summary of each funding program is listed in **Appendix E**.

TABLE 7-5: SUMMARY OF POTENTIAL FUNDING SOURCES FOR ZEV'S

Type	Agency	Funding Program	Funding Available	Funding Eligibility		
				Facilities	Bus Purchase	Charging Infrastructure
Federal	USDOT	Discretionary Grant Program for Charging and Fueling Infrastructure	\$2.5 B (FY23)	✓	✓	✓
Federal	FHWA	Advanced Transportation and Congestion Management Technologies Deployment Program	\$60 M (FY2025)	✓		✓
Federal	USDOT	Charging and Fueling Infrastructure Discretionary Grant Program	\$700 M (FY25)	✓		✓
Federal	FHWA	Advanced Transportation Technologies and Innovative Mobility Deployment	\$60.0 M (FY25)	✓	✓	✓
Federal	DOE	Title XVII Renewable Energy and Efficient Energy Projects Solicitation	\$4.5 B	✓		✓
Federal	FTA	Low or No Emission Vehicle Program	\$1.22 B (FY24)		✓	✓
Federal	FTA	Bus and Bus Facilities Formula Funds	\$604 M (FY24)	✓	✓	
Federal	FTA	Accelerating Innovative Mobility	N/A	✓	✓	✓
Federal	USDOT	Rebuilding American Infrastructure with Sustainability and Equity Grants	\$1.5 B (FY24)	✓		✓
Federal	EPA	Diesel Emissions Reduction Act	\$92.0 M (FY24)		✓	
Federal	IRS	Alternative Fuel Infrastructure Tax Credit	N/A			✓
Federal	IRS	Alternative Fuel Infrastructure Tax Credit	30% tax credit, up to \$100,000			✓
Federal	FTA	Accelerating Innovative Mobility	\$10 M (FY25)			✓
State	FHWA	National Electric Vehicle Infrastructure Formula Program	\$198 M (FY23)			✓
Federal	HUD	Community Development Block Grant (CDBG)	\$ 3B (FY25)	✓		
State	FDOT	FDOT Transportation Alternatives Program	\$80 M (FY25)	✓		✓
Federal	EDA	EDA Economic Adjustment Assistance Program	\$37M (FY25)	✓		
State	DEO	Rural Infrastructure Fund	\$25M (FY25)	✓		

8 IMPLEMENTATION PLAN

Transitioning the fleet to a low or zero-emission fleet may be a desired outcome, yet after evaluating the feasibility of this ideal, the key to achieving such an outcome is in a structured and phased implementation plan that balances operational feasibility, financial sustainability, and environmental impact. This section outlines the key steps, timelines, and strategies for deploying zero-emission technologies, including fleet conversion, infrastructure development, workforce training, and other considerations. By coordinating efforts with stakeholders, securing funding, and leveraging technological advancements, the implementation plan ensures a smooth and efficient transition while maintaining service reliability and performance standards. This implementation plan considers the first ten years of this transition, allowing CAT to be able to pivot in the best possible direction at the end of this first approach. A detailed vehicle replacement plan schedule for the fixed-route, demand response, and support vehicles has been included in **Appendix F**.

8.1 Vehicle Replacement Plan

The ten-year fixed route fleet management plan is based on a partial and gradual transition to a resilient fleet with a diverse fuel mix. This permits CAT to pilot low- and zero-emission vehicles with minimal investment and commitment and allow plenty of time to plan for a complete transition to low- and zero-emission fleet.

The transition commences with a pilot of a battery electric bus followed by a partial transition to multiple low-emission vehicles. At the time of writing, CAT has a total of 30 buses in its fleet of fixed route vehicles, one of which is a battery electric bus. See **Table 8-1** for CAT's fixed-route fleet details.

TABLE 8-1: CAT EXISTING FIXED ROUTE FLEET

Make	Model	Length (ft.)	Quantity
Ford	Villager 7.3L V8	30	2
Freightliner	Legacy	30	1
Gillig	G27B102N4	35	3
	G27D102N4	40	3
	G27E102N2	30	15
	G27E102N2	40	1
	(TBD— Diesel)	30	2
	(TBD— Diesel)	35	2
	(TBD— Electric)	35	1

Table 8-2 shows the fixed-route vehicle replacement plan based upon CAT's estimated vehicle retirement dates. Beyond FTA's default Useful Life Benchmark's guideline of 14 years for the acquisition and retirement of motor buses from a fleet, CAT has its own, more stringent policy on vehicle replacement: replacing its 30-foot buses every 10 years and its larger 35-foot and 40-foot buses every 12 years.

This replacement plan will gradually guide the transition to a low- and zero-emission fleet.

Table 8-2: CAT Fixed Route Vehicle Replacement Plan

Year	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Number of Vehicle Replacements	5	3	5	3	2	2	0	5	4	1

Within the transition plan timeframe, 30 vehicles will be retired and replaced, maintaining a fixed route fleet size of approximately 31 vehicles. The transition plan incorporates low- and zero-emission vehicles by replacing select diesel vehicles at the end of their useful lives.

8.2 Fuel Mix

In order to achieve the desired partial transition to low- and zero-emission fleet with minimal impact on existing infrastructure and operations, a 2034 fuel mix was devised to reflect this. **Figure 8-1** depicts the fuel mix of the current CAT fixed route fleet and **Figure 8-2** depicts the fuel mix of the proposed 2034 CAT fixed route fleet. Two-thirds of the fleet will remain as diesel buses, but the proposed fleet will incorporate approximately six hybrid buses, two battery electric buses, and two gasoline trolley buses.

Figure 8-1: 2025 Fuel Mix

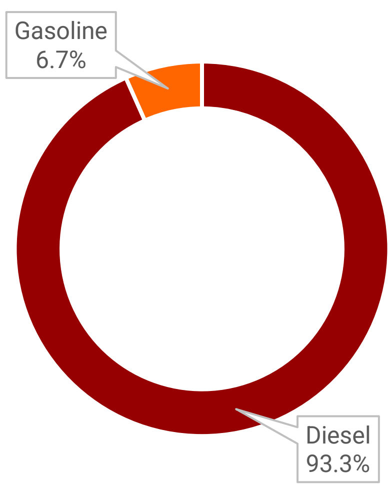
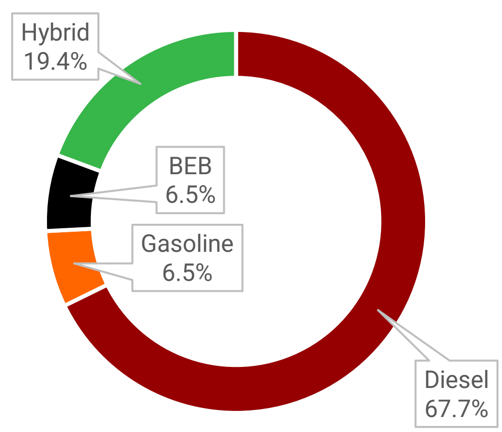


Figure 8-2: 2034 Fuel Mix



8.3 Phasing of Implementation

Based on the vehicle replacement plan and proposed fuel mix presented in this plan, the transition occurs in three phases. It is important to note that internal and external factors may impact the timing and details of this approach. The three main phases of the 2025-2034 transition plan are as follows:

Phase 1: 2025 – 2029 (BEB Pilot)

- Purchase and implement one battery electric bus
- Purchase and implement overnight chargers for two battery electric buses
- Evaluate the feasibility of operating and maintaining the battery electric bus
- Address and resolve any issues with the operation and maintenance of the battery electric bus

Phase 2: 2029 – 2032 (Second BEB)

- Purchase and implement an additional battery electric bus
- Revisit the ZEV Transition Plan based as part of the 2031 TDP major update vehicle replacement plan

Phase 3: 2032 – 2034 (Hybrid Pilot)

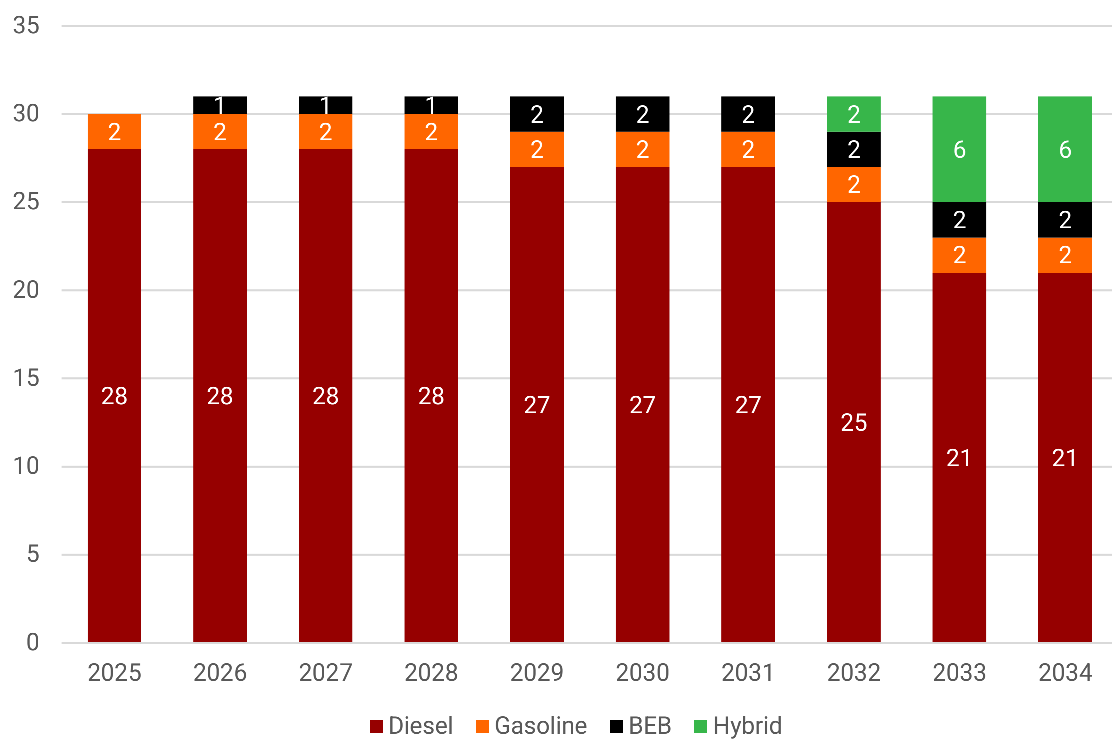
- Purchase and implement six hybrid electric buses
- Evaluate the feasibility of operating and maintaining the hybrid electric buses
- Address and resolve any issues with the operation and maintenance of the hybrid electric buses

Once Phase 3 is complete, CAT will seek to maintain the mixture of vehicle technologies or expand the fleet of low- and zero-emission vehicles. To maintain service quality, no routes will be reconfigured due to the adoption of low- and zero-emission vehicles, but service needs and shifts in transit demand may require changes to route structures.

Figure 8-3 provides an overview of the transition to low- and zero-emission vehicles in the CAT Fleet. The fleet composition transition is provided for planning purposes and reflects the aforementioned vehicle replacement plan and proposed fuel mix.

The actual replacement schedule may differ based on the availability of replacement vehicles as well as CAT's ability to secure funding. The size of the fleet may also change with the implementation of new or different types of services, therefore affecting the transition.

FIGURE 8-3: PROPOSED FIXED ROUTE FLEET COMPOSITION



To achieve the fleet composition mix shown in Figure 8-3, vehicle purchases will occur as provided in **Figure 8-4.** The ten-year plan begins in 2025, which follows the purchase of four new diesel vehicles and one new battery electric bus in 2024.

Figure 8-5 provides planning level cost projections related to the vehicle purchase plan noted in **Figure 8-4.** This implementation plan incorporates the same cost assumptions used in the financial analysis, which were derived from sources that generated estimates for average costs and may not accurately reflect each individual expense an agency may incur.

FIGURE 8-4: PROPOSED FIXED ROUTE VEHICLE PURCHASE PLAN

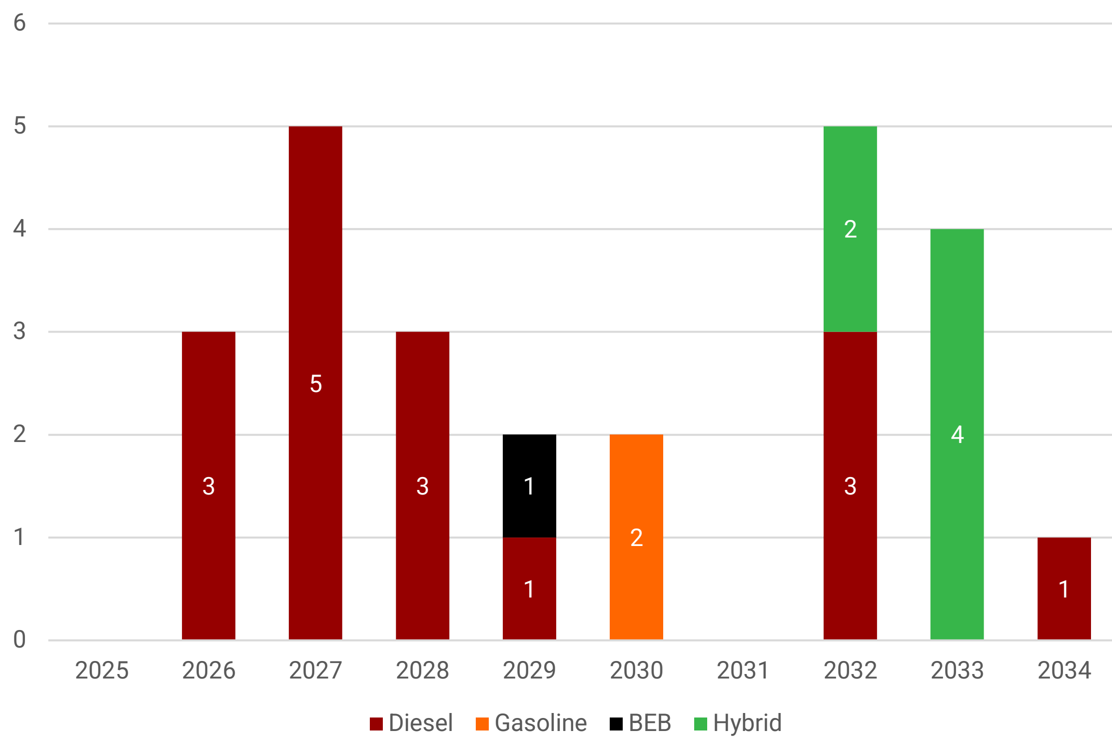
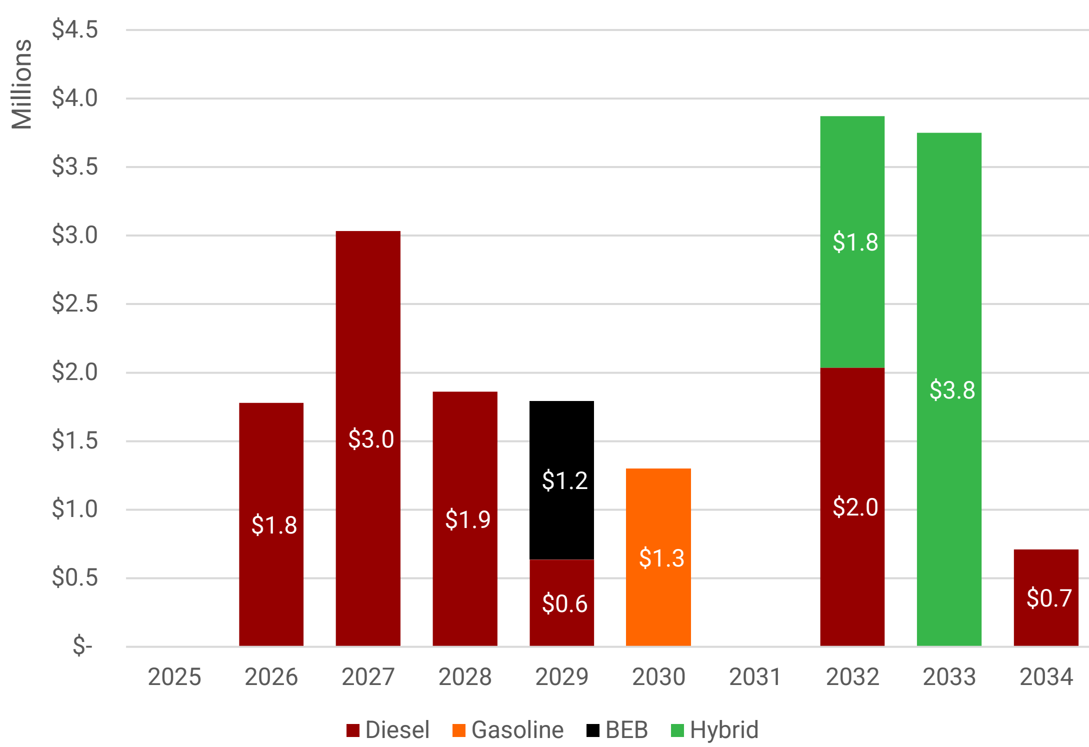


FIGURE 8-5: PROPOSED FIXED ROUTE VEHICLE EXPENSES



8.4 Paratransit and Support Vehicle Fleet Plan

CAT has not identified a suitable alternative fuel for its demand response paratransit services, which typically use cutaway vehicles. Additionally, because CAT paratransit service is carried out by a third-party operator, any changes to the vehicle technology would need to be negotiated with the operator. The agency will continue to review options, but there is no intent to transition the paratransit fleet to a low- or zero-emission technology at this time. This transition plan assumes the replacement of demand response vehicles at the end of their useful lives with vehicles of the same fuel type (diesel or gasoline).

For support vehicles, there are low- or zero-emission vehicle options to replace these vehicles. At the time of writing, CAT has six support vehicles. These vehicles include sedans, vans, and pick-up trucks. While this transition plan focuses on the fixed-route fleet transition, CAT will replace two of its retiring support vans with two battery electric sport utility vehicles (SUVs).

8.5 Financial Plan

Incorporating the CAT's operating and capital expenses and revenues as presented in **Figure 8-6** and **Figure 8-7**, the financial plan in **Figure 8-8** captures the estimated total expenses and revenue for CAT from 2025 to 2034, reflecting the low and zero-emission vehicle transition. **Figure 8-9** zeroes in on vehicle capital and operating expenses, which are the only expenses directly affected by this transition plan.

FIGURE 8-6: CAT OPERATIONS COST FEASIBLE PLAN (2025-2034)

Cost/Revenue			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	10-Year Total
Operating			1	2	3	4	5	6	7	8	9	10	
Operating Cost													
Maintain Existing Service - Fixed Route	Existing		$9,015,510	$9,221,063	$9,431,304	$9,646,337	$9,866,274	$10,091,225	$10,321,305	$10,556,630	$10,797,322	$11,043,501	$99,990,469
Maintain Existing Service - Paratransit	Existing		$7,131,499	$7,294,098	$7,460,403	$7,630,500	$7,804,476	$7,982,418	$8,164,417	$8,350,566	$8,540,958	$8,735,692	$79,095,027
Route 22 Realigned - no cost	Route Realignment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Route 23 Realigned plus freq 60 to 40	Route Realignment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$673,469	$673,469
New Route 25 EW, no change	Route Realignment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Route 25 NS, to Immokalee Rd	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$700,957	$700,957
New Route 27 EW, Immokalee to Randa	Route Realignment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Route 27 NS, Collier 441 to Immok	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,448,282	$1,448,282
Route 121 - Add one AM and one PM	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$288,856	$288,856
Route 11 from 30 to 20 mins	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,155,424	$1,155,424
Route 12 from 90 to 45 mins	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$500,684	$500,684
Route 13 from 40 to 30 min	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$165,226	$165,226
Route 14 from 60 to 30 min	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$481,427	$481,427
Route 15 from 90 to 45 min	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$288,856	$288,856
Route 16 from 90 to 45 min	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$308,113	$308,113
Route 17/18 90 to 45 minutes	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$510,312	$510,312
Route 24 from 85 to 60-min	Increase Frequency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Route 11 - Extend Hours to 10:00 PM	Increase Hours of Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$192,571	$192,571
Route 13 - Extend Hours to 10:00 PM	Increase Hours of Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$130,948	$130,948
Route 14 - Extend Hours to 10:00 PM	Increase Hours of Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$130,948	$130,948
Route 17/18 - Extend Hours to 10:00 PM	Increase Hours of Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$237,247	$237,247
Route 19/28 - Extend Hours to 10:00 PM	Increase Hours of Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$111,691	$111,691
New Island Trolley	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,232,452	$1,232,452
New Bayshore Shuttle	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$519,941	$519,941
New Autonomous Circulator	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$392,844	$392,844
New Naples Pier Electric Shuttle	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$616,226	$616,226
Mobility on Demand - Golden Gate	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$736,410	$736,410
Mobility on Demand - North Naples	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$368,205	$368,205
Mobility on Demand - Naples	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$873,571	$873,571
Mobility on Demand - Marco Island	Add New Service		$0	$0	$0	$0	$0	$0	$0	$0	$0	$490,705	$490,705
Total Operating Costs			**$16,147,009**	**$16,515,161**	**$16,891,707**	**$17,276,837**	**$17,670,749**	**$18,073,642**	**$18,485,721**	**$18,907,196**	**$19,338,280**	**$32,334,557**	**$191,640,860**
Operating Revenues													
Federal Grant 5311	Existing	Federal	$800,153	$818,397	$837,056	$856,141	$875,661	$895,626	$916,047	$936,933	$958,295	$980,144	$8,874,454
Local Match (5311)	Existing	Local	$800,153	$818,397	$837,056	$856,141	$875,661	$895,626	$916,047	$936,933	$958,295	$980,144	$8,874,454
Federal Grant 5307 Operating Assistanc	Existing	Federal	$1,808,252	$1,849,480	$1,891,648	$1,934,777	$1,978,890	$2,024,009	$2,070,157	$2,117,356	$2,165,632	$2,215,008	$20,055,209
Local Match (5307)	Existing	Local	$1,808,252	$1,849,480	$1,891,648	$1,934,777	$1,978,890	$2,024,009	$2,070,157	$2,117,356	$2,165,632	$2,215,008	$20,055,209
Federal Grant 5307 ADA and Preventati	Existing	Federal	$965,946	$987,969	$1,010,495	$1,033,534	$1,057,099	$1,081,201	$1,105,852	$1,131,065	$1,156,854	$1,183,230	$10,713,243
FDOT Transit Block Grant Operating Ass	Existing	State	$1,194,529	$1,221,764	$1,249,620	$1,278,112	$1,307,253	$1,337,058	$1,367,543	$1,398,723	$1,430,614	$1,463,232	$13,248,447
TD Funding	Existing	State	$737,630	$754,448	$771,649	$789,243	$807,237	$825,642	$844,467	$863,721	$883,414	$903,556	$8,181,006
Local Match for FDOT Transit Block Gran	Existing	Local	$1,194,529	$1,221,764	$1,249,620	$1,278,112	$1,307,253	$1,337,058	$1,367,543	$1,398,723	$1,430,614	$1,463,232	$13,248,447
Local TD Funding	Existing	Local	$73,763	$75,445	$77,165	$78,924	$80,724	$82,564	$84,447	$86,372	$88,341	$90,356	$818,101
Collier County CAT Enhancements	Existing	Local	$4,631,560	$4,737,160	$4,845,167	$4,955,637	$5,068,626	$5,184,190	$5,302,390	$5,423,284	$5,546,935	$5,673,405	$51,368,356
Federal Grant 5307 -PM	New	Federal	$1,008,555	$1,031,550	$1,055,069	$1,079,125	$1,103,729	$1,128,894	$1,154,633	$1,180,958	$1,207,884	$1,235,424	$11,185,822
FDOT Match for Federal 5307 and 5310 -	New	State	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Local Match for Federal 5307 and 5310 -	New	Local	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Existing Paratransit Fare Revenue	Existing	Local	$192,157	$196,538	$201,019	$205,603	$210,290	$215,085	$219,989	$225,005	$230,135	$235,382	$2,131,204
Fare Revenue from New/Improved Ser	New	Fare	$0	$0	$0	$0	$0	$0	$0	$0	$0	$808,438	$808,438
Fare Revenue from Existing Services	Existing	Fare	$931,530	$952,769	$974,492	$996,710	$1,019,435	$1,042,678	$1,066,452	$1,090,767	$1,115,635	$1,141,072	$10,331,540
Other Local Revenues	Existing	Other Local Sources	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Local Revenue Required - N	New	Other Local Sources	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Revenue			**$16,147,009**	**$16,515,161**	**$16,891,706**	**$17,276,837**	**$17,670,749**	**$18,073,642**	**$18,485,721**	**$18,907,196**	**$19,338,280**	**$20,587,632**	$171,190,227
Annual Revenues Minus Costs			**($0)**	**($0)**	**($0)**	**($0)**	**($0)**	**($0)**	**($0)**	**($0)**	**($0)**	**($11,746,925)**	**($11,746,927)**

FIGURE 8-7: CAT CAPITAL COST FEASIBLE PLAN (2025-2034)

Cost/Revenue			2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	10-Year Total
Capital Costs													
Vehicles			**$2,434,517**	**$1,871,811**	**$4,759,875**	**$2,497,076**	**$1,396,437**	**$977,241**	**$2,879,823**	**$4,030,267**	**$381,881**	**$1,778,313**	**$25,410,250**
Replacement Fixed Route Buses - Maintain Existing Service			$554,063	$1,133,390	$4,057,311	$1,778,493	$606,348	$0	$0	$3,243,873	$1	$606,348	$14,954,612
Replacement Vans - Maintain Existing Paratransit Services			$1,678,977	$686,903	$702,565	$718,583	$734,967	$751,724	$1,922,158	$786,393	$4	$734,967	$8,888,891
Replacement of Support Vehicles			$201,477	$51,518	$0	$0	$55,123	$225,517	$57,665	$0	$1	$55,123	$666,746
Preventative Maintenance			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Route 23 Realigned plus freq 60 to 40			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Increase Frequency on Routes 24 and 121			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
										$0	$0	$0	$0
New Island Trolley			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Bayshore Shuttle			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Autonomous Circulator			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Naples Pier Electric Shuttle			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MOD Service Zones (expanded microtransit)			$0	$0	$0	$0	$0	$0	$0	$0	$381,875	$381,876	$0
Spares for New Service and Improved Existing Service			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Spares for MOD Services			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ADA Service for New Fixed Route Hours			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Capital/Infrastructure			**$2,533,377**	**$5,570,538**	**$13,557,976**	**$570,698**	**$583,710**	**$597,019**	**$610,631**	**$624,553**	**$638,793**	**$653,357**	**$28,035,135**
Shelter Rehab			$40,912	$41,845	$42,799	$43,775	$44,773	$45,794	$46,838	$47,906	$48,998	$50,115	$429,235
Facility			$2,000,000	$5,000,000	$13,000,000								$22,334,797
Bus Shelters			$492,465	$503,693	$515,177	$526,923	$538,937	$551,225	$563,793	$576,648	$589,795	$603,242	$5,221,103
Security - Driver Protection Barriers			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Technology - Avail Replacement			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Technlogy - APC			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Technology - Annunciators			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Technology - Onboard Information Media			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Technology - Farebox Replacement			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Study Santa Barbara Corridor			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$25,000
Study: Regional Service and Fares			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Study I-75 Managed Lanes Express			$0	$25,000	$0	$0	$0	$0	$0	$0	$0	$0	$25,000
Study Everglades City Vanpool			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Capital Costs			**$4,967,894**	**$7,442,349**	**$18,317,852**	**$3,067,774**	**$1,980,147**	**$1,574,260**	**$3,490,454**	**$4,654,820**	**$1,020,674**	**$2,431,670**	**$53,445,385**
Capital Revenues													
Federal Grant 5307 Capital Assistance	Existing	Federal	$2,920,334	$900,000	$13,920,520	$920,520	$941,508	$962,974	$984,930	$1,007,386	$1,030,355	$1,053,847	$27,888,688
Federal Grant 5339 Capital Assistance	Existing	Federal		$5,000,000	$0	$0	$0	$0	$0	$0	$0	$0	$6,000,000
Federal Grant 5339 Capital Assistance	Existing	Federal	$368,583	$376,986	$385,582	$394,373	$403,364	$412,561	$421,968	$431,588	$441,429	$451,493	$3,907,704
Federal Grant 5310 Capital Assistance	Existing	Federal	$1,511,080	$618,213	$632,308	$646,725	$661,470	$676,552	$1,729,943	$707,754	$4	$661,470	$8,000,002
Local Match 5310 Capital Assistance	Existing	Federal	$167,898	$68,690	$70,256	$71,858	$73,497	$75,172	$192,216	$78,639	$0	$73,497	$888,889
Total Capital Revenues			**$4,967,894**	**$6,963,889**	**$15,008,666**	**$2,033,476**	**$2,079,839**	**$2,127,259**	**$3,329,056**	**$2,225,368**	**$1,471,788**	**$2,240,307**	$46,685,283
Annual Revenues Minus Costs			**($0)**	**($478,460)**	**($3,309,186)**	**($1,034,299)**	**$99,692**	**$553,000**	**($161,398)**	**($2,429,452)**	**$451,114**	**($191,363)**	**($6,760,102)**

Figure 8-8: Proposed CAT Financial Plan

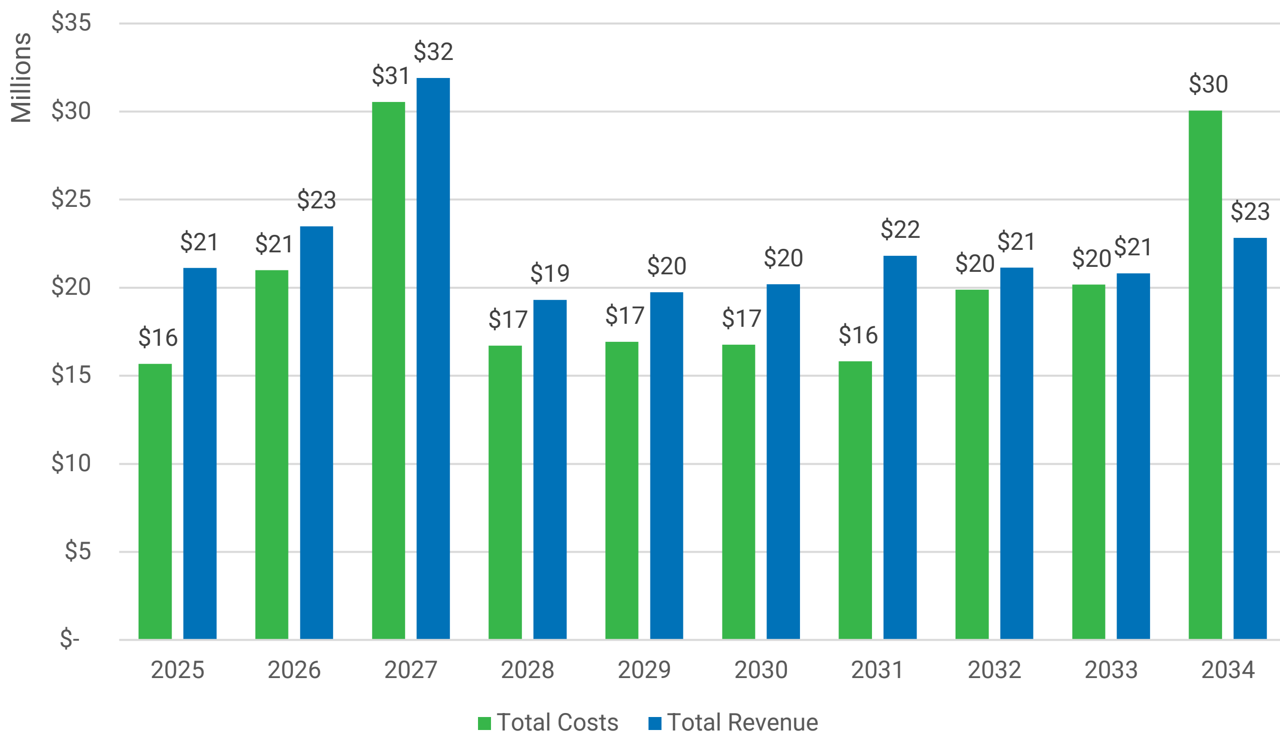
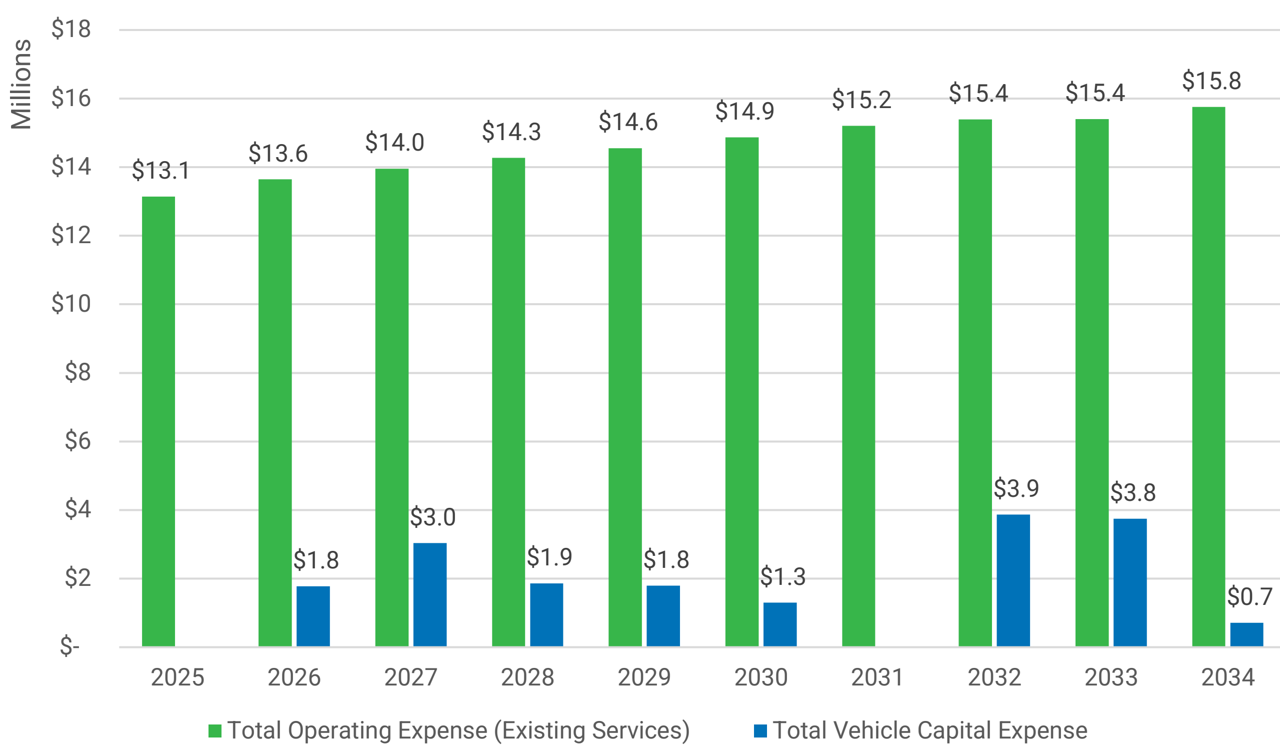


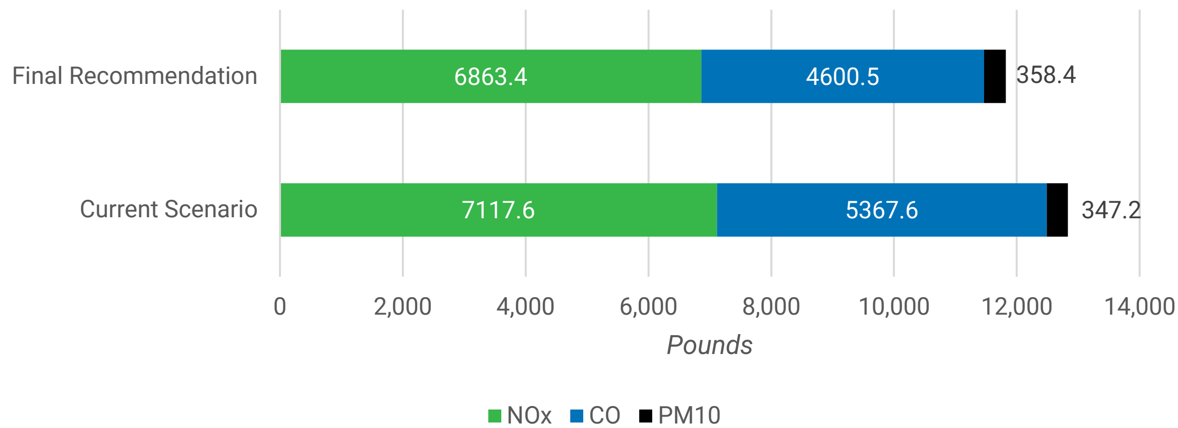
Figure 8-9: CAT ZEV 2025-2034 Transition Plan Total Fixed Route Vehicle Capital and Operating Expenses



8.6 Emissions Reduction

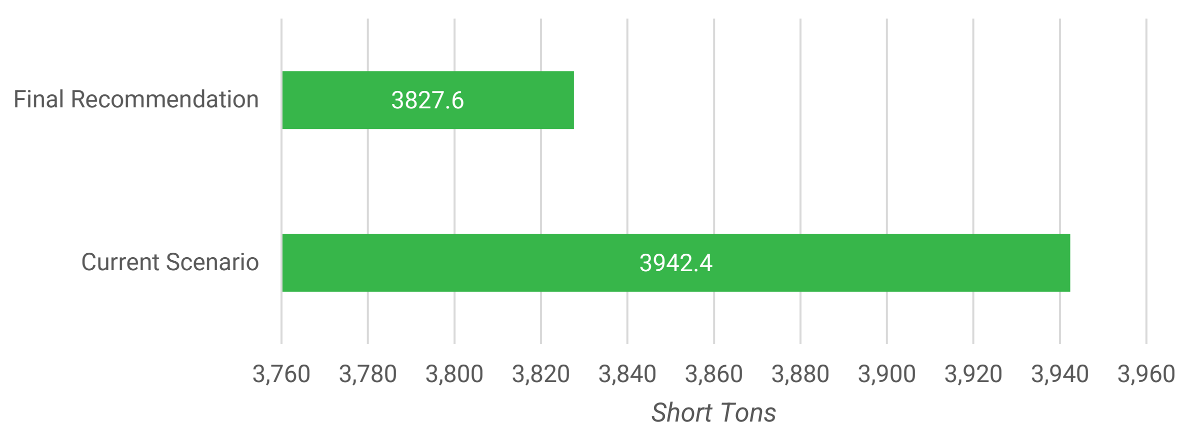
Based on the final transition approach, the following emissions profiles were estimated to understand what the overall emissions would look like compared to the current scenario. Emissions profile is based on previously described emission references found in Section 6.4.1.5 regarding NOx, CO, and PM10. **Figure 8-10** compares the reduction in pounds of annual emissions output for fixed route vehicles in the current scenario and in the transition scenario. **Figure 8-11** compares the reduction in short tons of lifecycle greenhouse gas (GHG) emissions for fixed route vehicles in the current scenario and in the transition scenario.

FIGURE 8-10: ANNUAL EMISSIONS PROFILE COMPARISON FOR THE FINAL RECOMMENDATION OF FIXED ROUTE VEHICLES



It is expected that a net annual reduction of about 1,000 pounds of harmful emissions will be experienced as a result of the current transition over the fixed route fleet.

FIGURE 8-11: WELL TO WHEELS LIFECYCLE GREENHOUS GAS COMPARISON FOR THE FINAL RECOMMENDATION OF FIXED ROUTE VEHICLES

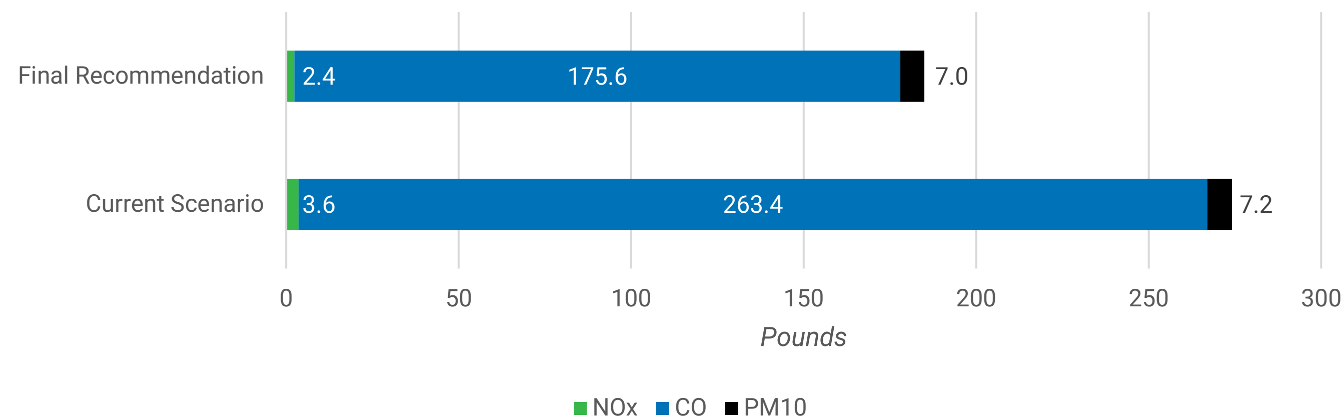


It is expected that a reduction of about 114 short tons of greenhouse gas emissions will be saved over the lifecycle of the fixed route fleet as a result of the current transition.

Since no demand response vehicles are planned for transition in this plan, no comparison in emissions reduction is presented. It is estimated that the output of harmful emissions from the demand response fleet is about 2,560 pounds annually, while the total lifecycle greenhouse gas emissions for this fleet is estimated at almost 700 short tons.

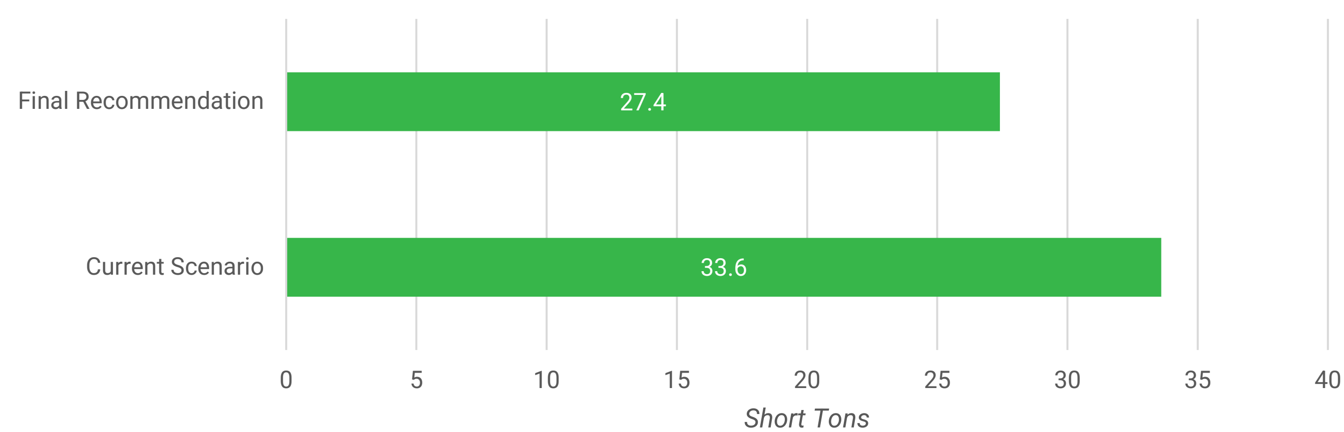
Figure 8-12 compares the reduction in pounds of annual emissions output for support vehicles in the current scenario and in the transition scenario. **Figure 8-13** compares the reduction in short tons of lifecycle greenhouse gas (GHG) emissions for support vehicles in the current scenario and in the transition scenario.

FIGURE 8-12: ANNUAL EMISSIONS PROFILE COMPARISON FOR THE FINAL RECOMMENDATION OF SUPPORT VEHICLES



It is expected that a net annual reduction of about 90 pounds of harmful emissions will be experienced as a result of the current transition over the support vehicle fleet.

FIGURE 8-13: WELL TO WHEELS LIFECYCLE GREENHOUS GAS COMPARISON FOR THE FINAL RECOMMENDATION OF SUPPORT VEHICLES



It is expected that a reduction of about 6 short tons of greenhouse gas emissions will be saved over the lifecycle of the support vehicle fleet as a result of the current transition.

In total, it is expected that the current transition will amount to a decrease in harmful emissions of about 1,100 pounds annually, and about 120 short tons of greenhouse gas emissions over the lifecycle of CAT's entire fleet.

8.7 Facilities Recommendations

A review of CAT's Operations Facility was undertaken to understand what a low- and zero-emission transition would require and how it would be physically implemented at CAT's various facilities.

The Operations Facility, located on Radio Road, will be undergoing a facility reconfiguration in the near future which will replace the maintenance building. At approximately 8 acres, this facility currently houses the full fleet, administration, operations, and maintenance functions. Considerations for the new maintenance facility include added space for the inclusion of spare parts for electric vehicles. It is expected that the reconfiguration will provide for a total of 40 bus parking spots, two of which have been explicitly identified for electric charging capabilities. These spots are located at an adequate distance from the fueling depot. It is recommended that CAT look into the possibility of an additional ten spots beyond these two that could be transformed into electric charging spots if necessary. The facility is otherwise limited to the expansion of additional electric bus charging spots. Fast charging would best be recommended under the canopy structure where buses stop during layovers. The inclusion of a CNG fueling station would be challenging under the new configuration and should only be considered if CNG becomes a viable option for this facility. Based on the future configuration, CNG would best be delivered to the facility for on-site dispensing. The inclusion of biodiesel would require installing an additional fuel storage tank near the fueling depot and reconfiguring the dispensers. This would not be an intensive reconfiguration of the facility area.

8.8 Workforce Training Considerations

As CAT shifts toward an alternative fuel future, workforce training will be essential to ensure a smooth and timely transition. The training requirements will differ based on each position and current skill level.

By following the prompts from FTA's *Workforce Evaluation Tool*, CAT maintenance and administration staff can strategically assess the impact of the transition to low- and zero-emission technologies on the current workforce. The following information outlines the findings and conclusions derived from using the tool.

First, the training needs for various CAT employee groups were identified.

- **Training Instructors** | CAT will employ a train-the-trainer approach to ensure all technicians and maintenance employees receive the training that they need. Technicians who provide training to other Breeze technicians will require training related to all aspects of the new skills required for the individuals that they train.
- **Mechanics and Technicians** | Identified through the agency interviews as the group with the most impact on a low- and zero-emission transition's success, the speed with which these staff members adapt to working with the new technologies is critical. Their transition impacts the speed with which vehicles are returned to revenue service. For these reasons, the most intensive training needs will be related to the mechanic and technician staff.

At present, none of the mechanic and technician staff have been trained in electric vehicle needs. CAT is committed to training current staff as opposed to replacing staff to acquire these skills.

CAT intends to secure training as part of the purchase price of the vehicles. CAT staff should take full advantage of this training and any other training offered by the manufacturer. Most likely, a subset of the current workforce in this department will be trained first and then they will train the other members of the team. Any additional employee training needed beyond the manufacturer training will be acquired and paid for by CAT.

- **Operators** | In order to ensure the best fuel economy, operators will be trained on how to best operate the vehicles. Buses will be purchased with feedback mechanisms on the dashboard. Typically, manufacturers do not offer operator training so training will be conducted internally.
- **Other Staff** | It is not anticipated that any other staff will need to be trained on the new technologies beyond basic safety training.

Second, CAT will operate with the following policies in mind:

- **Displacement Prevention** | If certain technicians or mechanics are not interested in training on the electrical components of the vehicles (e.g., due to impending retirement), they will not be penalized by the agency.
- **Charging Protocols** | A charging protocol will be established for and evaluated when the vehicles are put into operation

8.9 Monitoring and Evaluation Strategy

The following strategy is proposed to CAT as a way to identify key performance indicators that should be tracked and analyzed to evaluate vehicle performance. The goal of a monitoring and evaluation strategy is to compare hybrid, battery electric, and conventional diesel technology vehicle performance.

The National Renewable Energy Laboratory (NREL) tracks the performance of low- and zero-emission buses for several transit agencies across the nation. The proposed strategy below follows the template used by NREL, which tracks progress over time toward meeting the various technical targets set by the Department of Energy (DOE) and the U.S. Department of Transportation (USDOT).

To support data collection, CAT should negotiate with bus manufacturers during the purchase process for manufacturers to share data that is being collected on the vehicle. There is valuable information being collected and can be used to support these monitoring and evaluation efforts.

To ensure that the data generates meaningful analysis the following points should be considered:

- Keep separate data for each technology type: diesel, hybrid, and battery electric vehicles; revenue vehicles separate from support vehicles. This data should include:
    - Miles
    - Revenue hours
    - Miles between road calls for all types of breakdowns and for propulsion-related breakdowns
    - Fuel cost/revenue mile
    - Maintenance cost/revenue mile

    - Bus availability rate (percentage of days the buses are available as a percentage of days that the buses are planned for passenger service)
    - Fuel economy (in diesel gallon equivalents for battery electric buses)
- Generate the following analytics in a biannual report:
    - Data summary
    - Total miles and hours for each technology type
    - Average monthly mileage for each bus within each technology type
    - Availability Analysis
        - Days available
        - Days unavailable
        - Reason for unavailability
    - Fuel Economy and Cost Analysis
        - Miles per diesel gallon equivalent for battery electric buses compared to miles per gallon for hybrid buses
        - Fuel/electricity cost per mile for each technology type
    - Roadcall Analysis
        - Compare total miles between roadcalls for each technology type
        - Compare total miles between propulsion roadcalls for each technology type
    - Maintenance Analysis
        - Compare total cost of parts and hours of labor per mile for each bus under each technology type
        - Compare the maintenance types by technology types
    - Generate a summary of findings and comparisons for each analysis
- Review and report monitoring and evaluation biannually to transit agency leadership

APPENDIX A STEERING COMMITTEE MEETING SUMMARIES

Steering Committee #1 – Thursday January 23, 2025

Meeting Summary

Attendees:

Dusty Hansen, Collier MPO

Omar Deleon, Collier County PTNE

Yousi Cardesco, Collier County PTNE

Chad Ward, Collier County Pollution Control Manager

Tonia Selmeski, Collier County Community Planning & Resiliency

Wally Blain, Benesch

Juan Suarez, Benesch

1. Introductions
    - Members made introductions and provided a description of their roles and responsibilities.
    - A broad range of experience and interests are represented on the steering committee that will provide a comprehensive assessment of the analysis and recommendations for the ZEV Transition Plan.
2. Review of Scope and Schedule (See attached Schedule)
    - Benesch briefly provided an overview of the scope with an overview of current activities and activities to be completed.
    - Regarding the coordination with the local electricity providers, Tonia mentioned that she could provided contact information for the Lee County Electric CoOp (LCEC).
3. State of Zero Emission Vehicles
    - Benesch provided an overview of the alternative fuel types that were assessed for the ZEV study, including Battery Electric, Hydrogen Fuel Cell, Diesel Electric Hybrid, and Compressed Natural Gas, noting the current conditions and limitations of each.
    - Information regarding recent trends by transit agencies according to the APTA database were presented that showed roughly 50% of transit fleet vehicles are fueled by alternative fuels.
    - The national trends for alternative fuel adoption were similar to those for Florida transit agencies. While the percentages varied, CNG is the most commonly used alternative fuel. Battery Electric is a small percentage of the alternative fuels used, but a larger percentage in Florida than nationwide.
    - Yousi asked if there was any information available regarding the experience of peer agencies in using hybrid electric vehicles. CAT has hybrid vehicles in 2010, but didn't find the savings to be as great as expected. Additional information was provided later during the Peer Agency item regarding this question.
    - Chad asked if emissions would be a consideration in making a recommendation for the ZEV study As a Zero Emission Transition Plan, this should be a consideration along with the cost for implementing.
    - Juan shared that the AFLEET tool provides general estimates for costs as well as emissions resulting from the fleet characteristics. Benesch will incorporate additional details during the upcoming steering committee meeting to discuss the feasibility analysis.

- Dusty mentioned that the State of ZEV chapter included a high-level summary of emissions for each fuel type in a comparative format.

4. Current Local, State, Regional initiatives
   - Bensch provided an overview of the local, state, and regional initiatives that are currently in place. A review of these initiatives has provided some key takeaways and considerations for the study team to consider.
   - Available funding options were also discussed. Chad asked if the federal grant programs had a local match requirement.
   - Omar indicated that there is usually a 20% local match requirement for federal grants. However, in Florida there is a toll credit program that can be used to offset some or all of the local match requirements. Specific details of grant funding would need to be worked out with FDOT for specific funding requests.
5. Peer Agency Interviews
   - Benesch provided a summary of the selected peer agencies and how they compare with CAT.
   - Yousi asked in JTA (Jacksonville) was considered as a peer agency since they have discussed and considered switching to electric in the near future.
   - Benesch will enquire about adding them for the peer interviews. This would be a good consideration since not all of the selected peer agencies have responded to the initial request.
   - Results from the PSTA interview were shared. Key takeaways included the need to have a diverse mix of fuels for Florida communities given the need to address storm recovery efforts. Flooding and water intrusion were strong considerations for avoiding in-road induction charging.
   - CNG is seen as a more reliable option based on fewer maintenance and operational challenges. However, it is a higher cost alternative.
   - An initiative previously led by the former Fleet Director evaluated conversion to CNG. Estimates at that time were $800,000 for construction of a refueling station. Recent information suggest that Waste Management may have a CNG fueling station in Collier County. Benesch will look into the current status of this and identify if this is an opportunity for consideration during the feasibility analysis.
6. Discussion: What does this study need to include to be successful?
   - Previous discussion during the meeting identified two topics to consider as the study progresses.
      i. Analysis of the cost and financial feasibility. It will be important to have a realistic timeline for implementation.
      ii. As a Zero Emissions Study, consideration of emission reduction should be included and not merely cost-savings for identifying a recommended alternative
7. Upcoming Meetings (dates for discussion)
   - The group agreed that February 13th would work for scheduling the next meeting.
   - There are known conflicts for March 13th. Benesch will send an meeting poll out to identify a tentative time for the third meeting.

Zero Emissions Transition Plan

Steering Committee #2 Agenda – Thursday February 13, 2025

Meeting Summary

Attendees:

Dusty Hansen, Collier MPO

Omar Deleon, Collier County PTNE

Yousi Cardesco, Collier County PTNE

Alex Showalter, Collier County PTNE

Chad Ward, Collier County Pollution Control Manager

Tonia Selmeski, Collier County Community Planning & Resiliency

Wally Blain, Benesch

Juan Suarez, Benesch

Agenda

8. Peer Agency Interview Updates
9. Outreach to Electricity Providers
10. Feasibility Review
11. Financial Analysis
12. Discussion:
13. Upcoming Meetings

Summary

- Benesch provided a status update on the peer agency interviews. The response from ECAT indicated that receipt of vehicles was delayed and they have not been able to implement any alternative fuels. The interview with LeeTran was completed on February 7^{th}. Much of the feedback received was focused on the mileage limitations observed with first generation propane buses. Experience with hybrid buses did not have the same limitations, but these were best suited for long distance express routes.
- An interview with JTA is scheduled based on direction previously provided by the Steering Committee. An additional interview has also been set up with the City of Hallandale Beach.
- Initial contact was made with both FPL and LCEC for evaluating current electrical service and an assessment of needed upgrades to support a conversion to battery electric buses.
- An overview of the assumptions and considerations that fed into the feasibility analysis was presented. In describing the results of the feasibility analysis, Benesch provided an overview of the fixed route service blocks that would be feasible based on the assumptions. An assessment was completed based on current expectations, especially in regards to battery life, as well as an extrapolated evaluation based on improved battery conditions under assumed future conditions starting 10-years in the future.
- Based on the assumptions and assessment of fuel technologies, four scenarios were developed to identify potential fleet mix options using the various alternative fuels.
- Yousi asked about the impacts to maintenance if multiple fuel types were involved as well as the need to maintain multiple additional spare vehicles for each fuel source. Any change or addition of new fuel sources will require additional training and equipment to support fleet operations. Adding multiple fuel sources complicates the need for additional training and infrastructure and could result in higher costs.
- Omar mentioned that in conversations with Collier County Fleet, that availability of bio-diesel fuels s a primary concern.
- The team reviewed the recommendations for each scenario which include a mix of fueled vehicles for the fixed route fleet, demand response, and support vehicles.

- Based on the mix of fuels from each scenario, anticipated capital costs, annual emissions, and lifecycle emissions were presented.
- Alex asked about the assumptions supporting the feasibility results for the battery electric buses. The analysis used an assumption 420KwH for the total battery energy of a 35' bus. CAT currently has a spec sheet for a GILLIG bus on order that has 686KwH of energy based on a 7-battery pack. Alex asked if changing this assumption would affect the number of potentially feasible service blocks.
- Benesch will evaluate the assumptions used and provide feedback regarding impacts to the feasibility analysis and results from the scenario recommendations.
- The team also reviewed the initial results from the financial analysis which looked at initial capital costs and 10-year operating costs.
- When considering a preference for transitioning the fleet to zero emissions, several topics for consideration were raised which included.
    - Added costs for multiple fuel types
    - Need to carrying additional spare vehicles as backups for each fuel type.
    - Consideration of vehicle availability during storm emergencies or other times when power may be out for an extended period.
- The group did feel that converting some of the support vehicles to battery/electric could be a good test case for easing into a vehicle transition.
- Chad noted that much of the feedback from the peer interviews seemed to focus on the negative impacts to maintenance. Juan agreed that much of the feedback was influenced by maintenance representatives and demonstrated the somewhat experimental transition that some agencies had experienced. Feedback from non-maintenance staff were more favorable. PSTA for example mentioned that their experience suggested the vehicle KwH for battery electric seemed to be conservative and they were finding additional battery charge remaining than expected. This could be indicative of the Florida geography and operating conditions compared to other areas.
- The team agreed to schedule for the next steering committee meeting for March 7th.

Zero Emissions Transition Plan

Steering Committee #3 Agenda – Thursday March 7, 2025

Meeting Summary

Attendees:

Dusty Hansen, Collier MPO

Omar Deleon, Collier County PTNE

Yousi Cardesco, Collier County PTNE

Alex Showalter, Collier County PTNE

Chad Ward, Collier County Pollution Control Manager

Tonia Selmeski, Collier County Community Planning & Resiliency

Wally Blain, Benesch

Juan Suarez, Benesch

Agenda

1. JTA Peer Experience
2. 10-Year Implementation Plan
3. Questions and Group Discussion
4. Next Steps

Summary

- Benesch provided a status update on the final peer agency interview that was conducted. The interview with JTA was held following the previous Steering Committee Meeting. JTA has had a positive experience using CNG and is moving forward with plans to deploy 14 autonomous electric shuttles later this year. JTA's decision to begin with CNG in 2013 was to support Bus Rapid Transit service.
- Like other agencies, JTA maintains a fleet of diesel buses to maintain operational resiliency.
- JTA has experienced challenges with underperforming EV ranges and facility space for electric charging equipment. Their experience to transition towards zero emissions is an evolving process aligned with their vehicle replacement schedule and funding opportunities.
- Benesch provided an overview of the 10-year implementation plan based on the selected fueling plan. CAT has chosen to use the current electric bus that is in production as a test pilot to evaluate the feasibility and long-term viability of transitioning to alternative fuel sources.
    - Transition of the fixed route fleet is being approached through a phased implementation.
    - Demand response vehicle will continue to be a fuel mix comprised of gasoline and diesel fuels.
    - CAT is planning for the replacement of two support vans to electric SUVs.
- By 2034, the transition plan would move the fixed route fleet to 68% diesel, 19% hybrid battery electric, 7% gasoline, and 6% battery electric. Currently the fleet is 93% diesel.
- Phase 1 of the implementation would extend through 2029. During the phase, the battery electric bus that is on order would be delivered and two overnight chargers would be purchased. After evaluation of this new vehicle, and assessment of the buses operating performance and maintenance needs could be conducted prior to proceeding with a second purchase. Later in the meeting, Omar explained that charging of the battery electric bus and two support SUVs would need to be put on a rotation which would allow all three vehicles to be charged using the two chargers.
- Phase 2 would extend through 2032 when CAT would purchase a second battery electric bus. The next 5-year major update to the Transit Development Plan will be due in 2031. At that time, the ZEV Transition Plan should be re-evaluated based on then, current range and vehicle performance expectations. A consolidated vehicle replacement plan would be updated based on the TDP analysis and needs.

- Phase 3 as currently defined would include replacing six existing buses that reach their end of useful life with hybrid electric buses. As a new technology component is added to the fleet mix, operating performance and maintenance needs would again need to be evaluated.
- As part of the facility assessment, CAT already has preliminary plans for the conversion of two spaces dedicated to electric buses. Based on space limitations, on-site incorporation of CNG or bio-diesel isn't feasible at this time due to the need for fuel storage and on-site refueling.
- As new fuel technologies are introduced, maintenance staff will need to be trained. CAT desires to maintain the existing workforce and provide the necessary training. Immediate implementation of a battery electric vehicle requires dependence on the vehicle manufacturer for warranty work and support.
- In response to the proposed transition plan, Yousi appreciated and supported the slow implementation. She noted that thinking ahead and preparing for future infrastructure needs is necessary for budgeting and preparing grant funding requests. She also noted that developing partnerships, like JTA did, plays a big part in reaching a successful outcome.
- Omar indicated that conversation has continued with FPL in regards to electrification and needs at the Operations/Maintenance Facility. Ultimately a new transformer would be needed with the addition of battery electric buses. The intent is to identify the maximum future need in order to right-size the transformer.
- Chad asked if the transition plan would include emissions level expectations for the recommended approach in addition to the cost information. Benesch is wrapping up the documentation and will incorporate the same level of information for the recommended transition as was used for the comparison of feasibility scenarios.
- The schedule of next steps was discussed. The draft transition plan will be submitted to MPO, CAT, and the Steering Committee for review. A final draft for review by the Public Transit Advisory Committee, Technical Advisory Committee, and Citizens Advisory Committee is due on March 12th.
- Comments by the Steering Committee can be provided by March 21st in order to be included in the information that will be presented to the MPO Board on April 11th. Final action on the transition plan will be made by the Board of County Commissioners at their April 22nd meeting.

APPENDIX B PEER AGENCY INTERVIEW NOTES

Name: Christopher Cochran and Jacob Labutka Organization: PSTA

Interview date and time: 1/14/2025 1:00 PM

1. Please give us an overview of the fuel technologies and fleet mix that you currently employ.

The oldest buses are diesel, mostly will be phased out. Newly ordered trolleys are diesels. Most buses are hybrid electric (Gillig). Incrementally increasing the size of the electric fleet (Gillig and formerly BYG)

2. Why did you choose the mix of technologies that you chose?

Partially motivated by reducing emissions, practical to fund things through grants. Wanted to expand electric fleet with the hope of decreasing maintenance costs. Moving in the direction of a diverse fleet (hybrid and electric), this is important in times of natural disaster. Battery works well in warmer climates.

3. How long have you been operating each technology?

Hybrids- around 2009 and 2010. Electrics- around 2016 and 2017.

4. Are the fuel technologies that you employ tied to a specific type of service? Or conversely, are there any services for which you would not use these alternative fuel vehicles?

Not necessarily tied to a specific service. Electric buses can handle approximately 70% of service blocks. We would not deploy electrics on express routes to Tampa. The hybrids pretty much go anywhere. Some newer buses (electric) cannot clear the obsolete terminals.

5. How did you convince your decision makers to move forward with this technology?

We received $600k from the BP oil spill to build charging infrastructure. We demonstrate to decision makers that we continue to be innovative. We bought the first couple alt fuel buses with our own funds, demonstrating that we can successfully use external funds for these vehicles.

6. Overall, what has been your experience with these technologies?

From a user perspective: We have had minimal issues with hybrids, given the increased fuel efficiencies. With EV's, we are satisfied with the range. 270 miles range for some of them. Our longer routes usually come back with about 15% left. We are looking to deploy on-route chargers. We have had some issues with chargers, not performing to expectations. We are looking at plug in charging instead of inductive charging, it is very complicated and impractical. Add battery capacity instead of inductive charging.

Have you had sufficient vendor support or have there been implementation challenges? (ie: warranty of parts, on-site support, cost over-runs for implementation, etc).

Issues with BYD buses, sent one back due to battery pack going through flooding.

7. Are you getting the expected and/or promised travel range per charge (if applicable)?

Yes. See question 6, given flat conditions and warn weather.

8. If you had to start over, what would you do differently? Has your chosen mix of the technologies been beneficial or would you change the mix of technologies?

There were issues with BYD buses. We developed a statewide template for procuring electric buses. Our current fuel mix is good, it is not practical to expand infrastructure to include additional fuel types.

9. Do you see any advantage to doing a transition by starting with hybrid or is it better to go all in with a ZEB full transition?

Driving habits of the driver really affect the performance of the battery electric, and hybrid to a lesser extent. It matters especially more on limited range battery electrics.

10. What facility improvements were required to implement the technology?

Training maintenance staff (including additional certifications), adding chargers in depot, coordinating with utility provider for electric capacity, especially the latter. We have all 200kwh ChargePoint chargers (5x 45kwh boxes per unit). Several power stations were added onsite by utility provider. In the future, we will convert unused induction charging into plug in charging stations, done with ChargePoint and Duke.

11. What operational constraints has your agency run into?

The main issue is range. We have not overcome this issue completely, but the vast majority of our blocks can accommodate electric. Block schedules can vary greatly (3 to 12 hours).

12. What training was required for operators? Maintenance staff?

Operators were trained on the slight differences on the buses. Maintenance staff were trained on how to work on a completely different vehicle.

13. Have you experienced any cost savings or conducted a return on investment study to assess the financial impacts resulting from planned or implemented fleet changes? (What specifically have you seen as the result and is there information you could share with us).

We have saved some money in terms of maintenance.

14. Are there any additional thoughts or perspectives you have now related to the use of zero emission propulsion that wish you knew sooner?

Would not have gone down the path of the inductive charging. Leadership needs to be on-board with implementing the alt fuel vehicles. Hybrid vehicles are a good place to start.

Name: Julie Parker, Matt Kinninger Organization: LeeTran

Interview date and time: 2/7/2025; 9:00 AM

1. Please give us an overview of the fuel technologies and fleet mix that you currently employ.

Fixed route buses: 8 hybrids, getting up in age, close to being phased out; 2 EV buses on order – will likely receive in 2026; some aging propane vehicles that are reaching their life expectancy.

2. Why did you choose the mix of technologies that you chose?

For hybrids, they were able to get grant funding for them, and they were advertised as more fuel efficient (mpg), but that turned out to not be true. Cost for propane was because fuel was very cheap and they were able to get rebates for propane fuel, extra funding that was able to be used for alternate fuels vehicles.

3. How long have you been operating each technology?

Since 2015, 10 years for propane; 2013 was the hybrid buses; EV will be 2026.

4. Are the fuel technologies that you employ tied to a specific type of service? Or conversely, are there any services for which you would not use these alternative fuel vehicles?

The first generation of propane was limited on miles, but have greatly improved since. It does take time and money to bring these in for fuel and the propane had to be brought in midway through the day. There were occasionally heating issues that would make vehicles stall in hot weather for propane. They did not discriminate hybrid routes, as long as fueling was not an issue. These vehicles are made for long routes with less stop-and-go ability, so they were better for express type services.

5. How did you convince your decision makers to move forward with this technology?

The decision was about overall cost, the savings from government funding led to the purchases of propane and hybrid vehicles. For electric buses, the decision-makers were looking for clean energy to use in the downtown area, so they led the way.

6. Overall, what has been your experience with these technologies?

There has been a need for extra training. The range has for these propane and hybrid vehicles have created a level of uncertainty within the agency. The propane vehicles must be towed if they run out of fuel. If it is left at a dealer, there needs to be fuel brought to and available on site. Propane vehicles get plugged up easier, so there are new fuel pumps being brought in around every 80k miles. Lately, it has been very lengthy to get parts in for vehicles that need maintenance. Waiting two weeks for a fuel pump is frustrating to them. For hybrids, they get 1 extra mpg, so they don't think it is worth the extra costs. Also, only certified technicians are able to work on hybrid bus tops, so they would have to send the vehicle into a dealer if there was damage.

7. Are you getting the expected and/or promised travel range per charge (if applicable)?

Not meeting the expectation for hybrid, propane is not as bad but is a little bit. They think gasoline for vans is best and diesel for buses.

Extra Q) are vendors improving in technology enough to supplement these issues?

They have competition to do the best they can, but LeeTran does not know about the details of that.

8. If you had to start over, what would you do differently? Has your chosen mix of the technologies been beneficial or would you change the mix of technologies?

9. Do you see any advantage to doing a transition by starting with hybrid or is it better to go all in with a ZEB full transition?

10. What facility improvements were required to implement the technology?

For propane, they had to put in a tank on the property to provide daily fueling; they had to install a drive-thru type of system because the propane is temperature sensitive. There is also safety gear required to do it, but the tank itself is the same for gas and diesel.

11. What operational constraints has your agency run into?

12. What training was required for operators? Maintenance staff?

Propane – a crash course for fueling; same for typical gasoline and diesel training for fueling.

13. Have you experienced any cost savings or conducted a return on investment study to assess the financial impacts resulting from planned or implemented fleet changes? (What specifically have you seen as the result and is there information you could share with us).

It costs a lot to implement these buses and keep them maintained. Propane engines are hard to get, so they've had times where buses have had to sit for months while new engines are on backorder.

14. Are there any additional thoughts or perspectives you have now related to the use of zero emission propulsion that wish you knew sooner?

You need to have a really good backup plan; breakdowns are big costs since towing is a cost that quickly adds up.

Name: Alexander Traversa Organization: JTA

Interview date and time: 2:00pm 02/14/25

1. Please give us an overview of the fuel technologies and fleet mix that you currently employ.

197 vehicles in FR, predominately CNG. This started in 2013/2014. This was done for BRT. P3 with clean energy for MPO funded CNG fueling station. This was chosen for stability and fuel costs. At the time CNG buses were not costly compared to diesel. This was highly successful. 70% CNG right now. The remaining 35 to 40 are diesel (hybrid and low sulfur diesel). 2017 LNE grant for two battery electric buses. Not so successful with our service, with long-distance blocks. Our entire fleet is Gillig. 175-mile range for BEB, with the best drivers. Diesel fleet is there for resiliency. CNG station can accommodate 150 buses.

JTA will launch an automated vehicle system in June. 14 retrofitted autonomous electric vans, for shuttle, circulator and MOD service. JTA has considered propane for demand response fleet, as it is successful in other agencies. We have had hydrogen conversations as well.

2. Why did you choose the mix of technologies that you chose?

(Answered in question 1).

3. How long have you been operating each technology?

(Answered in question 1).

4. Are the fuel technologies that you employ tied to a specific type of service? Or conversely, are there any services for which you would not use these alternative fuel vehicles?

(Answered in question 1).

5. How did you convince your decision makers to move forward with this technology?

In regard to EVs and Hydrogen, hands on training with maintenance and ops convinces them to get on board. CNG switch was easy (operates similar to diesel). EVs are logistically more complicated to implement. Overall, building confidence in the technology. CNG has developed to a point where JTA is comfortable, but not quite yet with electric or hydrogen.

6. Overall, what has been your experience with these technologies?

(Answered previously).

Have you had sufficient vendor support or have there been implementation challenges? (ie: warranty of parts, on-site support, cost over-runs for implementation, etc).

Gillig has been supportive with the CNG, and their entire Gillig fleet (benefit with one manufacture). Early issues with Gillig Gen 1 EV. Many issues with chargers, though. Most are DC level 3 charge points)

7. Are you getting the expected and/or promised travel range per charge (if applicable)?

They are getting range less than advertised (300 vs 150/175) (due to strenuous operation like A/C). The optimal use of electric (stop and go) is not quite easy to pull of in Jacksonville).

8. If you had to start over, what would you do differently? Has your chosen mix of the technologies been beneficial or would you change the mix of technologies?

Do not really need to change it major. Have heard horror stories about replacing whole fleet with alternate fuels. Policy ramifications as well. But it would be nice for more options (more American manufacturers), because of Buy America restrictions.

9. Do you see any advantage to doing a transition by starting with hybrid or is it better to go all in with a ZEB full transition?

10. What facility improvements were required to implement the technology?

Transformers required for EV charging, needed to find space for chargers as well, as their yard was full.

11. What operational constraints has your agency run into?

CNG was painless in this respect. But we are considering adapting operations for other fuel types. May need to expand/add ops and maintenance facilities to accommodate growth and new fuel types.

12. What training was required for operators? Maintenance staff?

Manufacturers provide support for this. CNG and EV Gilligs needed training for maintenance and needed new equipment for elevated maintenance work.

13. Have you experienced any cost savings or conducted a return on investment study to assess the financial impacts resulting from planned or implemented fleet changes? (What specifically have you seen as the result and is there information you could share with us).

Not formally. Looked at emissions implications, JTA is credited for emission reductions, which was high because of RNG.

14. Are there any additional thoughts or perspectives you have now related to the use of zero emission propulsion that wish you knew sooner?

RNG. Would be nice see if RNG can be integrated with CNG, while waiting for EV and Hydrogen technology to advance. This would be relatively easy to implement. It is important to understand grants, what they are for, and why they exist. Consider community health considerations but strongly consider economic aspects under this new administration. JTA's advantage with their ZEB plan did not call out a specific fuel type, but just a retirement plan. Mixed fuel fleet can have safety and resiliency benefits. Agencies doing it now have funding hurdles to clear.

Given the useful life of buses, focused on dates of vehicle replacement to meet zero emissions by a certain date. It was a light plan for the low no grant only. Funding was less competitive for CNG than EV for that grant. Treat a ZEB plan as a living document. 5339, formula grants, low/no is TBD for 2025. Look into P3 route for fueling infrastructure, public private partnerships. p

APPENDIX C FEASIBILITY ANALYSIS RESULTS

This appendix to Task 6 for ZEV feasibility details the results generated by each of the models used for the analysis

C.1 Model Results

The following section presents the detailed results of the block feasibility model. The first set of tables presents the results from the battery electric bus model for fixed route vehicle blocks split by vehicle length. This is then followed by results for other fuel alternative vehicle types. The results are then presented in the same order for demand response vehicles, and equipment vehicles.

C.1.1 Fixed Route Block Results

The following presents results from the model for all fixed route block analysis.

C.1.1.1 Current Electric Bus Feasibility

Tables C-1 through C-9 show the model results and demonstrate their feasibility by day of week. Results can be interpreted as follows:

- **Feasible**: bus can feasibly operate the entire length of a block in strenuous conditions without tapping into reserve energy even after the potential amount of battery degradation in that given model year.
- **Maybe**: The bus may be able to operate but could potentially run into occasional issues where the reserve energy may need to be used. This indicator can also suggest the feasibility of a block if in-route or off-route charging were implemented.
- **Unfeasible**: The bus will likely fail to operate the entire length of a block unless major operational changes are made such as splitting a block, adjusting scheduled operations, reducing number of trips, or making the alignment shorter.

TABLE C-1: 30-FOOT WEEKDAY SERVICE MODEL FOR BATTERY ELECTRIC BUSES (2025)

Block	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
2/20	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
3	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
6	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
7	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
8	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
9	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
10	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
11	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
12	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
15/21	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
16	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
17	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
19	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
22	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible

Table C-2: 30-Foot Saturday Service Model for Battery Electric Buses (2025)

Block	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
2	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
3	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
6	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
7	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
8	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
9	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
10	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
11	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
12	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
15	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
16	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
17	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible

Table C-3: 30-Foot Sunday Service Model for Battery Electric Buses (2025)

Block	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
2	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible
3	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
6	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
7	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
8	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
9	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
10	Maybe	Maybe	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
11	Feasible	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible
12	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible

Table C-4: 35-Foot Weekday Service Model for Battery Electric Buses (2025)

Block	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
5	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
4	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
13	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible
18	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible

Table C-5: 35-Foot Saturday Service Model for Battery Electric Buses (2025)

Block	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
5	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
4	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
13	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
18	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible

TABLE C-6: 35-FOOT SUNDAY SERVICE MODEL FOR BATTERY ELECTRIC BUSES (2025)

Block	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
5	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible
4	Feasible	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible
13	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible

TABLE C-7: 40-FOOT WEEKDAY SERVICE MODEL FOR BATTERY ELECTRIC BUSES (2025)

Block	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
1	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible

TABLE C-8: 40-FOOT SATURDAY SERVICE MODEL FOR BATTERY ELECTRIC BUSES (2025)

Block	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
1	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible

TABLE C-9: 40-FOOT SUNDAY SERVICE MODEL FOR BATTERY ELECTRIC BUSES (2025)

Block	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
1	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible

C.1.1.2 Future Electric Bus Feasibility

Figures C-1 through C-9 demonstrate how many blocks will be feasible up to the tenth year from purchase for bus purchase years 2025 and 2035.

FIGURE C-1: 30-FOOT WEEKDAY BLOCKS 10-YEAR FEASIBILITY (2035)

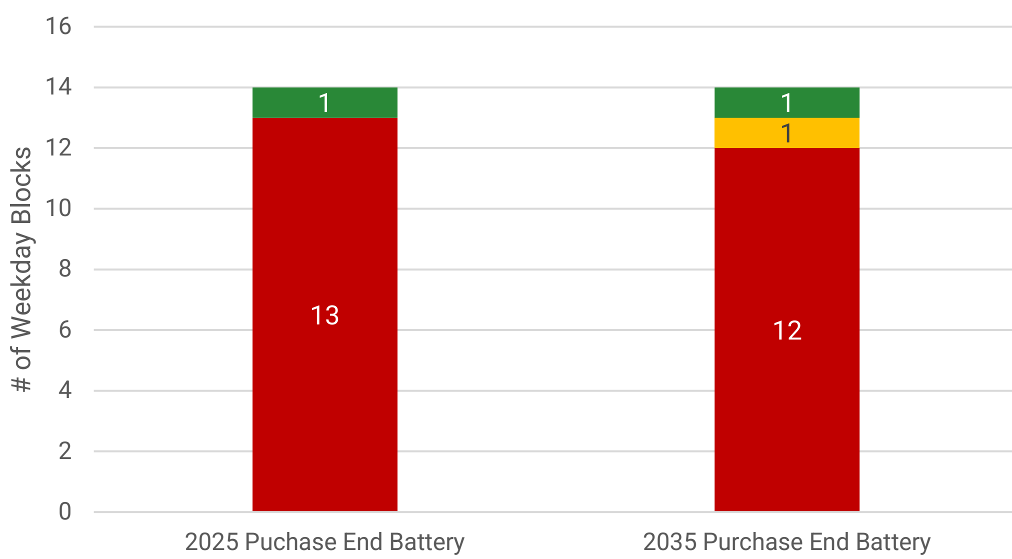


FIGURE C-2: 30-FOOT SATURDAY BLOCKS 10-YEAR FEASIBILITY (2035)

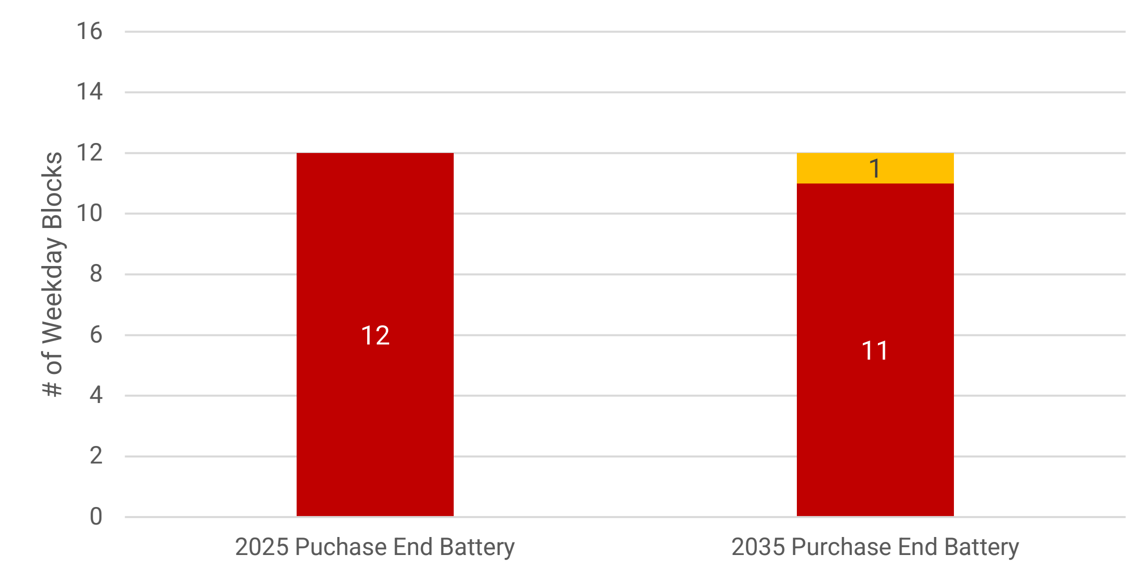


FIGURE C-3: 30-FOOT SUNDAY BLOCKS 10-YEAR FEASIBILITY (2035)

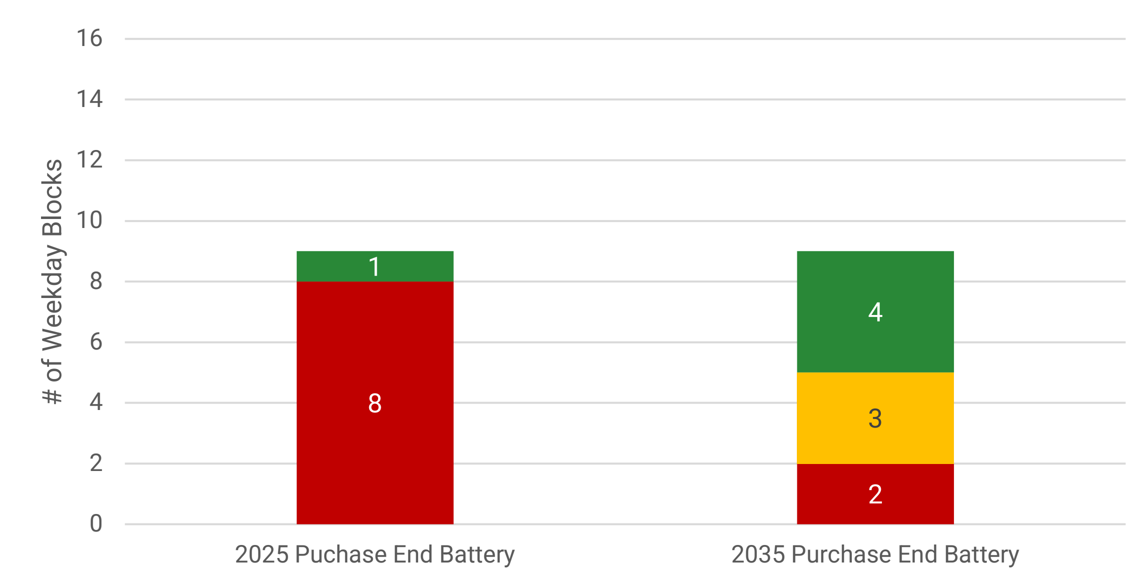


Figure C-4: 35-Foot Weekday Blocks 10-Year Feasibility (2035)

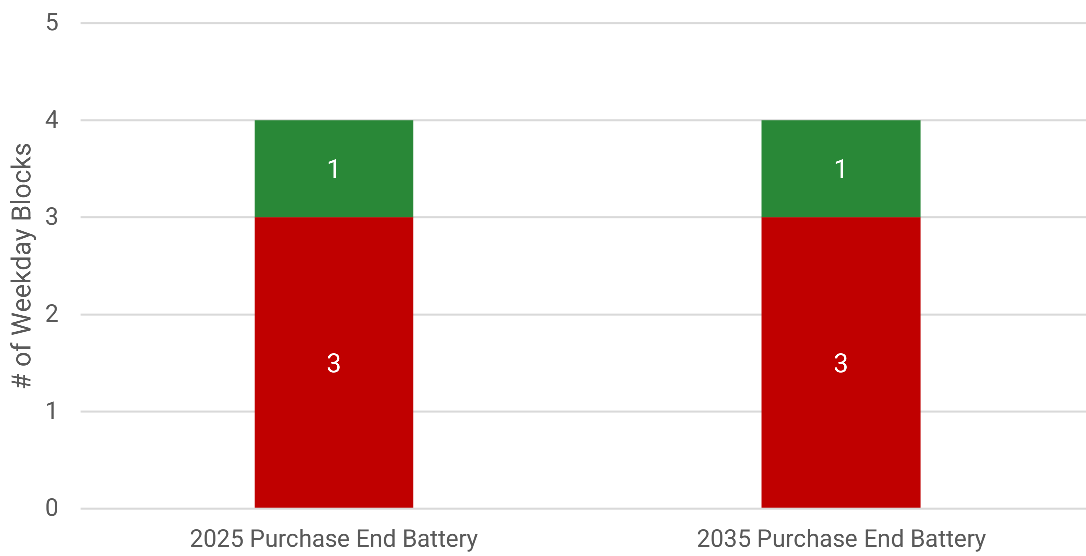


Figure C-5: 35-Foot Saturday Blocks 10-Year Feasibility (2035)

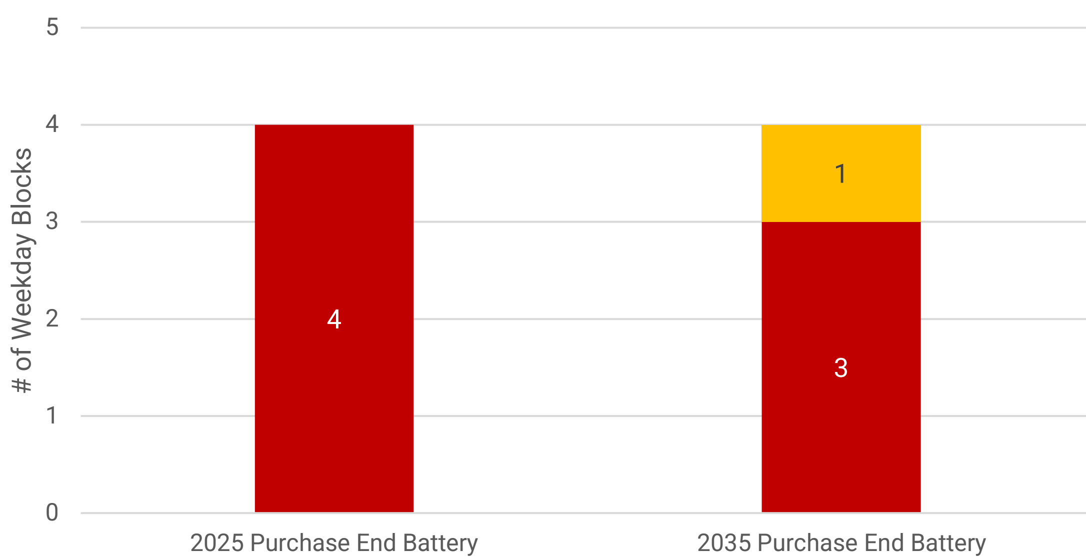


FIGURE C-6: 35-FOOT SUNDAY BLOCKS 10-YEAR FEASIBILITY (2035)

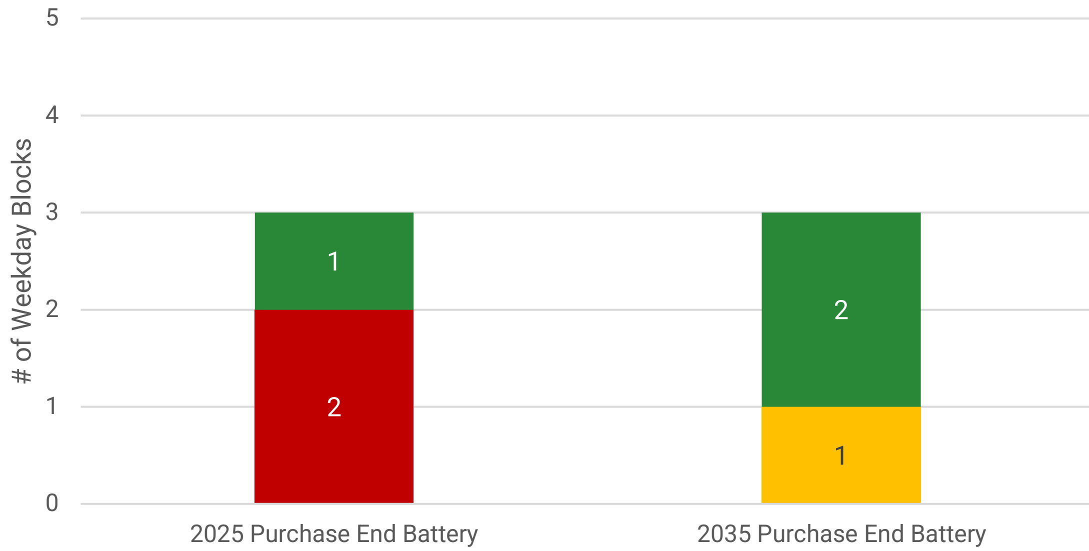


FIGURE C-7: 40-FOOT WEEKDAY BLOCKS 10-YEAR FEASIBILITY (2035)

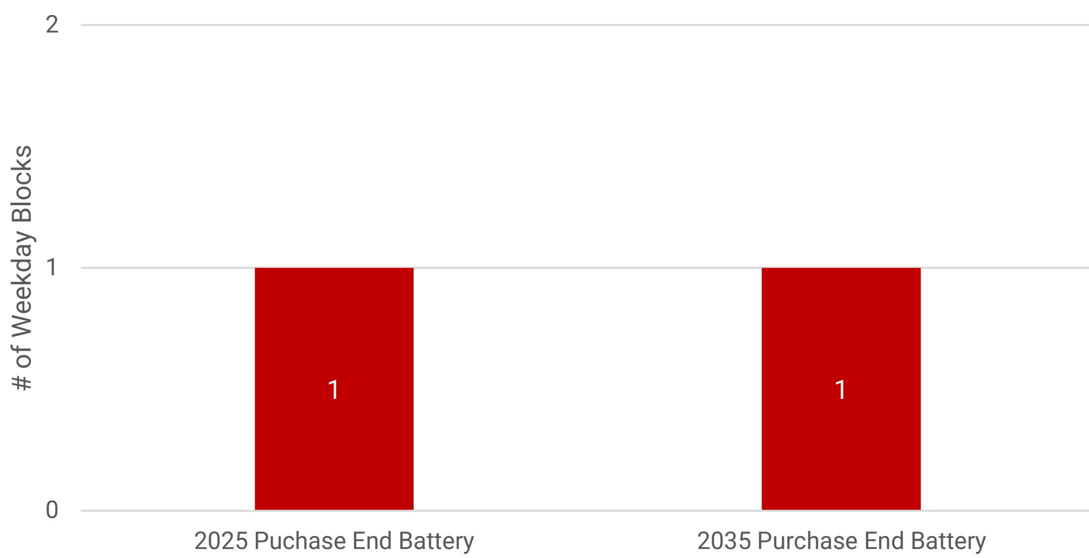


FIGURE C-8: 40-FOOT SATURDAY BLOCKS 10-YEAR FEASIBILITY (2035)

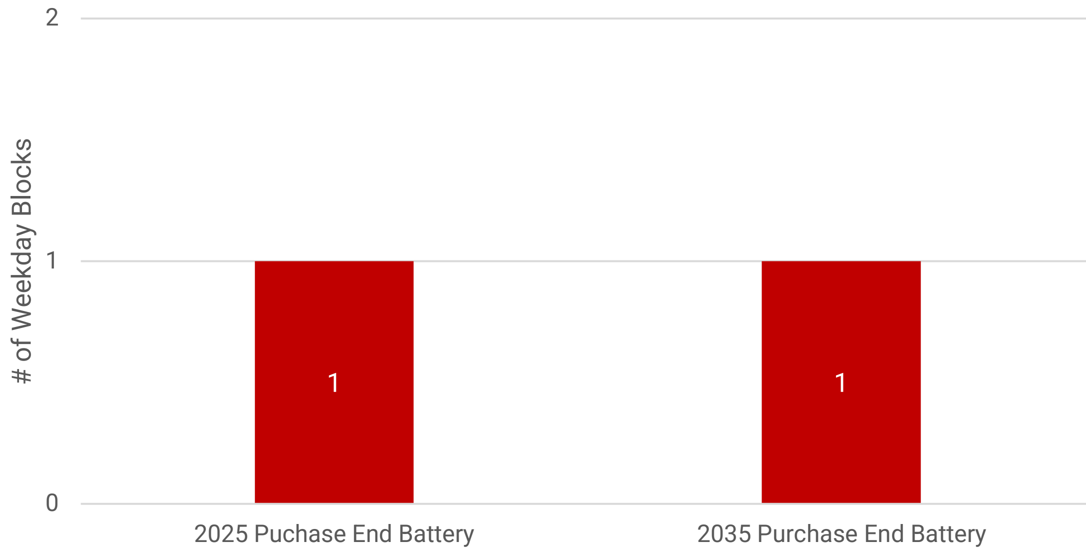
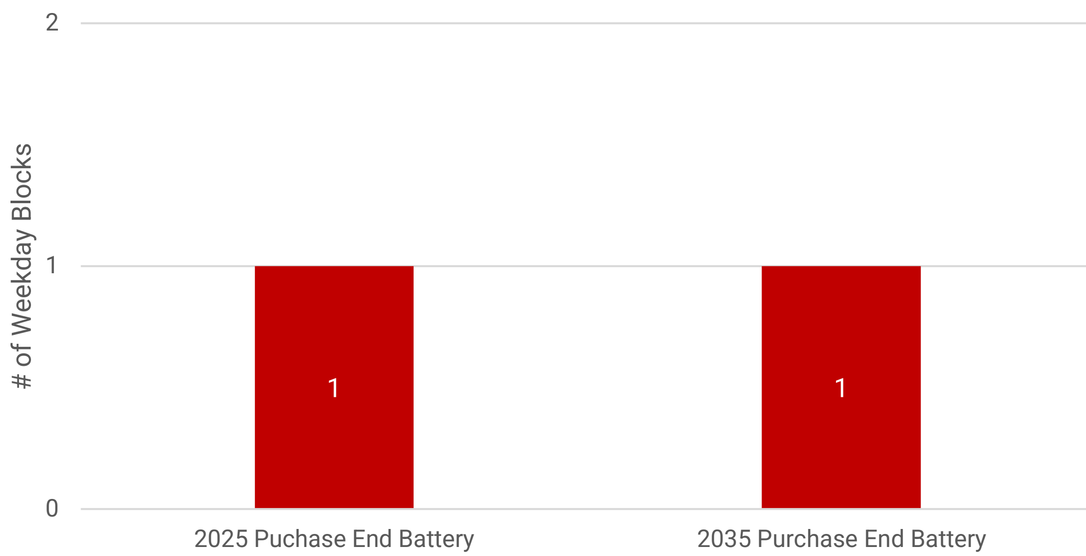


FIGURE C-9: 40-FOOT SUNDAY BLOCKS 10-YEAR FEASIBILITY (2035)



C.1.1.3 Electric Re-Charging Scenario

Results from this analysis are documented were extracted from excel for each block configuration analyzed.

Battery Electric Bus Recharge Calulator

Block Profile	7	*ID*
Vehicle Size	30	*30, 35, 40 feet*
Starting Charge 2035 (Strenous Mileage Yr. 10)	98	
Starting Charge 2040 (Strenous Mileage Yr. 10)	117	
Starting Charge 2045 (Strenous Mileage Yr. 10)	141	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Governmenrt Center	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	0	0	98	98	Can Make This Trip	117	117	Can Make This Trip	141	141	Can Make This Trip
First Round Trip	6.3	7	98	98	Can Make This Trip	117	117	Can Make This Trip	141	141	Can Make This Trip
Second Round Trip	28.3	7	98	76.7	Can Make This Trip	117	95.7	Can Make This Trip	141	119.7	Can Make This Trip
Third Round Trip	28.3	7	76.7	55.4	Can Make This Trip	95.7	74.4	Can Make This Trip	119.7	98.4	Can Make This Trip
Fourth Round Trip	28.3	12	55.4	39.1	Can Make This Trip	74.4	58.1	Can Make This Trip	98.4	82.1	Can Make This Trip
Fifth Round Trip	28.3	12	39.1	22.8	Can Make This Trip	58.1	41.8	Can Make This Trip	82.1	65.8	Can Make This Trip
Sixth Round Trip	28.3	12	22.8	6.5	Can Make This Trip	41.8	25.5	Can Make This Trip	65.8	49.5	Can Make This Trip
Seventh Round Trip	28.3	12	6.5	-9.8	Running on Reserve Energy	25.5	9.2	Can Make This Trip	49.5	33.2	Can Make This Trip
Eighth Round Trip	28.3	12	-9.8	-26.1	Cannot Complete Trip	9.2	-7.1	Running on Reserve Energy	33.2	16.9	Can Make This Trip
Ninth Round Trip	28.3	12	-26.1	-42.4	Cannot Complete Trip	-7.1	-23.4	Cannot Complete Trip	16.9	0.6	Can Make This Trip
Tenth Round Trip	28.3	12	-42.4	-58.7	Cannot Complete Trip	-23.4	-39.7	Cannot Complete Trip	0.6	-15.7	Cannot Complete Trip
Eleventh Round Trip	22	0	-58.7	-80.7	Cannot Complete Trip	-39.7	-61.7	Cannot Complete Trip	-15.7	-37.7	Cannot Complete Trip
End Deadhead	0	0	-80.7	-80.7	Cannot Complete Trip	-61.7	-61.7	Cannot Complete Trip	-37.7	-37.7	Cannot Complete Trip
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	7	*ID*
Vehicle Size	30	*30, 35, 40 feet*
Starting Charge (Strenous Mileage Yr. 1)	121	
Starting Charge (Strenous Mileage Yr. 5)	109	
Starting Charge (Strenous Mileage Yr. 10)	98	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Governmenrt Center	

Round Trip	Trip Length before Layover	Layover Time in minutes at End of Trip	Miles	Miles Left	Yr 1 Assessment	Miles	Miles Left	Yr 5 Assessment	Miles	Miles Left	Yr 10 Assessment
Initial Deadhead	0	0	121	121	Can Make This Trip	109	109	Can Make This Trip	98	98	Can Make This Trip
First Round Trip	6.3	7	121	121	Can Make This Trip	109	109	Can Make This Trip	98	98	Can Make This Trip
Second Round Trip	28.3	7	121	99.7	Can Make This Trip	109	87.7	Can Make This Trip	98	76.7	Can Make This Trip
Third Round Trip	28.3	7	99.7	78.4	Can Make This Trip	87.7	66.4	Can Make This Trip	76.7	55.4	Can Make This Trip
Fourth Round Trip	28.3	12	78.4	62.1	Can Make This Trip	66.4	50.1	Can Make This Trip	55.4	39.1	Can Make This Trip
Fifth Round Trip	28.3	12	62.1	45.8	Can Make This Trip	50.1	33.8	Can Make This Trip	39.1	22.8	Can Make This Trip
Sixth Round Trip	28.3	12	45.8	29.5	Can Make This Trip	33.8	17.5	Can Make This Trip	22.8	6.5	Can Make This Trip
Seventh Round Trip	28.3	12	29.5	13.2	Can Make This Trip	17.5	1.2	Can Make This Trip	6.5	-9.8	Running on Reserve Energy
Eighth Round Trip	28.3	12	13.2	-3.1	Running on Reserve Energy	1.2	-15.1	Cannot Complete Trip	-9.8	-26.1	Cannot Complete Trip
Ninth Round Trip	28.3	12	-3.1	-19.4	Cannot Complete Trip	-15.1	-31.4	Cannot Complete Trip	-26.1	-42.4	Cannot Complete Trip
Tenth Round Trip	28.3	12	-19.4	-35.7	Cannot Complete Trip	-31.4	-47.7	Cannot Complete Trip	-42.4	-58.7	Cannot Complete Trip
Eleventh Round Trip	22	0	-35.7	-57.7	Cannot Complete Trip	-47.7	-69.7	Cannot Complete Trip	-58.7	-80.7	Cannot Complete Trip
End Deadhead	0	0	-57.7	-57.7	Cannot Complete Trip	-69.7	-69.7	Cannot Complete Trip	-80.7	-80.7	Cannot Complete Trip
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	18	*ID*
Vehicle Size	35	*30, 35, 40 feet*
Starting Charge 2035 (Strenous Mileage Yr. 10)	119	
Starting Charge 2040 (Strenous Mileage Yr. 10)	143	
Starting Charge 2045 (Strenous Mileage Yr. 10)	171	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Immokalee	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	35.6	0	119	83.4	Can Make This Trip	143	107.4	Can Make This Trip	171	135.4	Can Make This Trip
First Round Trip	22.2	12	83.4	73.2	Can Make This Trip	107.4	97.2	Can Make This Trip	135.4	125.2	Can Make This Trip
Second Round Trip	22.2	12	73.2	63	Can Make This Trip	97.2	87	Can Make This Trip	125.2	115	Can Make This Trip
Third Round Trip	22.2	12	63	52.8	Can Make This Trip	87	76.8	Can Make This Trip	115	104.8	Can Make This Trip
Fourth Round Trip	22.2	12	52.8	42.6	Can Make This Trip	76.8	66.6	Can Make This Trip	104.8	94.6	Can Make This Trip
Fifth Round Trip	22.2	12	42.6	32.4	Can Make This Trip	66.6	56.4	Can Make This Trip	94.6	84.4	Can Make This Trip
Sixth Round Trip	22.2	12	32.4	22.2	Can Make This Trip	56.4	46.2	Can Make This Trip	84.4	74.2	Can Make This Trip
Seventh Round Trip	22.2	12	22.2	12	Can Make This Trip	46.2	36	Can Make This Trip	74.2	64	Can Make This Trip
Eighth Round Trip	22.2	0	12	-10.2	Cannot Complete Trip	36	13.8	Can Make This Trip	64	41.8	Can Make This Trip
End Deadhead	35.6	0	-10.2	-45.8	Cannot Complete Trip	13.8	-21.8	Cannot Complete Trip	41.8	6.2	Can Make This Trip
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	18	*ID*
Vehicle Size	35	*30, 35, 40 feet*
Starting Charge (Strenous Mileage Yr. 1)	148	
Starting Charge (Strenous Mileage Yr. 5)	133	
Starting Charge (Strenous Mileage Yr. 10)	119	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Immokalee	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	35.6	0	148	112.4	Can Make This Trip	133	97.4	Can Make This Trip	119	83.4	Can Make This Trip
First Round Trip	22.2	12	112.4	102.2	Can Make This Trip	97.4	87.2	Can Make This Trip	83.4	73.2	Can Make This Trip
Second Round Trip	22.2	12	102.2	92	Can Make This Trip	87.2	77	Can Make This Trip	73.2	63	Can Make This Trip
Third Round Trip	22.2	12	92	81.8	Can Make This Trip	77	66.8	Can Make This Trip	63	52.8	Can Make This Trip
Fourth Round Trip	22.2	12	81.8	71.6	Can Make This Trip	66.8	56.6	Can Make This Trip	52.8	42.6	Can Make This Trip
Fifth Round Trip	22.2	12	71.6	61.4	Can Make This Trip	56.6	46.4	Can Make This Trip	42.6	32.4	Can Make This Trip
Sixth Round Trip	22.2	12	61.4	51.2	Can Make This Trip	46.4	36.2	Can Make This Trip	32.4	22.2	Can Make This Trip
Seventh Round Trip	22.2	12	51.2	41	Can Make This Trip	36.2	26	Can Make This Trip	22.2	12	Can Make This Trip
Eighth Round Trip	22.2	0	41	18.8	Can Make This Trip	26	3.8	Can Make This Trip	12	-10.2	Cannot Complete Trip
End Deadhead	35.6	0	18.8	-16.8	Cannot Complete Trip	3.8	-31.8	Cannot Complete Trip	-10.2	-45.8	Cannot Complete Trip
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	16	*ID*
Vehicle Size	30	*30, 35, 40 feet*
Starting Charge 2035 (Strenous Mileage Yr. 10)	98	
Starting Charge 2040 (Strenous Mileage Yr. 10)	117	
Starting Charge 2045 (Strenous Mileage Yr. 10)	141	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Immokalee	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	37.2	0	98	60.8	Can Make This Trip	117	79.8	Can Make This Trip	141	103.8	Can Make This Trip
First Round Trip	3	80	60.8	98	Can Make This Trip	79.8	117	Can Make This Trip	103.8	141	Can Make This Trip
Second Round Trip	22.2	12	98	87.8	Can Make This Trip	117	106.8	Can Make This Trip	141	130.8	Can Make This Trip
Third Round Trip	22.2	12	87.8	77.6	Can Make This Trip	106.8	96.6	Can Make This Trip	130.8	120.6	Can Make This Trip
Fourth Round Trip	22.2	12	77.6	67.4	Can Make This Trip	96.6	86.4	Can Make This Trip	120.6	110.4	Can Make This Trip
Fifth Round Trip	22.2	12	67.4	57.2	Can Make This Trip	86.4	76.2	Can Make This Trip	110.4	100.2	Can Make This Trip
Sixth Round Trip	22.2	12	57.2	47	Can Make This Trip	76.2	66	Can Make This Trip	100.2	90	Can Make This Trip
Seventh Round Trip	22.2	12	47	36.8	Can Make This Trip	66	55.8	Can Make This Trip	90	79.8	Can Make This Trip
Eighth Round Trip	22.2	12	36.8	26.6	Can Make This Trip	55.8	45.6	Can Make This Trip	79.8	69.6	Can Make This Trip
Ninth Round Trip	22.2	0	26.6	4.4	Can Make This Trip	45.6	23.4	Can Make This Trip	69.6	47.4	Can Make This Trip
End Deadhead	37.2	0	4.4	-32.8	Cannot Complete Trip	23.4	-13.8	Cannot Complete Trip	47.4	10.2	Can Make This Trip
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	16	*ID*
Vehicle Size	30	*30, 35, 40 feet*
Starting Charge (Strenous Mileage Yr. 1)	121	
Starting Charge (Strenous Mileage Yr. 5)	109	
Starting Charge (Strenous Mileage Yr. 10)	98	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Immokalee	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	37.2	0	121	83.8	Can Make This Trip	109	71.8	Can Make This Trip	98	60.8	Can Make This Trip
First Round Trip	3	80	83.8	121	Can Make This Trip	71.8	109	Can Make This Trip	60.8	98	Can Make This Trip
Second Round Trip	22.2	12	121	110.8	Can Make This Trip	109	98.8	Can Make This Trip	98	87.8	Can Make This Trip
Third Round Trip	22.2	12	110.8	100.6	Can Make This Trip	98.8	88.6	Can Make This Trip	87.8	77.6	Can Make This Trip
Fourth Round Trip	22.2	12	100.6	90.4	Can Make This Trip	88.6	78.4	Can Make This Trip	77.6	67.4	Can Make This Trip
Fifth Round Trip	22.2	12	90.4	80.2	Can Make This Trip	78.4	68.2	Can Make This Trip	67.4	57.2	Can Make This Trip
Sixth Round Trip	22.2	12	80.2	70	Can Make This Trip	68.2	58	Can Make This Trip	57.2	47	Can Make This Trip
Seventh Round Trip	22.2	12	70	59.8	Can Make This Trip	58	47.8	Can Make This Trip	47	36.8	Can Make This Trip
Eighth Round Trip	22.2	12	59.8	49.6	Can Make This Trip	47.8	37.6	Can Make This Trip	36.8	26.6	Can Make This Trip
Ninth Round Trip	22.2	0	49.6	27.4	Can Make This Trip	37.6	15.4	Can Make This Trip	26.6	4.4	Can Make This Trip
End Deadhead	37.2	0	27.4	-9.8	Running on Reserve Energy	15.4	-21.8	Cannot Complete Trip	4.4	-32.8	Cannot Complete Trip
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	5	*ID*
Vehicle Size	35	*30, 35, 40 feet*
Starting Charge 2035 (Strenous Mileage Yr. 10)	119	
Starting Charge 2040 (Strenous Mileage Yr. 10)	143	
Starting Charge 2045 (Strenous Mileage Yr. 10)	171	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Government Center	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	0	0	119	119	Can Make This Trip	143	143	Can Make This Trip	171	171	Can Make This Trip
First Trip	6.3	3	119	115.7	Can Make This Trip	143	139.7	Can Make This Trip	171	167.7	Can Make This Trip
Second Round Trip	42.2	9	115.7	82.5	Can Make This Trip	139.7	106.5	Can Make This Trip	167.7	134.5	Can Make This Trip
Third Round Trip	42.2	7	82.5	47.3	Can Make This Trip	106.5	71.3	Can Make This Trip	134.5	99.3	Can Make This Trip
Fourth Round Trip	42.2	10	47.3	15.1	Can Make This Trip	71.3	39.1	Can Make This Trip	99.3	67.1	Can Make This Trip
Fifth Round Trip	42.2	11	15.1	-16.1	Cannot Complete Trip	39.1	7.9	Can Make This Trip	67.1	35.9	Can Make This Trip
Sixth Round Trip	42.2	10	-16.1	-48.3	Cannot Complete Trip	7.9	-24.3	Cannot Complete Trip	35.9	3.7	Can Make This Trip
Seventh Round Trip	42.2	9	-48.3	-81.5	Cannot Complete Trip	-24.3	-57.5	Cannot Complete Trip	3.7	-29.5	Cannot Complete Trip
Eighth Round Trip	42.2	9	-81.5	-114.7	Cannot Complete Trip	-57.5	-90.7	Cannot Complete Trip	-29.5	-62.7	Cannot Complete Trip
Ninth Round Trip	42.2	8	-114.7	-148.9	Cannot Complete Trip	-90.7	-124.9	Cannot Complete Trip	-62.7	-96.9	Cannot Complete Trip
Last Trip	35.9	0	-148.9	-184.8	Cannot Complete Trip	-124.9	-160.8	Cannot Complete Trip	-96.9	-132.8	Cannot Complete Trip
End Deadhead	0	0	-184.8	-184.8	Cannot Complete Trip	-160.8	-160.8	Cannot Complete Trip	-132.8	-132.8	Cannot Complete Trip
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	5	*ID*
Vehicle Size	35	*30, 35, 40 feet*
Starting Charge (Strenous Mileage Yr. 1)	148	
Starting Charge (Strenous Mileage Yr. 5)	133	
Starting Charge (Strenous Mileage Yr. 10)	119	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Government Center	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	0	0	148	148	Can Make This Trip	133	133	Can Make This Trip	119	119	Can Make This Trip
First Trip	6.3	3	148	144.7	Can Make This Trip	133	129.7	Can Make This Trip	119	115.7	Can Make This Trip
Second Round Trip	42.2	9	144.7	111.5	Can Make This Trip	129.7	96.5	Can Make This Trip	115.7	82.5	Can Make This Trip
Third Round Trip	42.2	7	111.5	76.3	Can Make This Trip	96.5	61.3	Can Make This Trip	82.5	47.3	Can Make This Trip
Fourth Round Trip	42.2	10	76.3	44.1	Can Make This Trip	61.3	29.1	Can Make This Trip	47.3	15.1	Can Make This Trip
Fifth Round Trip	42.2	11	44.1	12.9	Can Make This Trip	29.1	-2.1	Running on Reserve Energy	15.1	-16.1	Cannot Complete Trip
Sixth Round Trip	42.2	10	12.9	-19.3	Cannot Complete Trip	-2.1	-34.3	Cannot Complete Trip	-16.1	-48.3	Cannot Complete Trip
Seventh Round Trip	42.2	9	-19.3	-52.5	Cannot Complete Trip	-34.3	-67.5	Cannot Complete Trip	-48.3	-81.5	Cannot Complete Trip
Eighth Round Trip	42.2	9	-52.5	-85.7	Cannot Complete Trip	-67.5	-100.7	Cannot Complete Trip	-81.5	-114.7	Cannot Complete Trip
Ninth Round Trip	42.2	8	-85.7	-119.9	Cannot Complete Trip	-100.7	-134.9	Cannot Complete Trip	-114.7	-148.9	Cannot Complete Trip
Last Trip	35.9	0	-119.9	-155.8	Cannot Complete Trip	-134.9	-170.8	Cannot Complete Trip	-148.9	-184.8	Cannot Complete Trip
End Deadhead	0	0	-155.8	-155.8	Cannot Complete Trip	-170.8	-170.8	Cannot Complete Trip	-184.8	-184.8	Cannot Complete Trip
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	11	*ID*
Vehicle Size	30	*30, 35, 40 feet*
Starting Charge 2035 (Strenous Mileage Yr. 10)	98	
Starting Charge 2040 (Strenous Mileage Yr. 10)	117	
Starting Charge 2045 (Strenous Mileage Yr. 10)	141	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Government Center	

Round Trip	Trip Length before Layover	Layover Time in minutes at End of Trip	Miles	Miles Left	Yr 1 Assessment	Miles	Miles Left	Yr 5 Assessment	Miles	Miles Left	Yr 10 Assessment
Initial Deadhead	6.3	0	98	91.7	Can Make This Trip	117	110.7	Can Make This Trip	141	134.7	Can Make This Trip
First Round Trip	17.4	16	91.7	90.3	Can Make This Trip	110.7	109.3	Can Make This Trip	134.7	133.3	Can Make This Trip
Second Round Trip	17.4	6	90.3	78.9	Can Make This Trip	109.3	97.9	Can Make This Trip	133.3	121.9	Can Make This Trip
Third Round Trip	17.4	6	78.9	67.5	Can Make This Trip	97.9	86.5	Can Make This Trip	121.9	110.5	Can Make This Trip
Fourth Round Trip	17.4	6	67.5	56.1	Can Make This Trip	86.5	75.1	Can Make This Trip	110.5	99.1	Can Make This Trip
Fifth Round Trip	17.4	6	56.1	44.7	Can Make This Trip	75.1	63.7	Can Make This Trip	99.1	87.7	Can Make This Trip
Sixth Round Trip	17.4	14	44.7	41.3	Can Make This Trip	63.7	60.3	Can Make This Trip	87.7	84.3	Can Make This Trip
Seventh Round Trip	17.4	9	41.3	32.9	Can Make This Trip	60.3	51.9	Can Make This Trip	84.3	75.9	Can Make This Trip
Eighth Round Trip	17.4	9	32.9	24.5	Can Make This Trip	51.9	43.5	Can Make This Trip	75.9	67.5	Can Make This Trip
Ninth Round Trip	17.4	9	24.5	16.1	Can Make This Trip	43.5	35.1	Can Make This Trip	67.5	59.1	Can Make This Trip
Tenth Round Trip	17.4	9	16.1	7.7	Can Make This Trip	35.1	26.7	Can Make This Trip	59.1	50.7	Can Make This Trip
Eleventh Round Trip	17.4	9	7.7	-0.7	Running on Reserve Energy	26.7	18.3	Can Make This Trip	50.7	42.3	Can Make This Trip
Twelfth Round Trip	17.4	0	-0.7	-18.1	Cannot Complete Trip	18.3	0.9	Can Make This Trip	42.3	24.9	Can Make This Trip
End Deadhead	6.3	0	-18.1	-24.4	Cannot Complete Trip	0.9	-5.4	Running on Reserve Energy	24.9	18.6	Can Make This Trip
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	11	*ID*
Vehicle Size	30	*30, 35, 40 feet*
Starting Charge (Strenous Mileage Yr. 1)	121	
Starting Charge (Strenous Mileage Yr. 5)	109	
Starting Charge (Strenous Mileage Yr. 10)	98	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Government Center	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	6.3	0	121	114.7	Can Make This Trip	109	102.7	Can Make This Trip	98	91.7	Can Make This Trip
First Round Trip	17.4	16	114.7	113.3	Can Make This Trip	102.7	101.3	Can Make This Trip	91.7	90.3	Can Make This Trip
Second Round Trip	17.4	6	113.3	101.9	Can Make This Trip	101.3	89.9	Can Make This Trip	90.3	78.9	Can Make This Trip
Third Round Trip	17.4	6	101.9	90.5	Can Make This Trip	89.9	78.5	Can Make This Trip	78.9	67.5	Can Make This Trip
Fourth Round Trip	17.4	6	90.5	79.1	Can Make This Trip	78.5	67.1	Can Make This Trip	67.5	56.1	Can Make This Trip
Fifth Round Trip	17.4	6	79.1	67.7	Can Make This Trip	67.1	55.7	Can Make This Trip	56.1	44.7	Can Make This Trip
Sixth Round Trip	17.4	14	67.7	64.3	Can Make This Trip	55.7	52.3	Can Make This Trip	44.7	41.3	Can Make This Trip
Seventh Round Trip	17.4	9	64.3	55.9	Can Make This Trip	52.3	43.9	Can Make This Trip	41.3	32.9	Can Make This Trip
Eighth Round Trip	17.4	9	55.9	47.5	Can Make This Trip	43.9	35.5	Can Make This Trip	32.9	24.5	Can Make This Trip
Ninth Round Trip	17.4	9	47.5	39.1	Can Make This Trip	35.5	27.1	Can Make This Trip	24.5	16.1	Can Make This Trip
Tenth Round Trip	17.4	9	39.1	30.7	Can Make This Trip	27.1	18.7	Can Make This Trip	16.1	7.7	Can Make This Trip
Eleventh Round Trip	17.4	9	30.7	22.3	Can Make This Trip	18.7	10.3	Can Make This Trip	7.7	-0.7	Running on Reserve Energy
Twelfth Round Trip	17.4	0	22.3	4.9	Can Make This Trip	10.3	-7.1	Running on Reserve Energy	-0.7	-18.1	Cannot Complete Trip
End Deadhead	6.3	0	4.9	-1.4	Running on Reserve Energy	-7.1	-13.4	Cannot Complete Trip	-18.1	-24.4	Cannot Complete Trip
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	17	*ID*
Vehicle Size	30	*30, 35, 40 feet*
Starting Charge (Strenous Mileage Yr. 1)	121	
Starting Charge (Strenous Mileage Yr. 5)	109	
Starting Charge (Strenous Mileage Yr. 10)	98	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Government Center	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	6.3	0	121	114.7	Can Make This Trip	109	102.7	Can Make This Trip	98	91.7	Can Make This Trip
First Round Trip	15.7	8	114.7	107	Can Make This Trip	102.7	95	Can Make This Trip	91.7	84	Can Make This Trip
Second Round Trip	15.7	8	107	99.3	Can Make This Trip	95	87.3	Can Make This Trip	84	76.3	Can Make This Trip
Third Round Trip	15.7	8	99.3	91.6	Can Make This Trip	87.3	79.6	Can Make This Trip	76.3	68.6	Can Make This Trip
Fourth Round Trip	15.7	8	91.6	83.9	Can Make This Trip	79.6	71.9	Can Make This Trip	68.6	60.9	Can Make This Trip
Fifth Round Trip	15.7	10	83.9	78.2	Can Make This Trip	71.9	66.2	Can Make This Trip	60.9	55.2	Can Make This Trip
Sixth Round Trip	15.7	10	78.2	72.5	Can Make This Trip	66.2	60.5	Can Make This Trip	55.2	49.5	Can Make This Trip
Seventh Round Trip	15.7	10	72.5	66.8	Can Make This Trip	60.5	54.8	Can Make This Trip	49.5	43.8	Can Make This Trip
Eighth Round Trip	15.7	10	66.8	61.1	Can Make This Trip	54.8	49.1	Can Make This Trip	43.8	38.1	Can Make This Trip
Ninth Round Trip	15.7	10	61.1	55.4	Can Make This Trip	49.1	43.4	Can Make This Trip	38.1	32.4	Can Make This Trip
Tenth Round Trip	15.7	0	55.4	39.7	Can Make This Trip	43.4	27.7	Can Make This Trip	32.4	16.7	Can Make This Trip
End Deadhead	6.3	0	39.7	33.4	Can Make This Trip	27.7	21.4	Can Make This Trip	16.7	10.4	Can Make This Trip
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	15/21	*ID*
Vehicle Size	30	*30, 35, 40 feet*
Starting Charge (Strenous Mileage Yr. 1)	121	
Starting Charge (Strenous Mileage Yr. 5)	109	
Starting Charge (Strenous Mileage Yr. 10)	98	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	CAT Ops	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	0	0	121	121	Can Make This Trip	109	109	Can Make This Trip	98	98	Can Make This Trip
First Round Trip	29.2	8	121	99.8	Can Make This Trip	109	87.8	Can Make This Trip	98	76.8	Can Make This Trip
Second Round Trip	29.2	8	99.8	78.6	Can Make This Trip	87.8	66.6	Can Make This Trip	76.8	55.6	Can Make This Trip
Third Round Trip	29.2	3	78.6	52.4	Can Make This Trip	66.6	40.4	Can Make This Trip	55.6	29.4	Can Make This Trip
Fourth Round Trip	29.2	0	52.4	23.2	Can Make This Trip	40.4	11.2	Can Make This Trip	29.4	0.2	Can Make This Trip
Layover at CAT Ops Center	0	50	23.2	73.2	Can Make This Trip	11.2	61.2	Can Make This Trip	0.2	50.2	Can Make This Trip
Fifth Round Trip	29.2	13	73.2	57	Can Make This Trip	61.2	45	Can Make This Trip	50.2	34	Can Make This Trip
Sixth Round Trip	29.2	17	57	44.8	Can Make This Trip	45	32.8	Can Make This Trip	34	21.8	Can Make This Trip
Seventh Round Trip	29.2	0	44.8	15.6	Can Make This Trip	32.8	3.6	Can Make This Trip	21.8	-7.4	Running on Reserve Energy
End Deadhead	0	0	15.6	15.6	Can Make This Trip	3.6	3.6	Can Make This Trip	-7.4	-7.4	Running on Reserve Energy
Eighth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed

Layover at CAT Ops Center
End Deadhead

Battery Electric Bus Recharge Calulator

Block Profile	2/20	*ID*
Vehicle Size	30	*30, 35, 40 feet*
Starting Charge 2035 (Strenous Mileage Yr. 10)	98	
Starting Charge 2040 (Strenous Mileage Yr. 10)	117	
Starting Charge 2045 (Strenous Mileage Yr. 10)	141	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	CAT Ops	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	1	0	98	97	Can Make This Trip	117	116	Can Make This Trip	141	140	Can Make This Trip
First Round Trip	30.2	0	97	66.8	Can Make This Trip	116	85.8	Can Make This Trip	140	109.8	Can Make This Trip
Second Round Trip	30.2	0	66.8	36.6	Can Make This Trip	85.8	55.6	Can Make This Trip	109.8	79.6	Can Make This Trip
Third Round Trip	30.2	0	36.6	6.4	Can Make This Trip	55.6	25.4	Can Make This Trip	79.6	49.4	Can Make This Trip
Fourth Round Trip	30.2	0	6.4	-23.8	Cannot Complete Trip	25.4	-4.8	Running on Reserve Energy	49.4	19.2	Can Make This Trip
Fifth Round Trip	30.2	0	-23.8	-54	Cannot Complete Trip	-4.8	-35	Cannot Complete Trip	19.2	-11	Cannot Complete Trip
Deadhead	1	0	-54	-55	Cannot Complete Trip	-35	-36	Cannot Complete Trip	-11	-12	Cannot Complete Trip
Layover at CAT Ops Center	0	80	-55	25	Can Make This Trip	-36	44	Can Make This Trip	-12	68	Can Make This Trip
Deadhead	1	0	25	24	Can Make This Trip	44	43	Can Make This Trip	68	67	Can Make This Trip
Sixth Round Trip	30.2	0	24	-6.2	Running on Reserve Energy	43	12.8	Can Make This Trip	67	36.8	Can Make This Trip
Seventh Round Trip	30.2	0	-6.2	-36.4	Cannot Complete Trip	12.8	-17.4	Cannot Complete Trip	36.8	6.6	Can Make This Trip
Deadhead	1	0	-36.4	-37.4	Cannot Complete Trip	-17.4	-18.4	Cannot Complete Trip	6.6	5.6	Can Make This Trip
Eighth Round Trip	43.9	0	-37.4	-81.3	Cannot Complete Trip	-18.4	-62.3	Cannot Complete Trip	5.6	-38.3	Cannot Complete Trip
End Deadhead	43.9	0	-81.3	-125.2	Cannot Complete Trip	-62.3	-106.2	Cannot Complete Trip	-38.3	-82.2	Cannot Complete Trip
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	2/20	*ID*
Vehicle Size	30	*30, 35, 40 feet*
Starting Charge (Strenous Mileage Yr. 1)	121	
Starting Charge (Strenous Mileage Yr. 5)	109	
Starting Charge (Strenous Mileage Yr. 10)	98	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	CAT Ops	

Round Trip	Trip Length before Layover	Layover Time in minutes at End of Trip	Miles	Miles Left	Yr 1 Assessment	Miles	Miles Left	Yr 5 Assessment	Miles	Miles Left	Yr 10 Assessment
Initial Deadhead	1	0	121	120	Can Make This Trip	109	108	Can Make This Trip	98	97	Can Make This Trip
First Round Trip	30.2	0	120	89.8	Can Make This Trip	108	77.8	Can Make This Trip	97	66.8	Can Make This Trip
Second Round Trip	30.2	0	89.8	59.6	Can Make This Trip	77.8	47.6	Can Make This Trip	66.8	36.6	Can Make This Trip
Third Round Trip	30.2	0	59.6	29.4	Can Make This Trip	47.6	17.4	Can Make This Trip	36.6	6.4	Can Make This Trip
Fourth Round Trip	30.2	0	29.4	-0.8	Running on Reserve Energy	17.4	-12.8	Cannot Complete Trip	6.4	-23.8	Cannot Complete Trip
Fifth Round Trip	30.2	0	-0.8	-31	Cannot Complete Trip	-12.8	-43	Cannot Complete Trip	-23.8	-54	Cannot Complete Trip
Deadhead	1	0	-31	-32	Cannot Complete Trip	-43	-44	Cannot Complete Trip	-54	-55	Cannot Complete Trip
Layover at CAT Ops Center	0	80	-32	48	Can Make This Trip	-44	36	Can Make This Trip	-55	25	Can Make This Trip
Deadhead	1	0	48	47	Can Make This Trip	36	35	Can Make This Trip	25	24	Can Make This Trip
Sixth Round Trip	30.2	0	47	16.8	Can Make This Trip	35	4.8	Can Make This Trip	24	-6.2	Running on Reserve Energy
Seventh Round Trip	30.2	0	16.8	-13.4	Cannot Complete Trip	4.8	-25.4	Cannot Complete Trip	-6.2	-36.4	Cannot Complete Trip
Deadhead	1	0	-13.4	-14.4	Cannot Complete Trip	-25.4	-26.4	Cannot Complete Trip	-36.4	-37.4	Cannot Complete Trip
Express Trip to Immokalee	40.4	0	-14.4	-54.8	Cannot Complete Trip	-26.4	-66.8	Cannot Complete Trip	-37.4	-77.8	Cannot Complete Trip
End Deadhead	40.4	0	-54.8	-95.2	Cannot Complete Trip	-66.8	-107.2	Cannot Complete Trip	-77.8	-118.2	Cannot Complete Trip
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed

C.1.1.4 Current Alternative Fuel Vehicle Feasibility

The alternative fuel vehicle feasibility model results are presented in tables A-10 through A-12. Feasibility can be interpreted for these results as follows:

- **Feasible**: The bus can operate the entire length of a block under most conditions without relying on fuel reserves.
- **Maybe**: The bus may complete the block but could occasionally require fuel reserves. This classification also applies to blocks that may be feasible if refueling is possible during layovers.
- **Unfeasible**: The bus is unlikely to complete the block without depleting fuel reserves unless major operational adjustments are made. These could include splitting the block, modifying schedules, reducing trips, or shortening the route.

TABLE C-10: CURRENT ALTERNATIVE FUEL VEHICLE FEASIBILITY BY WEEKDAY BLOCK

Block	Hydrogen FCE	CNG	Biodiesel	Hybrid Diesel Electric
1	Unfeasible	Feasible	Feasible	Feasible
2/20	Unfeasible	Feasible	Feasible	Feasible
3	Unfeasible	Feasible	Feasible	Feasible
4	Unfeasible	Unfeasible	Unfeasible	Maybe
5	Maybe	Feasible	Feasible	Feasible
6	Unfeasible	Feasible	Feasible	Feasible
7	Maybe	Feasible	Feasible	Feasible
8	Feasible	Feasible	Feasible	Feasible
9	Maybe	Feasible	Feasible	Feasible
10	Unfeasible	Maybe	Feasible	Feasible
11	Feasible	Feasible	Feasible	Feasible
12	Maybe	Feasible	Feasible	Feasible
13	Feasible	Feasible	Feasible	Feasible
15/21	Maybe	Feasible	Feasible	Feasible
16	Maybe	Feasible	Feasible	Feasible
17	Feasible	Feasible	Feasible	Feasible
18	Maybe	Feasible	Feasible	Feasible
19	Maybe	Feasible	Feasible	Feasible
22	Feasible	Feasible	Feasible	Feasible

Table C-11: Current Alternative Fuel Vehicle Feasibility by Saturday Block

Block	Hydrogen FCE	CNG	Biodiesel	Hybrid Diesel Electric
1	Unfeasible	Feasible	Feasible	Feasible
2	Maybe	Feasible	Feasible	Feasible
3	Unfeasible	Feasible	Feasible	Feasible
4	Unfeasible	Unfeasible	Unfeasible	Maybe
5	Maybe	Feasible	Feasible	Feasible
6	Unfeasible	Feasible	Feasible	Feasible
7	Maybe	Feasible	Feasible	Feasible
8	Feasible	Feasible	Feasible	Feasible
9	Maybe	Feasible	Feasible	Feasible
10	Feasible	Feasible	Feasible	Feasible
11	Maybe	Feasible	Feasible	Feasible
12	Maybe	Feasible	Feasible	Feasible
13	Feasible	Feasible	Feasible	Feasible
15	Maybe	Feasible	Feasible	Feasible
16	Feasible	Feasible	Feasible	Feasible
17	Maybe	Feasible	Feasible	Feasible
18	Unfeasible	Feasible	Feasible	Feasible

Table C-12: Current Alternative Fuel Vehicle Feasibility by Sunday Block

Block	Hydrogen FCE	CNG	Biodiesel	Hybrid Diesel Electric
1	Unfeasible	Feasible	Feasible	Feasible
2	Feasible	Feasible	Feasible	Feasible
3	Maybe	Feasible	Feasible	Feasible
4	Feasible	Feasible	Feasible	Feasible
5	Feasible	Feasible	Feasible	Feasible
6	Maybe	Feasible	Feasible	Feasible
7	Feasible	Feasible	Feasible	Feasible
8	Feasible	Feasible	Feasible	Feasible
9	Feasible	Feasible	Feasible	Feasible
10	Feasible	Feasible	Feasible	Feasible
11	Feasible	Feasible	Feasible	Feasible
12	Feasible	Feasible	Feasible	Feasible
13	Feasible	Feasible	Feasible	Feasible

C.1.2 Demand Response

The following section presents feasibility results for demand response trips.

C.1.2.1 Current Electric Cutaway Feasibility

Table A-13 presents the results of this analysis by each percentile of trips. Result interpretations are the same as those for electric buses previously presented.

TABLE C-13: PERCENTAGE OF DR TRIPS SERVED FEASIBLY BY A CURRENT ELECTRIC CUTAWAY

Trips	Miles	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
First Percentile	70	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Maybe	Maybe	Maybe	Maybe	Maybe
Fifth Percentile	110	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
Tenth Percentile	135	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
First Quartile	166	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
Median	193	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
Average	196	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
Third Quartile	228	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
85th Percentile	245	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
All Trips	400	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible

C.1.2.2 Electric Results Future Scenario

Table A-14 presents the results of this analysis, indicating what percentage of trips can be served feasibly up to the tenth year from purchase for bus purchase years 2025 and 2035.

TABLE C-14: PERCENTAGE OF DR TRIPS THAT MAY BE SERVED FEASIBLY BY FUTURE ELECTRIC CUTAWAYS

Trips	Miles	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
First Percentile	70	Maybe	Maybe	Maybe	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible
Fifth Percentile	110	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
Tenth Percentile	135	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
First Quartile	166	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
Median	193	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
Average	196	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
Third Quartile	228	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
85th Percentile	245	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
All Trips	400	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible

C.1.2.3 Alternative Fuel Results

Table A-15 presents the results of the alternative fuel assessment for CNG and biodiesel fueled cutaways.

TABLE C-15: PERCENTAGE OF DR TRIPS SERVED FEASIBLY BY ALTERNATIVE FUEL CUTAWAYS

Observed Trips	Miles	CNG Cutaways	Biodiesel (Using Diesel Cutaways)
First Percentile	70	Feasible	Feasible
Fifth Percentile	110	Feasible	Feasible
Tenth Percentile	135	Feasible	Feasible
25th Percentile	165	Feasible	Feasible
Median	193	Feasible	Feasible
Average	195	Feasible	Feasible
50th Percentile	195	Feasible	Feasible
75th Percentile	230	Maybe	Feasible
85th Percentile	245	Maybe	Feasible
All Trips	400	Unfeasible	Unfeasible

C.1.3 Equipment/Support Vehicle

Equipment/Support Vehicle data was presented sufficiently in the document and will not be presented here.

C.2 Additional Data

Table A-16 presents the assumptions used for the electric vehicle analysis. These assumptions are provided by vehicle length and type to help provide reference to Collier Area Transit regarding the mileage limit recommendations for nominal and strenuous conditions. In this way, if CAT wishes to analyze blocks in the future, CAT can use these figures as reference to the suggested maximum operational mileage that they should operate their electric vehicles on for vehicles purchased in or near 2025.

Service Range (in miles) for Vehicles Purchased in 2025												
Vehicle	**Condition**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
30’ Bus	**Nominal**	141	137	135	131	129	126	123	121	118	116	113
	Strenuous	121	119	116	114	111	109	107	104	102	100	98
35’ Bus	**Nominal**	171	168	164	161	157	154	150	147	144	141	138
	Strenuous	148	145	142	139	136	133	130	127	124	122	119
40’ Bus	**Nominal**	205	201	197	192	189	185	181	177	173	170	166
	Strenuous	178	174	170	166	163	160	156	153	150	147	143
Cutaways	**Nominal**	90	89	87	86	83	81	80	78	77	74	72
	Strenuous	78	77	75	74	72	70	69	67	66	64	62
Minivan	**All**	111										
SUV	**All**	223										
Pickup Truck	**All**	168										

APPENDIX D FEASIBILITY ANALYSIS RESULTS (686 KWH BATTERY)

This appendix to Task 6 for ZEV feasibility details the results generated for the 35-foot Gillig Battery Electric bus model, with a manufacturer battery capacity of 686 kWh.

CAT has procured an electric Gillig bus which at the time of this writing is being built. Notably, the bus has a significantly higher capacity than the average electric bus models available in the current market. This is due to the fact that the technology employed in the development of this battery includes new materials that greatly improve upon much of the lithium batteries available in the market. These lithium-ion nickel, manganese, and cobalt (NMC) batteries are new in the market and have not been broadly adopted but are expected to be the new standard in the very near-future, replacing the lithium iron phosphate (LFP) composition in many batteries currently in production for electric vehicles. NMC batteries have an increased energy density compared to LFP batteries, meaning that they have a higher energy capacity. While NMC batteries improve on the existing battery capacity that is available among LFP batteries, they do not improve the battery's cycle life. This essentially means that NMC batteries will degrade more rapidly for every recharging cycle, leading to a larger variation in a vehicle's service range over the years.

NMC batteries are impacted by two major factors, heat, and state of charge (SoC). NMC batteries are more sensitive to heat than LFP batteries. This is because the internal materials used breakdown faster when exposed to high temperatures, reducing the battery's lifecycle. The range at which significant degradation occurs over NMC batteries is above 86 degrees Fahrenheit, which is important to consider in Collier County where the mean daily maximum temperatures reach 86 degrees Fahrenheit or higher between May and October. Fast charging through direct current (DC) chargers can also have an impact over battery degradation as DC charging generates more heat than slow charging methods.

NMC batteries are also more sensitive to SoC management. Keeping a battery fully recharged for prolonged periods can degrade the battery over time. Research suggests that maintaining batteries charged at 80 to 90% optimizes the battery's lifespan.

In order to examine the feasibility of the 35-foot Gillig bus, a few assumptions will be adjusted, mostly those that model battery degradation. The starting battery capacity will be 686 kWh, and the battery will be modeled for a 10-year period. In order to model battery degradation better for this battery, a 4% annual degradation factor will be implemented. No SoC assumptions will be made, with the model reflecting maximum battery recharge.

TABLE D-1: BATTERY LIFE AND DEGRADATION ASSUMPTIONS (35 FOOT GILLIG)

Variable	Description	Assumption
% of Original Capacity	Percentage of the original battery's capacity that is useable at the end of battery life	**60%**
Useful Life of Battery	The number of years of a battery's useful lifecycle	10 years
Annual Degradation	The annual Rate of Battery Degradation	**-4%**
Reserve Energy (kWh)	Estimated energy required to travel approximately 10 miles to the depot from an on-route location; a "safety net" to	20 kWh

Variable	Description	Assumption
	ensure the bus can return to the depot if a bus experiences an issue on-route, causing it to use more energy than expected.	
New Battery Scenario (2025)		
Total Battery Energy (kWh)	The total energy contained in the battery upon purchase	**686 kWh**
Useable Energy (kWh)	The total energy that can be withdrawn from a new battery before needing to stop	**549 kWh**
Service Energy (kWh)	Maximum energy that should be used in revenue service for buses with new batteries ("Useable Energy" minus "Reserve Energy")	**529 kWh**
End of Life Battery Scenario (2035)		
Total Battery Energy (kWh)	The total energy contained in the battery at the end of battery life	**487 kWh**
Useable Energy (kWh)	The total energy that can be withdrawn from the battery before needing to stop	**366 kWh**
Service Energy (kWh)	Maximum energy that should be used in revenue service (Useable Energy minus Reserve Energy)	**346 kWh**

** All assumptions in bold have changed from the 35' model used for the feasibility analysis*

D.1 Model Results

The following section presents the detailed results of the block feasibility model for the 35-foot electric Gillig Bus with a 686-kWh battery capacity. The tables present the results from the battery electric bus model for fixed route vehicle blocks split by day of operation.

D.1.1 Fixed Route Block Results

The following presents results from the model for all fixed route block analysis.

D.1.1.1 Current Electric Bus Feasibility

Table D-2 through Table D-4 show the model results and demonstrate their feasibility by day of week. Results can be interpreted as follows:

- **Feasible**: bus can feasibly operate the entire length of a block in strenuous conditions without tapping into reserve energy even after the potential amount of battery degradation in that given model year.
- **Maybe**: The bus may be able to operate but could potentially run into occasional issues where the reserve energy may need to be used. This indicator can also suggest the feasibility of a block if in-route or off-route charging were implemented.
- **Unfeasible**: The bus will likely fail to operate the entire length of a block unless major operational changes are made such as splitting a block, adjusting scheduled operations, reducing number of trips, or making the alignment shorter.

Table D-5 summarizes the results.

Table D-2: Weekday Service Model for 35-Foot 686 kWh Battery Electric Buses (2025)

Block	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
1	Maybe	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
2/20	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
3	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
4	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
5	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
6	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
7	Feasible	Maybe	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
8	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Maybe	Maybe	Maybe	Maybe
9	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Maybe	Maybe	Maybe	Unfeasible
10	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
11	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Maybe	Maybe	Maybe	Maybe
12	Feasible	Maybe	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
13	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible
15/21	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Maybe	Maybe	Maybe	Unfeasible
16	Feasible	Feasible	Maybe	Maybe	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
17	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible
18	Feasible	Feasible	Maybe	Maybe	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
19	Feasible	Feasible	Feasible	Feasible	Maybe	Maybe	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible
22	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible

Table D-3: Saturday Service Model for 35-Foot 686 kWh Battery Electric Buses (2025)

Block	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
1	Maybe	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
2	Feasible	Feasible	Feasible	Feasible	Feasible	Maybe	Maybe	Maybe	Maybe	Unfeasible	Unfeasible
3	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
4	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
5	Feasible	Feasible	Feasible	Maybe	Maybe	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible
6	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
7	Feasible	Maybe	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
8	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Maybe	Maybe	Maybe	Maybe
9	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Maybe	Maybe	Maybe	Unfeasible
10	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Maybe	Maybe
11	Feasible	Feasible	Feasible	Maybe	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
12	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Maybe	Maybe	Maybe	Maybe	Unfeasible
13	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Maybe	Maybe	Maybe	Maybe
15	Feasible	Feasible	Maybe	Maybe	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
16	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible
17	Feasible	Feasible	Maybe	Maybe	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
18	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible

Table D-4: Sunday Service Model for 35-Foot 686 kWh Battery Electric Buses (2025)

Block	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
1	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
2	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible
3	Feasible	Feasible	Maybe	Maybe	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible	Unfeasible	Unfeasible
4	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible
5	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible
6	Feasible	Feasible	Feasible	Feasible	Maybe	Maybe	Maybe	Maybe	Unfeasible	Unfeasible	Unfeasible
7	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible
8	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible
9	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible
10	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible
11	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible
12	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible
13	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Feasible	Maybe	Maybe	Maybe

Table D-5: Currently Feasible Blocks by Operation Day

Block	Vehicle Length	Block Feasibility by Operation Day		
		Weekday	Saturday	Sunday
1	35'			
2/20	35'			✓
3	35'			
4	**35'**			✓
5	**35'**			✓
6	35'			
7	35'			✓
8	35'	!	!	✓
9	35'			✓
10	35'		!	✓
11	35'	!		✓
12	35'			✓
13	**35'**	✓	!	!
15/21	35'			
16	35'		✓	
17	35'	✓		
18	**35'**			
19	35'			
22	35'	✓		

✓ = Feasible ! = Maybe Feasible

Based on the results of the service modeling, only three weekday blocks are feasible through 2035: Blocks 13, 17, and 22, and four blocks may possibly be feasible (8, 9, 11, and 15/21) up to 2035. On Saturdays, Block 16 is feasible, and five blocks may possibly be feasible. On Sundays, only blocks 1, 3, and 6 are not feasible.

D.1.1.2 Future Electric Bus Feasibility

Figures D-1 through D-3 demonstrate how many blocks will be feasible up to the tenth year from purchase for bus purchase years 2025 and 2035 due to continued improvements on the 686 kWh battery. Table D-6 summarizes the results.

FIGURE D-1: 35-FOOT WEEKDAY BLOCKS 10-YEAR FEASIBILITY (2035)

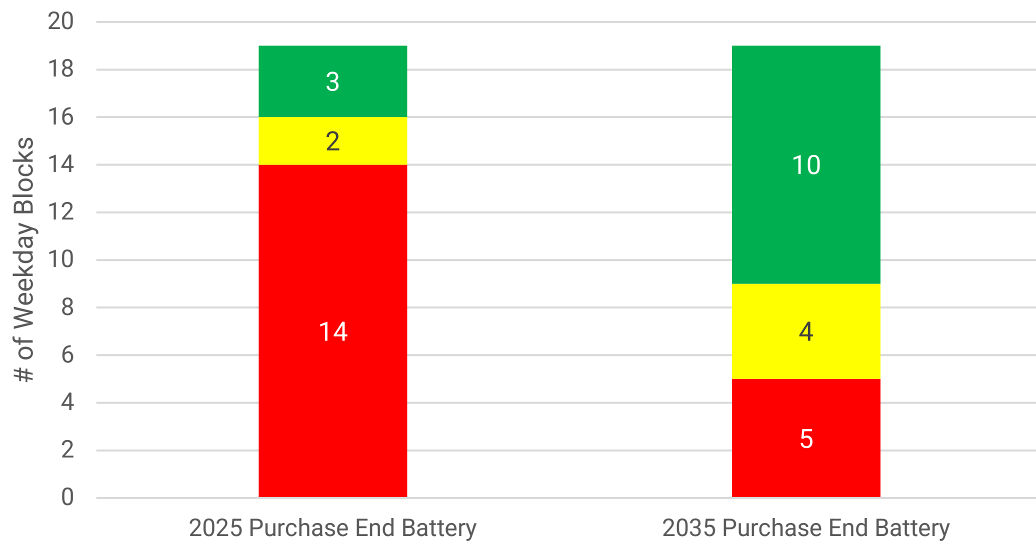


FIGURE D-2: 35-FOOT SATURDAY BLOCKS 10-YEAR FEASIBILITY (2035)

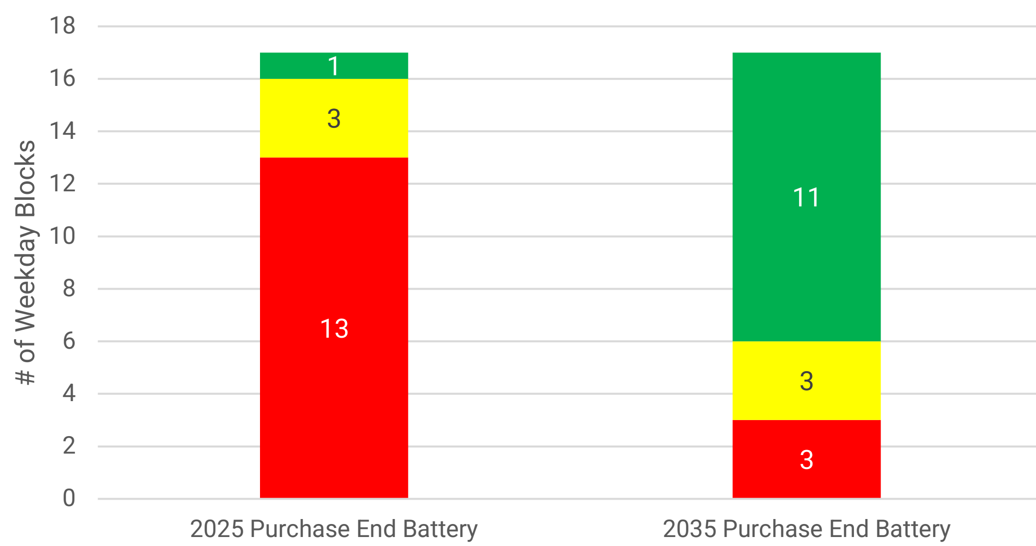


Figure D-3: 35-Foot Sunday Blocks 10-Year Feasibility (2035)

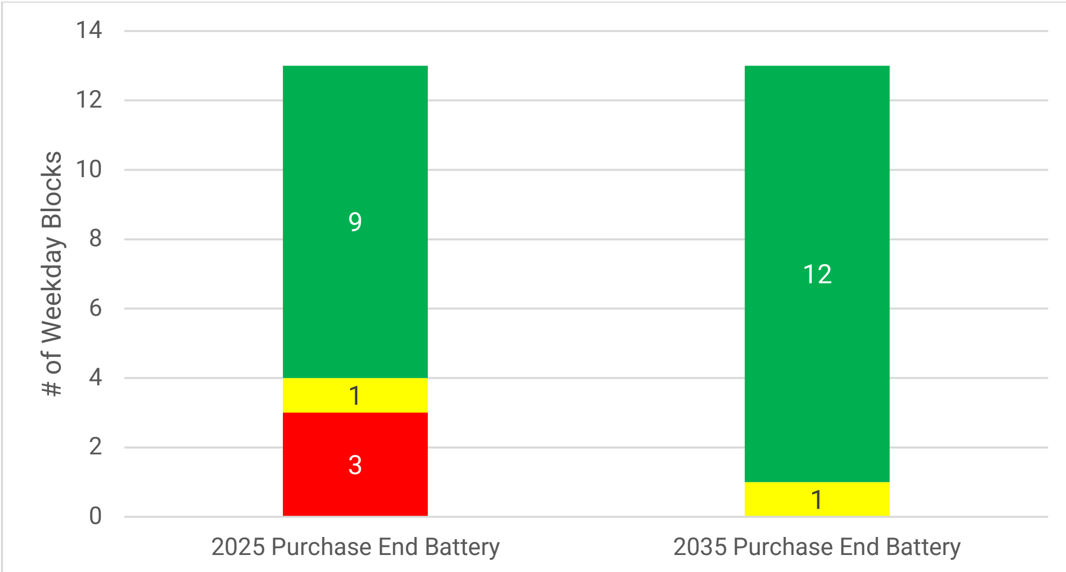


Table D-6: Future Feasible Blocks by Operation Day for Purchase Years 2025 and 2035

Block	Vehicle Length	Block Feasibility by Operation Day					
		Weekday		Saturday		Sunday	
		2025	2035	2025	2035	2025	2035
1	35’		!		!		!
2/20	35’				✓	✓	✓
3	35’						✓
4	**35’**					✓	✓
5	**35’**				✓	✓	✓
6	35’		!		!		✓
7	35’		!		!	✓	✓
8	35’	!	✓	!	✓	✓	✓
9	35’		✓		✓	✓	✓
10	35’			!	✓	✓	✓
11	35’	!	✓		✓	✓	✓
12	35’		!		✓	✓	✓
13	**35’**	✓	✓	!	✓	!	✓
15/21	35’		✓		✓		
16	35’		✓	✓	✓		
17	35’	✓	✓		✓		
18	**35’**		✓				
19	35’		✓				
22	35’	✓	✓				

✓ *= Feasible* ! *= Maybe Feasible*

Based on the results of the service modeling, 10 total weekday blocks would become feasible by 2035 and four may be feasible. These latter blocks can benefit from additional in route charging support, making them fully feasible with the increased battery capacity

D.1.1.3 Electric Re-Charging Scenario

An electric on-route recharging scenario was also assessed over this current configuration. Several weekday blocks were selected for further analysis to understand the impact of mid-route recharging.

Results from this analysis are documented were extracted from excel for each block configuration analyzed. The following briefly describes the selected routes and the assessment.

- **Block 1** Neither in the current scenario nor in the future scenario does Block 1 confidently complete a trip in the most strenuous circumstance. This would lead to failure in a worst-case scenario.
- **Block 2/20** in the current scenario would not benefit from recharging at the CAT Operations Center after the fifth year of purchase, when battery degradation will have impacted recharging capacity significantly. However, Block 2/20 is expected to benefit from recharging starting in a future scenario.
- **Block 3** in the current scenario would not benefit from recharging at the CAT Operations Center after the fifth year of purchase, when battery degradation will have impacted recharging capacity significantly. However, Block 3 is expected to benefit from recharging starting in a future scenario.
- **Block 4** Neither in the current scenario nor in the future scenario does Block 4 confidently complete a trip in the most strenuous circumstance. This would lead to failure in a worst-case scenario.
- **Block 5** Neither in the current scenario nor in the future scenario does Block 5 confidently complete a trip in the most strenuous circumstance. This would lead to failure in a worst-case scenario.
- **Block 7** would comfortably benefit from on-route charging at the Government Center through the 10th year in the current scenario. Considerations include the addition of chargers at the transfer station.
- **Block 12** Neither in the current scenario nor in the future scenario does Block 12 confidently complete a trip in the most strenuous circumstance. This would lead to failure in a worst-case scenario.
- **Block 16** would comfortably benefit from on-route charging at the Immokalee Transfer Stations through the 10th year in the current scenario. Considerations include the addition of chargers at the transfer station.
- **Block 18** would comfortably benefit from on-route charging at the Immokalee Transfer Stations through the 9th year in the current scenario. It's recommended to add 5 minutes in layover before the final deadhead, especially in the later years of the purchase. Considerations include the addition of chargers at the transfer station.

It is expected that the on-route charging approach will allow 3 blocks (7, 16 and 18) to operate comfortably with Battery Electric Buses. Two additional blocks (2/20 and 3) will become feasible through on-route charging in a future scenario. Detailed results can be found in the following pages.

Battery Electric Bus Recharge Calulator

Block Profile	2/20	*ID*
Vehicle Size	35' Gillig (686 kWh)	*30, 35, 40 feet*
Starting Charge (Strenous Mileage Yr. 1)	247	
Starting Charge (Strenous Mileage Yr. 5)	200	
Starting Charge (Strenous Mileage Yr. 10)	162	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	CAT Ops	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	1	0	247	246	Can Make This Trip	200	199	Can Make This Trip	162	161	Can Make This Trip
First Round Trip	30.2	0	246	215.8	Can Make This Trip	199	168.8	Can Make This Trip	161	130.8	Can Make This Trip
Second Round Trip	30.2	0	215.8	185.6	Can Make This Trip	168.8	138.6	Can Make This Trip	130.8	100.6	Can Make This Trip
Third Round Trip	30.2	0	185.6	155.4	Can Make This Trip	138.6	108.4	Can Make This Trip	100.6	70.4	Can Make This Trip
Fourth Round Trip	30.2	0	155.4	125.2	Can Make This Trip	108.4	78.2	Can Make This Trip	70.4	40.2	Can Make This Trip
Fifth Round Trip	30.2	0	125.2	95	Can Make This Trip	78.2	48	Can Make This Trip	40.2	10	Can Make This Trip
Deadhead	1	0	95	94	Can Make This Trip	48	47	Can Make This Trip	10	9	Can Make This Trip
Layover at CAT Ops Center	0	80	94	174	Can Make This Trip	47	127	Can Make This Trip	9	89	Can Make This Trip
Deadhead	1	0	174	173	Can Make This Trip	127	126	Can Make This Trip	89	88	Can Make This Trip
Sixth Round Trip	30.2	0	173	142.8	Can Make This Trip	126	95.8	Can Make This Trip	88	57.8	Can Make This Trip
Seventh Round Trip	30.2	0	142.8	112.6	Can Make This Trip	95.8	65.6	Can Make This Trip	57.8	27.6	Can Make This Trip
Deadhead	1	0	112.6	111.6	Can Make This Trip	65.6	64.6	Can Make This Trip	27.6	26.6	Can Make This Trip
Eighth Round Trip	43.9	0	111.6	67.7	Can Make This Trip	64.6	20.7	Can Make This Trip	26.6	-17.3	Cannot Complete Trip
End Deadhead	43.9	0	67.7	23.8	Can Make This Trip	20.7	-23.2	Cannot Complete Trip	-17.3	-61.2	Cannot Complete Trip
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	2/20	*ID*
Vehicle Size	35' Gillig (686 kWh)	*30, 35, 40 feet*
Starting Charge 2035 (Strenous Mileage Yr. 10)	162	
Starting Charge 2040 (Strenous Mileage Yr. 10)	193	
Starting Charge 2045 (Strenous Mileage Yr. 10)	232	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	CAT Ops	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	1	0	162	161	Can Make This Trip	193	192	Can Make This Trip	232	231	Can Make This Trip
First Round Trip	30.2	0	161	130.8	Can Make This Trip	192	161.8	Can Make This Trip	231	200.8	Can Make This Trip
Second Round Trip	30.2	0	130.8	100.6	Can Make This Trip	161.8	131.6	Can Make This Trip	200.8	170.6	Can Make This Trip
Third Round Trip	30.2	0	100.6	70.4	Can Make This Trip	131.6	101.4	Can Make This Trip	170.6	140.4	Can Make This Trip
Fourth Round Trip	30.2	0	70.4	40.2	Can Make This Trip	101.4	71.2	Can Make This Trip	140.4	110.2	Can Make This Trip
Fifth Round Trip	30.2	0	40.2	10	Can Make This Trip	71.2	41	Can Make This Trip	110.2	80	Can Make This Trip
Deadhead	1	0	10	9	Can Make This Trip	41	40	Can Make This Trip	80	79	Can Make This Trip
Layover at CAT Ops Center	0	80	9	89	Can Make This Trip	40	120	Can Make This Trip	79	159	Can Make This Trip
Deadhead	1	0	89	88	Can Make This Trip	120	119	Can Make This Trip	159	158	Can Make This Trip
Sixth Round Trip	30.2	0	88	57.8	Can Make This Trip	119	88.8	Can Make This Trip	158	127.8	Can Make This Trip
Seventh Round Trip	30.2	0	57.8	27.6	Can Make This Trip	88.8	58.6	Can Make This Trip	127.8	97.6	Can Make This Trip
Deadhead	1	0	27.6	26.6	Can Make This Trip	58.6	57.6	Can Make This Trip	97.6	96.6	Can Make This Trip
Eighth Round Trip	43.9	0	26.6	-17.3	Cannot Complete Trip	57.6	13.7	Can Make This Trip	96.6	52.7	Can Make This Trip
End Deadhead	43.9	0	-17.3	-61.2	Cannot Complete Trip	13.7	-30.2	Cannot Complete Trip	52.7	8.8	Can Make This Trip
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	5	*ID*
Vehicle Size	35' Gillig (686 kWh)	*30, 35, 40 feet*
Starting Charge (Strenous Mileage Yr. 1)	247	
Starting Charge (Strenous Mileage Yr. 5)	200	
Starting Charge (Strenous Mileage Yr. 10)	162	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Government Center	

Round Trip	Trip Length before Layover	Layover Time in minutes at End of Trip	Miles	Miles Left	Yr 1 Assessment	Miles	Miles Left	Yr 5 Assessment	Miles	Miles Left	Yr 10 Assessment
Initial Deadhead	0	0	247	247	Can Make This Trip	200	200	Can Make This Trip	162	162	Can Make This Trip
First Trip	6.3	3	247	243.7	Can Make This Trip	200	196.7	Can Make This Trip	162	158.7	Can Make This Trip
Second Round Trip	42.2	9	243.7	210.5	Can Make This Trip	196.7	163.5	Can Make This Trip	158.7	125.5	Can Make This Trip
Third Round Trip	42.2	7	210.5	175.3	Can Make This Trip	163.5	128.3	Can Make This Trip	125.5	90.3	Can Make This Trip
Fourth Round Trip	42.2	10	175.3	143.1	Can Make This Trip	128.3	96.1	Can Make This Trip	90.3	58.1	Can Make This Trip
Fifth Round Trip	42.2	11	143.1	111.9	Can Make This Trip	96.1	64.9	Can Make This Trip	58.1	26.9	Can Make This Trip
Sixth Round Trip	42.2	10	111.9	79.7	Can Make This Trip	64.9	32.7	Can Make This Trip	26.9	-5.3	Running on Reserve Energy
Seventh Round Trip	42.2	9	79.7	46.5	Can Make This Trip	32.7	-0.5	Running on Reserve Energy	-5.3	-38.5	Cannot Complete Trip
Eighth Round Trip	42.2	9	46.5	13.3	Can Make This Trip	-0.5	-33.7	Cannot Complete Trip	-38.5	-71.7	Cannot Complete Trip
Ninth Round Trip	42.2	8	13.3	-20.9	Cannot Complete Trip	-33.7	-67.9	Cannot Complete Trip	-71.7	-105.9	Cannot Complete Trip
Last Trip	35.9	0	-20.9	-56.8	Cannot Complete Trip	-67.9	-103.8	Cannot Complete Trip	-105.9	-141.8	Cannot Complete Trip
End Deadhead	0	0	-56.8	-56.8	Cannot Complete Trip	-103.8	-103.8	Cannot Complete Trip	-141.8	-141.8	Cannot Complete Trip
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	5	*ID*
Vehicle Size	35' Gillig (686 kWh)	*30, 35, 40 feet*
Starting Charge 2035 (Strenous Mileage Yr. 10)	162	
Starting Charge 2040 (Strenous Mileage Yr. 10)	193	
Starting Charge 2045 (Strenous Mileage Yr. 10)	232	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Government Center	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	0	0	162	162	Can Make This Trip	193	193	Can Make This Trip	232	232	Can Make This Trip
First Trip	6.3	3	162	158.7	Can Make This Trip	193	189.7	Can Make This Trip	232	228.7	Can Make This Trip
Second Round Trip	42.2	9	158.7	125.5	Can Make This Trip	189.7	156.5	Can Make This Trip	228.7	195.5	Can Make This Trip
Third Round Trip	42.2	7	125.5	90.3	Can Make This Trip	156.5	121.3	Can Make This Trip	195.5	160.3	Can Make This Trip
Fourth Round Trip	42.2	10	90.3	58.1	Can Make This Trip	121.3	89.1	Can Make This Trip	160.3	128.1	Can Make This Trip
Fifth Round Trip	42.2	11	58.1	26.9	Can Make This Trip	89.1	57.9	Can Make This Trip	128.1	96.9	Can Make This Trip
Sixth Round Trip	42.2	10	26.9	-5.3	Running on Reserve Energy	57.9	25.7	Can Make This Trip	96.9	64.7	Can Make This Trip
Seventh Round Trip	42.2	9	-5.3	-38.5	Cannot Complete Trip	25.7	-7.5	Running on Reserve Energy	64.7	31.5	Can Make This Trip
Eighth Round Trip	42.2	9	-38.5	-71.7	Cannot Complete Trip	-7.5	-40.7	Cannot Complete Trip	31.5	-1.7	Running on Reserve Energy
Ninth Round Trip	42.2	8	-71.7	-105.9	Cannot Complete Trip	-40.7	-74.9	Cannot Complete Trip	-1.7	-35.9	Cannot Complete Trip
Last Trip	35.9	0	-105.9	-141.8	Cannot Complete Trip	-74.9	-110.8	Cannot Complete Trip	-35.9	-71.8	Cannot Complete Trip
End Deadhead	0	0	-141.8	-141.8	Cannot Complete Trip	-110.8	-110.8	Cannot Complete Trip	-71.8	-71.8	Cannot Complete Trip
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	16	*ID*
Vehicle Size	35' Gillig (686 kWh)	*30, 35, 40 feet*
Starting Charge (Strenous Mileage Yr. 1)	247	
Starting Charge (Strenous Mileage Yr. 5)	200	
Starting Charge (Strenous Mileage Yr. 10)	162	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Immokalee	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	37.2	0	247	209.8	Can Make This Trip	200	162.8	Can Make This Trip	162	124.8	Can Make This Trip
First Round Trip	3	80	209.8	247	Can Make This Trip	162.8	200	Can Make This Trip	124.8	162	Can Make This Trip
Second Round Trip	22.2	12	247	236.8	Can Make This Trip	200	189.8	Can Make This Trip	162	151.8	Can Make This Trip
Third Round Trip	22.2	12	236.8	226.6	Can Make This Trip	189.8	179.6	Can Make This Trip	151.8	141.6	Can Make This Trip
Fourth Round Trip	22.2	12	226.6	216.4	Can Make This Trip	179.6	169.4	Can Make This Trip	141.6	131.4	Can Make This Trip
Fifth Round Trip	22.2	12	216.4	206.2	Can Make This Trip	169.4	159.2	Can Make This Trip	131.4	121.2	Can Make This Trip
Sixth Round Trip	22.2	12	206.2	196	Can Make This Trip	159.2	149	Can Make This Trip	121.2	111	Can Make This Trip
Seventh Round Trip	22.2	12	196	185.8	Can Make This Trip	149	138.8	Can Make This Trip	111	100.8	Can Make This Trip
Eighth Round Trip	22.2	12	185.8	175.6	Can Make This Trip	138.8	128.6	Can Make This Trip	100.8	90.6	Can Make This Trip
Ninth Round Trip	22.2	0	175.6	153.4	Can Make This Trip	128.6	106.4	Can Make This Trip	90.6	68.4	Can Make This Trip
End Deadhead	37.2	0	153.4	116.2	Can Make This Trip	106.4	69.2	Can Make This Trip	68.4	31.2	Can Make This Trip
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	18	*ID*
Vehicle Size	35' Gillig (686 kWh)	*30, 35, 40 feet*
Starting Charge (Strenous Mileage Yr. 1)	247	
Starting Charge (Strenous Mileage Yr. 5)	200	
Starting Charge (Strenous Mileage Yr. 10)	162	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Immokalee	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	35.6	0	247	211.4	Can Make This Trip	200	164.4	Can Make This Trip	162	126.4	Can Make This Trip
First Round Trip	22.2	12	211.4	201.2	Can Make This Trip	164.4	154.2	Can Make This Trip	126.4	116.2	Can Make This Trip
Second Round Trip	22.2	12	201.2	191	Can Make This Trip	154.2	144	Can Make This Trip	116.2	106	Can Make This Trip
Third Round Trip	22.2	12	191	180.8	Can Make This Trip	144	133.8	Can Make This Trip	106	95.8	Can Make This Trip
Fourth Round Trip	22.2	12	180.8	170.6	Can Make This Trip	133.8	123.6	Can Make This Trip	95.8	85.6	Can Make This Trip
Fifth Round Trip	22.2	12	170.6	160.4	Can Make This Trip	123.6	113.4	Can Make This Trip	85.6	75.4	Can Make This Trip
Sixth Round Trip	22.2	12	160.4	150.2	Can Make This Trip	113.4	103.2	Can Make This Trip	75.4	65.2	Can Make This Trip
Seventh Round Trip	22.2	12	150.2	140	Can Make This Trip	103.2	93	Can Make This Trip	65.2	55	Can Make This Trip
Eighth Round Trip	22.2	0	140	117.8	Can Make This Trip	93	70.8	Can Make This Trip	55	32.8	Can Make This Trip
End Deadhead	35.6	0	117.8	82.2	Can Make This Trip	70.8	35.2	Can Make This Trip	32.8	-2.8	Running on Reserve Energy
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	7	*ID*
Vehicle Size	35' Gillig (686 kWh)	*30, 35, 40 feet*
Starting Charge (Strenous Mileage Yr. 1)	247	
Starting Charge (Strenous Mileage Yr. 5)	200	
Starting Charge (Strenous Mileage Yr. 10)	162	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Governmenrt Center	

Round Trip	Trip Length before Layover	Layover Time in minutes at End of Trip	Miles	Miles Left	Yr 1 Assessment	Miles	Miles Left	Yr 5 Assessment	Miles	Miles Left	Yr 10 Assessment
Initial Deadhead	0	0	247	247	Can Make This Trip	200	200	Can Make This Trip	162	162	Can Make This Trip
First Round Trip	6.3	7	247	247	Can Make This Trip	200	200	Can Make This Trip	162	162	Can Make This Trip
Second Round Trip	28.3	7	247	225.7	Can Make This Trip	200	178.7	Can Make This Trip	162	140.7	Can Make This Trip
Third Round Trip	28.3	7	225.7	204.4	Can Make This Trip	178.7	157.4	Can Make This Trip	140.7	119.4	Can Make This Trip
Fourth Round Trip	28.3	12	204.4	188.1	Can Make This Trip	157.4	141.1	Can Make This Trip	119.4	103.1	Can Make This Trip
Fifth Round Trip	28.3	12	188.1	171.8	Can Make This Trip	141.1	124.8	Can Make This Trip	103.1	86.8	Can Make This Trip
Sixth Round Trip	28.3	12	171.8	155.5	Can Make This Trip	124.8	108.5	Can Make This Trip	86.8	70.5	Can Make This Trip
Seventh Round Trip	28.3	12	155.5	139.2	Can Make This Trip	108.5	92.2	Can Make This Trip	70.5	54.2	Can Make This Trip
Eighth Round Trip	28.3	12	139.2	122.9	Can Make This Trip	92.2	75.9	Can Make This Trip	54.2	37.9	Can Make This Trip
Ninth Round Trip	28.3	12	122.9	106.6	Can Make This Trip	75.9	59.6	Can Make This Trip	37.9	21.6	Can Make This Trip
Tenth Round Trip	28.3	12	106.6	90.3	Can Make This Trip	59.6	43.3	Can Make This Trip	21.6	5.3	Can Make This Trip
Eleventh Round Trip	22	0	90.3	68.3	Can Make This Trip	43.3	21.3	Can Make This Trip	5.3	-16.7	Cannot Complete Trip
End Deadhead	0	0	68.3	68.3	Can Make This Trip	21.3	21.3	Can Make This Trip	-16.7	-16.7	Cannot Complete Trip
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed
					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	4	*ID*
Vehicle Size	35' Gillig (686 kWh)	*30, 35, 40 feet*
Starting Charge (Strenous Mileage Yr. 1)	247	
Starting Charge (Strenous Mileage Yr. 5)	200	
Starting Charge (Strenous Mileage Yr. 10)	162	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Government Center	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	0	0	247	247	Can Make This Trip	200	200	Can Make This Trip	162	162	Can Make This Trip
First Round Trip	70.8	12	247	188.2	Can Make This Trip	200	141.2	Can Make This Trip	162	103.2	Can Make This Trip
Second Round Trip	80.8	11	188.2	118.4	Can Make This Trip	141.2	71.4	Can Make This Trip	103.2	33.4	Can Make This Trip
Third Round Trip	80.8	14	118.4	51.6	Can Make This Trip	71.4	4.6	Can Make This Trip	33.4	-33.4	Cannot Complete Trip
Fourth Round Trip	80.8	9	51.6	-20.2	Cannot Complete Trip	4.6	-67.2	Cannot Complete Trip	-33.4	-105.2	Cannot Complete Trip
Fifth Round Trip	80.8	13	-20.2	-88	Cannot Complete Trip	-67.2	-135	Cannot Complete Trip	-105.2	-173	Cannot Complete Trip
Sixth Round Trip	80.8	0	-88	-168.8	Cannot Complete Trip	-135	-215.8	Cannot Complete Trip	-173	-253.8	Cannot Complete Trip
Deadhead	10	0	-168.8	-178.8	Cannot Complete Trip	-215.8	-225.8	Cannot Complete Trip	-253.8	-263.8	Cannot Complete Trip
Deadhead					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Deadhead					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eighth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
End Deadhead					Trip Not Needed			Trip Not Needed			Trip Not Needed
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	4	*ID*
Vehicle Size	35' Gillig (686 kWh)	*30, 35, 40 feet*
Starting Charge 2035 (Strenous Mileage Yr. 10)	162	
Starting Charge 2040 (Strenous Mileage Yr. 10)	193	
Starting Charge 2045 (Strenous Mileage Yr. 10)	232	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Government Center	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	0	0	162	162	Can Make This Trip	193	193	Can Make This Trip	232	232	Can Make This Trip
First Round Trip	70.8	12	162	103.2	Can Make This Trip	193	134.2	Can Make This Trip	232	173.2	Can Make This Trip
Second Round Trip	80.8	11	103.2	33.4	Can Make This Trip	134.2	64.4	Can Make This Trip	173.2	103.4	Can Make This Trip
Third Round Trip	80.8	14	33.4	-33.4	Cannot Complete Trip	64.4	-2.4	Running on Reserve Energy	103.4	36.6	Can Make This Trip
Fourth Round Trip	80.8	9	-33.4	-105.2	Cannot Complete Trip	-2.4	-74.2	Cannot Complete Trip	36.6	-35.2	Cannot Complete Trip
Fifth Round Trip	80.8	13	-105.2	-173	Cannot Complete Trip	-74.2	-142	Cannot Complete Trip	-35.2	-103	Cannot Complete Trip
Sixth Round Trip	80.8	0	-173	-253.8	Cannot Complete Trip	-142	-222.8	Cannot Complete Trip	-103	-183.8	Cannot Complete Trip
Deadhead	10	0	-253.8	-263.8	Cannot Complete Trip	-222.8	-232.8	Cannot Complete Trip	-183.8	-193.8	Cannot Complete Trip
Deadhead					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Deadhead					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eighth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
End Deadhead					Trip Not Needed			Trip Not Needed			Trip Not Needed
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	1	*ID*
Vehicle Size	35' Gillig (686 kWh)	*30, 35, 40 feet*
Starting Charge (Strenous Mileage Yr. 1)	247	
Starting Charge (Strenous Mileage Yr. 5)	200	
Starting Charge (Strenous Mileage Yr. 10)	162	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Government Center	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	1	0	247	246	Can Make This Trip	200	199	Can Make This Trip	162	161	Can Make This Trip
First Round Trip	76.2	7	246	176.8	Can Make This Trip	199	129.8	Can Make This Trip	161	91.8	Can Make This Trip
Second Round Trip	62.8	8	176.8	122	Can Make This Trip	129.8	75	Can Make This Trip	91.8	37	Can Make This Trip
Third Round Trip	62.8	12	122	71.2	Can Make This Trip	75	24.2	Can Make This Trip	37	-13.8	Cannot Complete Trip
Fourth Round Trip	62.8	9	71.2	17.4	Can Make This Trip	24.2	-29.6	Cannot Complete Trip	-13.8	-67.6	Cannot Complete Trip
Fifth Round Trip	62.8	12	17.4	-33.4	Cannot Complete Trip	-29.6	-80.4	Cannot Complete Trip	-67.6	-118.4	Cannot Complete Trip
Deadhead	62.8	10	-33.4	-86.2	Cannot Complete Trip	-80.4	-133.2	Cannot Complete Trip	-118.4	-171.2	Cannot Complete Trip
Layover at CAT Ops Center	62.8	9	-86.2	-140	Cannot Complete Trip	-133.2	-187	Cannot Complete Trip	-171.2	-225	Cannot Complete Trip
Deadhead	5.3	0	-140	-145.3	Cannot Complete Trip	-187	-192.3	Cannot Complete Trip	-225	-230.3	Cannot Complete Trip
Sixth Round Trip			-145.3	-145.3	Cannot Complete Trip	-192.3	-192.3	Cannot Complete Trip	-230.3	-230.3	Cannot Complete Trip
Seventh Round Trip			-145.3	-145.3	Cannot Complete Trip	-192.3	-192.3	Cannot Complete Trip	-230.3	-230.3	Cannot Complete Trip
Deadhead			-145.3	-145.3	Cannot Complete Trip	-192.3	-192.3	Cannot Complete Trip	-230.3	-230.3	Cannot Complete Trip
Eighth Round Trip			-145.3	-145.3	Cannot Complete Trip	-192.3	-192.3	Cannot Complete Trip	-230.3	-230.3	Cannot Complete Trip
End Deadhead			-145.3	-145.3	Cannot Complete Trip	-192.3	-192.3	Cannot Complete Trip	-230.3	-230.3	Cannot Complete Trip
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	1	*ID*
Vehicle Size	35' Gillig (686 kWh)	*30, 35, 40 feet*
Starting Charge 2035 (Strenous Mileage Yr. 10)	162	
Starting Charge 2040 (Strenous Mileage Yr. 10)	193	
Starting Charge 2045 (Strenous Mileage Yr. 10)	232	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Government Center	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	1	0	162	161	Can Make This Trip	193	192	Can Make This Trip	232	231	Can Make This Trip
First Round Trip	76.2	7	161	91.8	Can Make This Trip	192	122.8	Can Make This Trip	231	161.8	Can Make This Trip
Second Round Trip	62.8	8	91.8	37	Can Make This Trip	122.8	68	Can Make This Trip	161.8	107	Can Make This Trip
Third Round Trip	62.8	12	37	-13.8	Cannot Complete Trip	68	17.2	Can Make This Trip	107	56.2	Can Make This Trip
Fourth Round Trip	62.8	9	-13.8	-67.6	Cannot Complete Trip	17.2	-36.6	Cannot Complete Trip	56.2	2.4	Can Make This Trip
Fifth Round Trip	62.8	12	-67.6	-118.4	Cannot Complete Trip	-36.6	-87.4	Cannot Complete Trip	2.4	-48.4	Cannot Complete Trip
Deadhead	62.8	10	-118.4	-171.2	Cannot Complete Trip	-87.4	-140.2	Cannot Complete Trip	-48.4	-101.2	Cannot Complete Trip
Layover at CAT Ops Center	62.8	9	-171.2	-225	Cannot Complete Trip	-140.2	-194	Cannot Complete Trip	-101.2	-155	Cannot Complete Trip
Deadhead	5.3	0	-225	-230.3	Cannot Complete Trip	-194	-199.3	Cannot Complete Trip	-155	-160.3	Cannot Complete Trip
Sixth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Deadhead					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eighth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
End Deadhead					Trip Not Needed			Trip Not Needed			Trip Not Needed
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	3	*ID*
Vehicle Size	35' Gillig (686 kWh)	*30, 35, 40 feet*
Starting Charge (Strenous Mileage Yr. 1)	247	
Starting Charge (Strenous Mileage Yr. 5)	200	
Starting Charge (Strenous Mileage Yr. 10)	162	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	Government Center	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead (To Immokalee)	45.6	0	247	201.4	Can Make This Trip	200	154.4	Can Make This Trip	162	116.4	Can Make This Trip
Rt. 19 Express Trip	50.6	19	201.4	169.8	Can Make This Trip	154.4	122.8	Can Make This Trip	116.4	84.8	Can Make This Trip
Second Round Trip	31.4	8	169.8	146.4	Can Make This Trip	122.8	99.4	Can Make This Trip	84.8	61.4	Can Make This Trip
Third Round Trip	31.4	12	146.4	127	Can Make This Trip	99.4	80	Can Make This Trip	61.4	42	Can Make This Trip
Fourth Round Trip	31.4	9	127	104.6	Can Make This Trip	80	57.6	Can Make This Trip	42	19.6	Can Make This Trip
Fifth Round Trip	31.4	12	104.6	85.2	Can Make This Trip	57.6	38.2	Can Make This Trip	19.6	0.2	Can Make This Trip
Sixth Round Trip	31.4	10	85.2	63.8	Can Make This Trip	38.2	16.8	Can Make This Trip	0.2	-21.2	Cannot Complete Trip
Seventh Round Trip	31.4	9	63.8	41.4	Can Make This Trip	16.8	-5.6	Running on Reserve Energy	-21.2	-43.6	Cannot Complete Trip
Deadhead	5.3	0	41.4	36.1	Can Make This Trip	-5.6	-10.9	Cannot Complete Trip	-43.6	-48.9	Cannot Complete Trip
Sixth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Deadhead					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eighth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
End Deadhead					Trip Not Needed			Trip Not Needed			Trip Not Needed
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	12	*ID*
Vehicle Size	35' Gillig (686 kWh)	*30, 35, 40 feet*
Starting Charge (Strenous Mileage Yr. 1)	247	
Starting Charge (Strenous Mileage Yr. 5)	200	
Starting Charge (Strenous Mileage Yr. 10)	162	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	CAT Ops	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead (To Comm. Center)	4	0	247	243	Can Make This Trip	200	196	Can Make This Trip	162	158	Can Make This Trip
First Round Trip	32.1	0	243	210.9	Can Make This Trip	196	163.9	Can Make This Trip	158	125.9	Can Make This Trip
Second Round Trip	32.1	0	210.9	178.8	Can Make This Trip	163.9	131.8	Can Make This Trip	125.9	93.8	Can Make This Trip
Third Round Trip	32.1	0	178.8	146.7	Can Make This Trip	131.8	99.7	Can Make This Trip	93.8	61.7	Can Make This Trip
Fourth Round Trip	32.1	0	146.7	114.6	Can Make This Trip	99.7	67.6	Can Make This Trip	61.7	29.6	Can Make This Trip
Fifth Round Trip	32.1	0	114.6	82.5	Can Make This Trip	67.6	35.5	Can Make This Trip	29.6	-2.5	Running on Reserve Energy
Sixth Round Trip	32.1	0	82.5	50.4	Can Make This Trip	35.5	3.4	Can Make This Trip	-2.5	-34.6	Cannot Complete Trip
Seventh Round Trip	32.1	0	50.4	18.3	Can Make This Trip	3.4	-28.7	Cannot Complete Trip	-34.6	-66.7	Cannot Complete Trip
Eighth Round Trip	32.1	0	18.3	-13.8	Cannot Complete Trip	-28.7	-60.8	Cannot Complete Trip	-66.7	-98.8	Cannot Complete Trip
Deadhead	4	0	-13.8	-17.8	Cannot Complete Trip	-60.8	-64.8	Cannot Complete Trip	-98.8	-102.8	Cannot Complete Trip
Seventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Deadhead					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eighth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
End Deadhead					Trip Not Needed			Trip Not Needed			Trip Not Needed
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed

Battery Electric Bus Recharge Calulator

Block Profile	12	*ID*
Vehicle Size	35' Gillig (686 kWh)	*30, 35, 40 feet*
Starting Charge 2035 (Strenous Mileage Yr. 10)	162	
Starting Charge 2040 (Strenous Mileage Yr. 10)	193	
Starting Charge 2045 (Strenous Mileage Yr. 10)	232	
Charger Type	Fast	
Recharge Assumption (Miles per Minute of Recharge)	1	
Recharge Location	CAT Ops	

Round Trip	**Trip Length before Layover**	**Layover Time in minutes at End of Trip**	**Miles**	**Miles Left**	**Yr 1 Assessment**	**Miles**	**Miles Left**	**Yr 5 Assessment**	**Miles**	**Miles Left**	**Yr 10 Assessment**
Initial Deadhead	4	0	162	158	Can Make This Trip	193	189	Can Make This Trip	232	228	Can Make This Trip
First Round Trip	32.1	0	158	125.9	Can Make This Trip	189	156.9	Can Make This Trip	228	195.9	Can Make This Trip
Second Round Trip	32.1	0	125.9	93.8	Can Make This Trip	156.9	124.8	Can Make This Trip	195.9	163.8	Can Make This Trip
Third Round Trip	32.1	0	93.8	61.7	Can Make This Trip	124.8	92.7	Can Make This Trip	163.8	131.7	Can Make This Trip
Fourth Round Trip	32.1	0	61.7	29.6	Can Make This Trip	92.7	60.6	Can Make This Trip	131.7	99.6	Can Make This Trip
Fifth Round Trip	32.1	0	29.6	-2.5	Running on Reserve Energy	60.6	28.5	Can Make This Trip	99.6	67.5	Can Make This Trip
Deadhead	32.1	0	-2.5	-34.6	Cannot Complete Trip	28.5	-3.6	Running on Reserve Energy	67.5	35.4	Can Make This Trip
Layover at CAT Ops Center	32.1	0	-34.6	-66.7	Cannot Complete Trip	-3.6	-35.7	Cannot Complete Trip	35.4	3.3	Can Make This Trip
Deadhead	32.1	0	-66.7	-98.8	Cannot Complete Trip	-35.7	-67.8	Cannot Complete Trip	3.3	-28.8	Cannot Complete Trip
Sixth Round Trip	4	0			Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Deadhead					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eighth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
End Deadhead					Trip Not Needed			Trip Not Needed			Trip Not Needed
Tenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Eleventh Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twelfth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Thirteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fourteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Fifteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Sixteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Seventeenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Nineteenth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed
Twentieth Round Trip					Trip Not Needed			Trip Not Needed			Trip Not Needed

D.2 Comparison with Chapter 6 Models

In Chapter 6, Table 6-10 identifies four blocks—Blocks 4, 5, 13, and 18—that were assigned to 35-foot buses. The Chapter 6 model assumes these 35-foot buses have an original battery capacity of 420 kWh, whereas the 686-kWh bus offers nearly 270 kWh more energy capacity. Despite this increase, no improvements were observed in the ability of either model to serve these four blocks on weekdays, suggesting that the 686-kWh bus does not provide a significant advantage over the 420-kWh model in this scenario. However, improvements due to the increased battery capacity are observed on Sundays for Block 4 in the current scenario, as well as on both Saturdays and Sundays for Block 13 in both the current and future scenarios. Additionally, the 686-kWh bus improves the feasibility of Block 18 when on-route charging is available.

When compared to the smaller 30-foot buses with 350-kWh batteries, the 686-kWh model demonstrates substantial improvements in the current weekday scenarios. Most notably, it enables Block 17 to become feasible and likely improves feasibility for Blocks 8, 9, 11, and 15/21. The addition of on-route charging further enhances service feasibility for Blocks 7 and 16 when compared to the 350-kWh 30-foot buses.

Finally, when comparing the 686-kWh bus to the larger 40-foot buses with 500-kWh batteries, no improvements were observed in serving Block 1 in the current scenario. This suggests that the increased battery capacity of the 686-kWh model does not offer an operational advantage over the 500-kWh 40-foot bus in this case.

D.3 Additional Data

Table D-7 presents the assumptions used for the electric vehicle analysis. These assumptions are provided by for the 686 kWh 35-foot Gillig bus that CAT has procured to help provide reference to regarding the mileage limit recommendations for nominal and strenuous conditions. In this way, if CAT wishes to analyze vehicle blocks in the future, CAT can consider these figures as reference to the suggested maximum operational mileage that they should operate their electric vehicles for the 35-foot bus that is in the procurement process.

TABLE D-7: SERVICE RANGE OVER THE YEARS

Service Range (in miles) for Vehicles Purchased in 2025											
Vehicle	**Condition**	**Yr. 1**	**Yr. 2**	**Yr. 3**	**Yr. 4**	**Yr. 5**	**Yr. 6**	**Yr. 7**	**Yr. 8**	**Yr. 9**	**Yr. 10**
35’ Gillig Bus (686 kWh)	**Nominal**	286	274	263	252	242	232	222	213	204	195
	Strenuous	247	237	227	218	209	200	192	184	176	169

APPENDIX E POTENTIAL ADDITIONAL FUNDING PROGRAMS

E.1.1 Low- or No-Emission Vehicle Program, Section 5339(c)

The Low- or No-Emission Vehicle Program provides funding to state and local governments for the purchase or lease of low- or no-emission transit buses as well as acquisition, construction, and leasing of required supporting facilities. The program aims to assist in the deployment of low- or no-emission vehicles. According to FTA, the projects should aim to comply or maintain compliance with the Clean Air Act (CAA) and the Americans with Disabilities Act (ADA) to achieve maximum federal share for the cost of acquiring, installing, or constructing, vehicle-related equipment or facilities.

Grants are awarded based on several criteria such as a demonstration of needs and benefits, consistency with long-range plans, and local financial commitment, among others. If a project is related to zero-emission vehicles (e.g., buses or depot), 5 percent of the requested grant award must be used for workforce development to retrain the existing workforce and develop the workforce of the future, including registered apprenticeships and other joint labor management training programs.

- Apportioning Entity: FTA
- Period of Availability: 4 years
- Funding Available: $1.1 billion (FY 24). From this amount, FTA has set aside $357 million (21.5%) for low-emission technologies annually. In FY 23, this amount was rolled over since a few agencies applied for low-emission projects in FY 22, essentially making $714 million available for such purchases in FY 23.
- Program Match:
    - Total Vehicle Cost (Lease): 85% Federal, 15% Local
    - Net Equipment and Facilities Cost: 90% Federal, 10% Local
- Eligible Activities:
    - Purchasing or leasing of low- or zero-emission buses
    - Acquiring low- or zero-emission buses with a leased power source

E.1.2 National Electric Vehicle Infrastructure (NEVI) Formula Program

The NEVI Formula Program is designed to provide dedicated funding to states to strategically deploy electric vehicle charging infrastructure and help create a national electric vehicle network. In the current funding stage, NEVI funds are being directed towards the one-mile buffer surrounding designated Alternative Fuel Corridors (AFC). In Collier County, there are three such corridors: I-75, U.S. 41, and SR 29. Funds may be used to purchase and install publicly available electric vehicle charging infrastructure, operating expenses, purchase, and installation of traffic control devices located in the right-of-way, on-premises signage, development activities, and mapping and analysis activities. The 2021 Florida Department of Transportation (FDOT) Electric Vehicle Infrastructure Master Plan has information on the state strategy for the implementation of an electric vehicle network throughout Florida.

- Apportioning Entity: FDOT
- Period of Availability: Until funds are expended
- Funding Available: $198 million (FY 24)
- Program Match: 80% Federal, 20% Local

- Eligible Activities:
    - Publicly Available electric vehicle Chargers
    - Projects within the buffer area that would support the availability of public electric vehicle chargers.

E.1.3 Bus and Bus Facilities Discretionary Program, 5339(a)

The Bus and Bus Facilities Discretionary Program makes federal resources available to states and direct recipients to replace, rehabilitate, purchase, or lease buses, vans or related equipment and construct bus-related facilities. The program aims to support the replacement or enhancement of existing buses and bus facilities based on age and asset condition. Recipients can use up to 0.5 percent of the requested grant award for workforce development including on-the-job training, labor management partnership training, and registered apprenticeships.

- Apportioning Entity: FTA
- Period of Availability: 4 years
- Funding Available: $1.66 billion (FY 22)
- Program Match:
    - Total Vehicle Cost (Lease): 85% Federal, 15% Local
    - Net Equipment and Facilities Cost: 90% Federal, 10% Local
- Eligible Activities:
    - Constructing or leasing facilities and related equipment
    - Constructing new public transportation facilities to accommodate buses.
    - Rehabilitating or improving existing public transportation facilities.

E.1.4 Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grants

RAISE grants are intended to help state, municipal and tribal entities fund projects that are not easily or readily funded through other transportation grant programs. The statutory criteria require evaluation based on safety, environmental sustainability, quality of life, mobility and community connectivity, economic competitiveness and opportunities including tourism, state of good repair, partnership and collaboration, and innovation.

Successful projects have included electric vehicles and charging facilities including a $20 million grant for the Clearwater Multimodal Transit Center submitted by the Pinellas Suncoast Transit Authority for FY22.

- Apportioning Entity: USDOT
- Funding Available: $1.5 billion (FY 23)
- Program Match: 80% Federal, 20% Local (Areas of Persistent Poverty or Historically Disadvantaged Communities have reduced Federal match requirements)
- Eligible Activities:
    - Capital projects including but not limited to:
        - Highway, bridge, or other road projects eligible under title 23, United States Code
        - Public transportation projects eligible under chapter 53 of title 49, United States Code
        - Passenger and freight rail transportation projects

            - Port infrastructure investments
            - Intermodal projects
            - Any other surface transportation infrastructure project that the Secretary considers to be necessary to advance the goals of the program.
    - Planning projects which include planning, preparation, or design (for example: environmental analysis, feasibility studies, benefit cost analysis (BCA), and other pre-construction activities) of eligible surface transportation capital projects.

E.1.5 Advanced Transportation Technologies and Innovative Mobility Deployment (ATTIMD)

The ATTIMD provides competitive grants for the development and deployment of advanced or emerging technologies and support systems that are geared towards improving safety, efficiency, system performance and infrastructure return on investments. This opportunity also includes efforts to increase connectivity to employment, education, services, and other opportunities.

- Apportioning Entity: FHWA
- Period of Availability: One to four years
- Funding Available: $60 million (FY 23)
- Program Match: 80% Federal, 20% Local
- Eligible Activities:
    - Advanced Traveler Information Systems
    - Advanced Public Transportation Systems
    - Transportation system performance data collection, analysis, and dissemination systems
    - Advanced mobility and access technologies, such as dynamic ride sharing and information systems to support human services for elderly and disabled individuals.

E.1.6 Diesel Emissions Reduction Act (DERA)

The DERA program funds grants and rebates that are geared toward replacing diesel engines with cleaner fuel alternatives. This program awards reimbursements which are granted over a two-year cycle and may be fully or incrementally funded as deemed appropriate. For eligible vehicles, DERA will reimburse up to 45 percent of the cost for electric vehicles that replace certain diesel vehicles. The purchase and installation of electric vehicle charging infrastructure can be included in an electric vehicle replacement project. State, local, or tribal agencies with jurisdiction over transportation or air quality may apply.

- Apportioning Entity: EPA
- Period of Availability: Two years
- Funding Available: $46.0 M (FY21)
- Program Match: Federal Match: Up to 45% of the total electric bus replacement cost including charging infrastructure.
- Eligible Activities:
    - Replacement of diesel engines on:
        - Buses
        - Class 5 – Class 8 heavy-duty highway vehicles
        - Locomotive engines

        - Marine engines
        - Non-road engines, equipment or vehicles used in construction, cargo handling, etc.

E.1.7 Alternative Fuel Infrastructure Tax Credit

The Internal Revenue Service (IRS) provides a tax credit for fueling equipment for most alternative fuel infrastructure. The credit may be used for one or various locations where infrastructure is implemented, and the credit may be carried backwards one year or forwards for 20 years. The equipment must be installed in locations that meet at least one of these requirements at the census tract level: the area is not urban, the poverty rate is at least 20 percent, or the median family income is less than 80 percent of the state medium family income level.

- Apporitoning Entity: IRS
- Period of Availability: Up to 20 years
- Tax Credit provisions:
    - Before 2023: 30% of the cost of equipment not to exceed $30,000.
    - After 2023: 30% of the cost of equipment or 6% of property that is subject to depreciation, not to exceed $100,000.

E.1.8 Title XVII Renewable Energy and Efficient Energy (REEE) Projects Solicitation

The Department of Energy (DOE) Loan Programs Office (LPO) has issued a supplement to its Title XVII REEE solicitation in the form of a loan guarantee. REEE solicitations are provided to projects that support innovative, renewable energy and energy efficiency. The continued deployment of electric vehicles has been impeded in recent years due to a lack of charging infrastructure and battery prices. As a result, the LPO supplement is aimed at providing assistance in the deployment of electric vehicle projects.

- Apportioning Entity: DOE Loan Programs Office
- Funding Available: $4.5 B
- Program Match: Federal Match: Up to 45% of the total electric bus replacement cost including charging infrastructure.
- Eligible Activities:
    - Charging infrastructure
    - Batteries
    - Associated hardware or software

E.1.9 Advanced Transportation and Congestion Management Technologies Deployment Program

Through Fixing America's Surface Transportation Act (FAST Act), FHWA established the Advanced Transportation and Congestion Management Technologies Deployment Program to make grants available for the development of model deployment sites for large scale installation and operation of advanced transportation technologies to improve safety, efficiency, system performance, and infrastructure return on investment. Up to 5 percent of funds are allowed to be used each fiscal year to carry out planning and reporting requirements under the program.

- Apportioning Entity: FHWA
- Funding Available: $60 M

- Program Match: 50% Federal, 50% Local
- Eligible Activities:
    - Advanced traveler information systems
    - Advanced transportation management technologies
    - Infrastructure maintenance, monitoring, and condition assessment
    - Advanced public transportation systems
    - Transportation system performance data collection, analysis, and dissemination systems
    - Advanced safety systems, including vehicle-to-vehicle and vehicle-to-infrastructure communications
    - Technologies associated with autonomous vehicles, and other collision avoidance technologies, including systems using cellular technology
    - Integration of intelligent transportation systems with the smart grid and other energy distribution and charging systems
    - Electronic pricing and payment systems
    - Advanced mobility and access technologies, such as dynamic ridesharing and information systems to support human services for elderly and disabled individuals.

E.1.10 Accelerating Innovative Mobility (AIM)

FTA's AIM initiative promotes forward-thinking approaches to improve transit financing, planning, system design, and service. The program also supports innovative approaches to advance strategies that promote accessibility, including equitable and equivalent accessibility for all travelers.

- Apportioning Entity: FTA
- Funding Available: $14 M (FY20)
- Program Match: Federal Match: 80% Federal, 20% Local
- Eligible Activities:
    - Planning and developing business models
    - Obtaining equipment and service
    - Acquiring or developing software and hardware interfaces to implement the project.
    - Operating or implementing the new service model
    - Evaluating project results

E.1.11 Charging and Fueling Infrastructure (CFI) Discretionary Grant Program

The CFI Discretionary Grant Program aims to strategically deploy publicly accessible electric vehicle charging and alternative fueling infrastructure in the places people live and work as well as along designated AFCs. The awards are structured as cost reimbursement grants. There are two funding categories: Community Charging and Fueling Grants and Alternative Fuel Corridor Grants. For the Community Grants, infrastructure must be located on a public road or a publicly accessible location. For the AFC grants, battery electric charging infrastructure must be located within a mile of an AFC, while infrastructure for other alternative fuels must be located within five miles of an AFC. Compressed Natural Gas AFC status is pending for Interstate 75 and Electric Vehicle AFC status is pending for Interstate 75, U.S. 41, and State Road 29.

- Apportioning Entity: FHWA

- Funding Available: $700 M (FYs 22 and 23)
- Eligible Activities:
  - Electric vehicle charging infrastructure
  - Hydrogen fueling infrastructure
  - Propane fueling infrastructure
  - Natural gas fueling infrastructure

E.1.12 Recent Federal Actions

On January 20, 2025, President Trump issued an Executive Order rescinding all diversity, equity, inclusion, and accessibility initiatives within the Federal government, within federal funding initiatives, and encouraging the private sector to do the same. The next day, January 21, 2025, President Trump issued an order rescinding Executive Order 12898 of February 11, 1994 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations). Both of these actions suggest that the use of the words "diversity", "equity", "inclusion", or "accessibility" should be discouraged in federally funded documents and reports.

Similarly, another Executive Order issued on January 20, 2025, titled "Unleashing American Energy" attempted to halt funding under the IIJA and Inflation Reduction Act specifically for electric vehicles, and also rescinded multiple prior executive orders related to climate change. This executive order did not discourage the development of electric vehicles but rather promoted freedom of choice by consumers.

As rulemaking and guidance are released in response to these Executive Orders, CAT should continue to monitor funding opportunities and grant eligibility criteria for successfully securing additional funding.

APPENDIX F VEHICLE REPLACEMENT PLAN

This appendix to the Implementation Plan details the suggested Vehicle Replacement Plan (VRP) for years 2025 through 2034, for each vehicle in the current fleet by vehicle ID

Vehicle ID	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
CC2-868	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-1115	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel
CC2-1117	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel
CC2-1376	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-1377	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-1412	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel
CC2-1411	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel
CC2-1843	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-1842	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-1844	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-1845	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-2194	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel
CC2-2195	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel
CC2-2196	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel
CC2-2197	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel	Demand Response Diesel
CC2-2342	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-2345	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-2344	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline

Vehicle ID	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
CC2-2343	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-2393	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-2480	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-2481	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-2478	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-2482	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-2477	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-2479	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-2700	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-2701	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-2702	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-2703	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-2704	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-2705	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
7008	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
7013	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
7006	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
7005	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline	Demand Response Gasoline
CC2-800	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
CC2-799	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
CC2-1122	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel

Vehicle ID	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
CC2-1008	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
CC2-1621	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
CC2-1620	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
CC2-1623	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
CC2-1622	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
CC2-1409	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
CC2-1408	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
CC2-1719	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
CC2-1917	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Battery Electric	Fixed Route Battery Electric	Fixed Route Battery Electric	Fixed Route Battery Electric	Fixed Route Battery Electric	Fixed Route Battery Electric
CC2-2569	Fixed Route Gasoline	Fixed Route Gasoline	Fixed Route Gasoline	Fixed Route Gasoline	Fixed Route Gasoline	Fixed Route Gasoline	Fixed Route Gasoline	Fixed Route Gasoline	Fixed Route Gasoline	Fixed Route Gasoline
CC2-2568	Fixed Route Gasoline	Fixed Route Gasoline	Fixed Route Gasoline	Fixed Route Gasoline	Fixed Route Gasoline	Fixed Route Gasoline	Fixed Route Gasoline	Fixed Route Gasoline	Fixed Route Gasoline	Fixed Route Gasoline
CC2-2725	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
CC2-2726	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
CC2-2727	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
CC2-2729	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Hybrid Electric	Fixed Route Hybrid Electric	Fixed Route Hybrid Electric
CC2-2728	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Hybrid Electric	Fixed Route Hybrid Electric	Fixed Route Hybrid Electric
CC2-2864	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Hybrid Electric	Fixed Route Hybrid Electric
CC2-2865	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Hybrid Electric	Fixed Route Hybrid Electric
CC2-2866	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Hybrid Electric	Fixed Route Hybrid Electric

Vehicle ID	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
CC2-2867	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Hybrid Electric	Fixed Route Hybrid Electric
CC2-2601	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
TBD 30' Bus 2	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
TBD 30' Bus 1	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
CC2-3017	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
TBD 35' Bus 2	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
TBD 35' Bus 1	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel	Fixed Route Diesel
TBD 35' - Electric	Fixed Route Battery Electric	Fixed Route Battery Electric	Fixed Route Battery Electric	Fixed Route Battery Electric	Fixed Route Battery Electric	Fixed Route Battery Electric	Fixed Route Battery Electric	Fixed Route Battery Electric	Fixed Route Battery Electric	Fixed Route Battery Electric
CC2-1553 (sedan)	Support Car Gasoline	Support Car Gasoline	Support Car Gasoline	Support Car Gasoline	Support Car Gasoline	Support Car Gasoline	Support Car Gasoline	Support Car Gasoline	Support Car Gasoline	Support Car Gasoline
CC2-2019 (SUV)	Support Car Gasoline	Support Car Gasoline	Support Car Gasoline	Support Car Gasoline	Support Car Gasoline	Support Car Gasoline	Support Car Gasoline	Support Car Gasoline	Support Car Gasoline	Support Car Gasoline
CC2-1402 (Pickup)	Support Pickup Gasoline	Support Pickup Gasoline	Support Pickup Gasoline	Support Pickup Gasoline	Support Pickup Gasoline	Support Pickup Gasoline	Support Pickup Gasoline	Support Pickup Gasoline	Support Pickup Gasoline	Support Pickup Gasoline
CC2-1662 (Pickup)	Support Pickup Gasoline	Support Pickup Gasoline	Support Pickup Gasoline	Support Pickup Gasoline	Support Pickup Gasoline	Support Pickup Gasoline	Support Pickup Gasoline	Support Pickup Gasoline	Support Pickup Gasoline	Support Pickup Gasoline
CC2-2106 (van)	Support Van Gasoline	Support Van Gasoline	Support Van Gasoline	Support Van Gasoline	Support Van Gasoline	Support Car Battery Electric	Support Car Battery Electric	Support Car Battery Electric	Support Car Battery Electric	Support Car Battery Electric
CC2-2107 (Van)	Support Van Gasoline	Support Van Gasoline	Support Van Gasoline	Support Van Gasoline	Support Van Gasoline	Support Car Battery Electric	Support Car Battery Electric	Support Car Battery Electric	Support Car Battery Electric	Support Car Battery Electric