

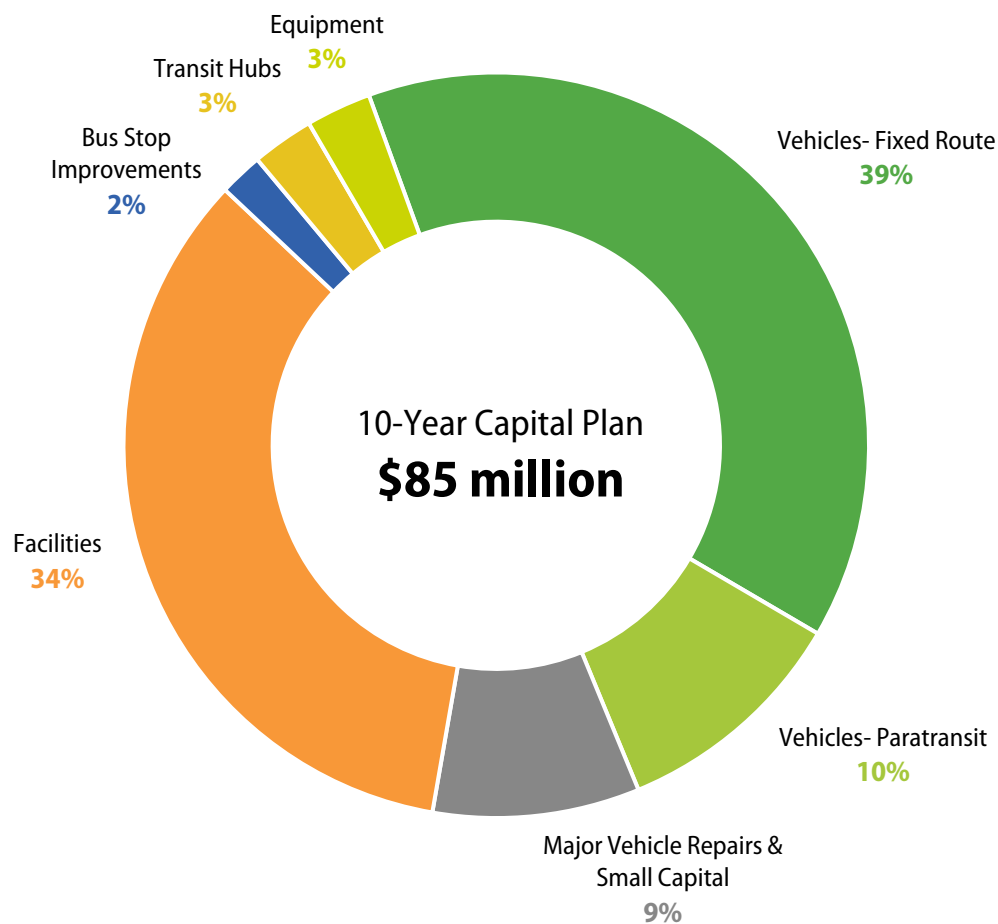
Chapter 4: Capital Plan

Marin Transit's Capital Improvement and Funding Plan has expanded as Marin Transit has taken increasing responsibility for transit service in Marin County. The District's primary capital responsibilities and priorities are to (1) Maintain a sufficient fleet of clean-fueled vehicles for local transit service; (2) Improve and maintain the amenities and accessibility of Marin County bus stops; (3) Improve major bus transfer locations; (4) Provide passenger information; and (5) Provide needed operations equipment and infrastructure.

Marin Transit's baseline capital resources limit the Capital Plan primarily to maintaining a state of good repair for existing assets and making the minimal level of investment required to maintain and operate the local bus system. The 10-year Capital Plan includes expenditures of \$85 million (Figure 4-1). Of this amount, 51 percent is for purchasing transit vehicles. The plan is underfunded by \$19.9 million, and sets aside \$6.0 million in capital reserves. The funding shortfalls are:

- \$18 million - Construction of Operations Facility
- \$1.9 million - Local Match for Projects without local sales tax funding

Figure 4-1: 10-Year Capital Expenditures By Type

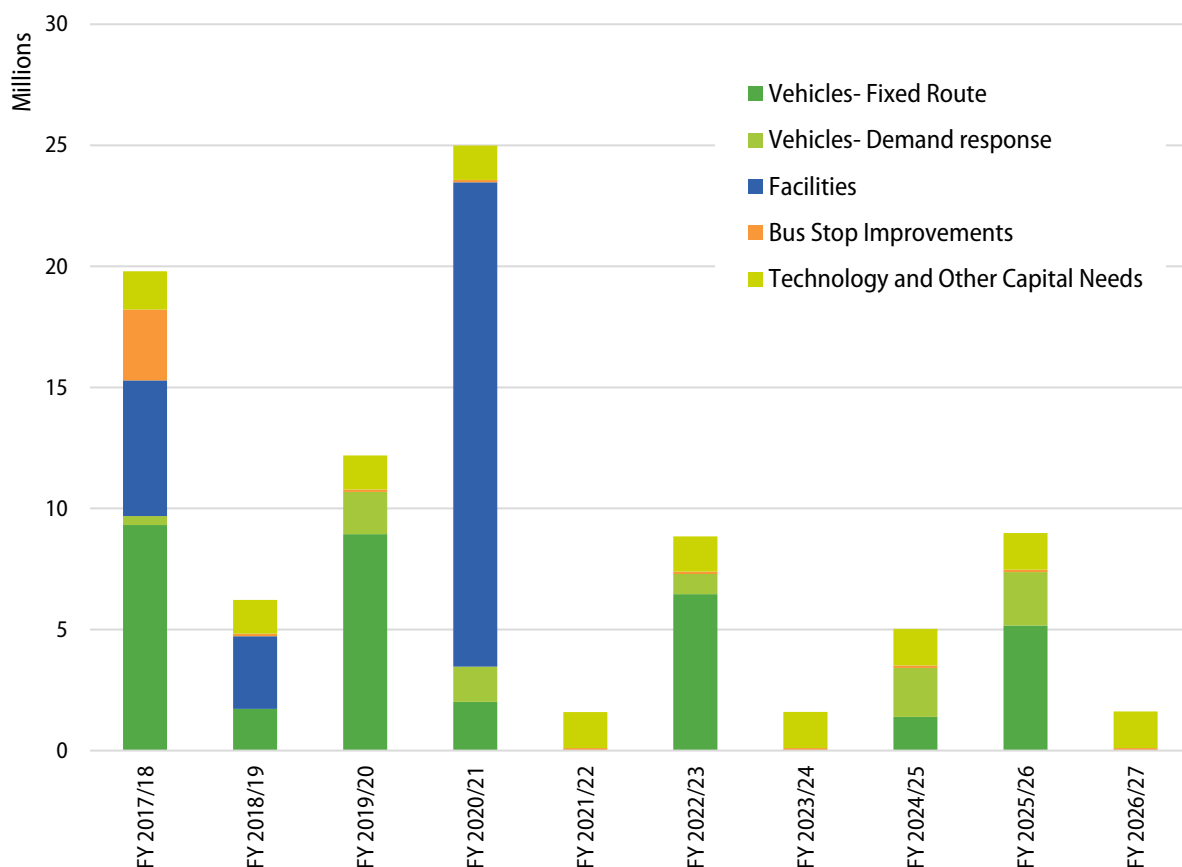


Facility expenditures comprise 33 percent of total planned expenditures. These include purchase and construction of an operations and maintenance facility and a yellow bus parking facility. The construction of an operations and maintenance facility is underfunded by \$16 million, and will not be completed without additional state and federal grant funding. Other costs included in the plan are for major vehicles repairs, bus stop improvements, and small capital.

Marin Transit currently dedicates 2.25 staff members to Capital projects: a Capital Manager, a Capital Analyst, and a portion of the Director of Finance and Capital Program's time. These staff members are responsible for vehicle procurements, bus stop signage, bus stop maintenance, and design and construction of bus stop and passenger facility improvements. With help from other Marin Transit staff, the capital team supports other projects such as fare collection, review and participation in partner agency projects, and implementation of other technology projects. Marin Transit maintains various support contracts, and utilizes multi-agency joint procurement contracts to supplement staff time and ensure effective use of resources. Implementing bus stop improvements projects takes significant staff resources, and the District needs to be strategic in how it leverages partner agency resources (Cities, County, TAM), determines project timelines, and commits to additional projects.

Figure 4-2 shows capital expenditures by type for each of the plan years. Unlike operating expenses, capital expenditures vary considerably between years. The level of expenditure in a given year is very dependent on the number of vehicle replacements and the plan for delivering capital projects

Figure 4-2: 10-Year Capital Expenditures by Year



Capital Funding

Marin Transit is allocated six percent of Measure A transportation sales tax funds for investment in bus transit facilities (Strategy 1.4), currently about \$1.3 million per year. This funding is critical to Marin Transit's ability to provide matching grant funds. However, it is only a fraction of what is needed to maintain and improve the capital assets related to local bus transit. Federal FTA Section 5307 Urbanized Area Formula funds programmed through the Metropolitan Transportation Commission (MTC) provide 82 percent of funding for vehicle replacement projects. Competitive federal grant programs can provide additional funding for vehicles and bus stop improvement projects.

Marin Transit's vehicle replacement costs over the next 10 years are estimated to be \$41.2 million. The District expects most of this funding (\$34.1 million) to come from the Federal Transit Administration's (FTA) Section 5307 funds through MTC's Transit Capital Priorities program. The remaining \$7.4 million will need to come from state and local funding sources.

In the plan, Measure A capital funds are critical for providing the local matching funds for vehicles. Since 2010, Marin Transit has received \$6.6 million in state funding under the Proposition 1B PTMISEA program. This funding has ended, and Marin Transit's remaining funds will be expended in FY 2017/18. PTMISEA funds enabled Marin Transit to purchase new vehicles, upgrade vehicle replacement projects to hybrids and all electric, and provide local match funds to bus stop improvement projects. During the life of this bond program, Marin Transit did not fully expend the available Measure A capital funds.

Marin Transit currently has a capital reserve of \$4.7million. These funds are programed in the Capital Plan for the purchase of a yellow bus parking facility and partial funding for the fixed route operations and maintenance facility.

Marin Transit is finishing a 5309 State of Good Repair grant of \$1.6 million for bus stop improvement projects. Marin Transit also has an open grant for federal Paul S. Sarbanes Transit in the Parks funds to improve bus stops with service to Muir Woods National Monument. Successful future applications for funding will be critical to the success of identified project needs including additional bus stop and passenger facilities improvement projects.

Table 4-1: Capital Funding and Improvement Plan

Project Costs	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2026/27	FY 2026/27	TOTAL
Fixed Route Vehicles Costs	\$9,317,069	\$1,725,000	\$8,940,000	\$2,011,000	\$0	\$6,458,759	\$0	\$1,393,227	\$2,690,799	\$0	\$32,535,854
Paratransit Replacement Vehicles	\$369,780	\$0	\$1,740,787	\$1,456,821	\$0	\$475,814	\$0	\$2,018,049	\$1,948,679	\$0	\$8,009,930
Paratransit Expansion Vehicles	\$0	\$0	\$0	\$0	\$0	\$356,663	\$0	\$0	\$259,824	\$0	\$616,487
Non Revenue Vehicles	\$40,750	\$0	\$0	\$0	\$45,864	\$0	\$0	\$0	\$0	\$0	\$86,614
Bus Stop Improvements	\$680,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$1,580,000
Downtown Novato- Construction	\$1,637,663	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,637,663
Muir Woods Infrastructure Improvements	\$512,729	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$512,729
San Rafael Transit Center	\$100,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100,000
Paratransit and Fixed Route Maintenance Facility	\$5,602,881	\$0	\$0	\$20,000,000	\$0	\$0	\$0	\$0	\$0	\$0	\$25,602,881
Yellow Bus Parking Facility	\$0	\$3,000,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,000,000
On Board Equipment (Security Cameras, AVL,)	\$270,817	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$270,817
Fare Collection (Fareboxes, Clipper)	\$0	\$463,038	\$161,534	\$165,572	\$152,740	\$52,186	\$0	\$0	\$277,024	\$0	\$1,272,093
Radio Communications	\$104,000	\$302,000	\$29,000	\$29,000	\$0	\$0	\$0	\$0	\$0	\$0	\$464,000
Mobility Management Technology Backbone	\$356,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$356,500
Golden Gate Capital Costs	\$20,000	\$24,058	\$23,336	\$22,636	\$33,111	\$32,118	\$31,155	\$30,220	\$29,313	\$28,434	\$279,185
Bus Stop Maintenance	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,001	\$100,002	\$1,000,003
Major Vehicle Repairs	\$300,000	\$303,000	\$306,030	\$309,090	\$312,181	\$315,303	\$318,456	\$321,641	\$324,857	\$328,106	\$3,201,751
Infrastructure Support	\$385,000	\$241,217	\$250,264	\$259,623	\$269,305	\$279,322	\$317,605	\$329,230	\$329,230	\$329,230	\$2,990,026
TOTAL	\$19,797,189	\$6,258,313	\$11,650,951	\$24,453,742	\$1,013,202	\$8,170,165	\$867,216	\$4,292,367	\$6,059,727	\$885,772	\$83,516,533
Project Costs	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2026/27	FY 2026/27	TOTAL
LOCAL											
Golden Gate Transit	\$22,880	\$66,440	\$6,380	\$6,380	\$0	\$0	\$0	\$0	\$0	\$0	\$102,080
Measure A	\$4,407,961	\$2,308,702	\$2,753,868	\$1,467,980	\$887,955	\$2,882,951	\$867,216	\$1,495,120	\$727,368	\$0	\$17,799,122
Capital Reserve	\$1,131,600	\$3,000,000	\$0	\$2,000,000	\$0	\$0	\$0	\$0	\$0	\$0	\$6,131,600
Other Local	\$250,003	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$250,003
Subtotal Local	\$5,812,444	\$5,375,142	\$2,760,248	\$3,474,360	\$887,955	\$2,882,951	\$867,216	\$1,495,120	\$727,368	\$0	\$24,282,805
STATE											
PTMISEA (State Infrastructure Bond)	\$120,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$120,000
Other State	\$135,022	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$135,022
Subtotal State	\$255,022	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$255,022
FEDERAL											
FTA 5309 - State of Good Repair	\$479,999	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$479,999
Section 5307	\$8,051,795	\$883,171	\$8,890,703	\$2,979,382	\$125,247	\$5,287,214	\$0	\$2,797,246	\$4,255,346	\$49,200	\$33,319,304
Paul Sarbanes	\$512,729	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$512,729
FTA - 5315 JARC	\$285,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$285,200
Section 5339 - Bus and Bus Facilities	\$4,400,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,400,000
Subtotal Federal	\$13,729,723	\$883,171	\$8,890,703	\$2,979,382	\$125,247	\$5,287,214	\$0	\$2,797,246	\$4,255,346	\$49,200	\$38,997,232
TOTAL	\$19,797,189	\$6,258,313	\$11,650,951	\$6,453,742	\$1,013,202	\$8,170,165	\$867,216	\$4,292,367	\$4,982,713	\$49,200	\$63,535,059
Annual Surplus (Shortfall)	(\$0)	(\$0)	(\$0)	(\$18,000,000)	\$1	(\$0)	\$0	\$0	(\$1,077,013)	(\$836,572)	(\$19,981,474)

Vehicles

Marin Transit uses a mixed fleet of 128 vehicles to operate local fixed route and demand response services in Marin County (Table 4-2). Operation and maintenance of these vehicles is provided by the associated contract operators. Marin Transit is responsible for major repairs, including engine and transmission replacements. Marin Transit's vehicles include 93 owned directly by the District and 35 owned by a Contractor or other public agency.

About 78 percent of the expenditures in the Capital Plan are to replace fixed route and paratransit vehicles and to purchase expansion vehicles to serve the growth in mandated paratransit service. As vehicles are replaced, Marin Transit will continue to take direct ownership of all required vehicles. By FY 2018/19, Marin Transit is expected to own 100 percent of the vehicles needed for local service. Vehicle replacements are the first priority in the Marin Transit capital plan, and essential for maintaining State of Good Repair for the local transit system. Traditional transit vehicles (30ft – 60ft) cost between \$500,000 and \$900,000 each, and are replaced every 12 years. Shuttle vehicles cost significantly less (\$140,000), but need to be replaced every seven (7) years. Lighter duty demand response vehicles cost around \$100,000 each, and are replaced every five (5) years.

Table 4-2: Vehicle Summary by Type and Service

Service (Current Contractor)	60ft Articulated	40ft	35ft	30ft	Cutaway Shuttles	Accessible Vans	Total Vehicles
Shuttle, Local (Marin Airporter)	-	2	-	4	12	-	18
Rural, Local (MV) ⁽¹⁾	-	5	-	3	6	-	14
Muir Woods (MV)	-	-	10	-	2	-	12
Sup. School (MV)	-	2	-	-	-	-	2
Fixed-Route (GGBHTD)	10	12	7	-	-	-	29
Fixed-Route Total	10	21	17	7	20	0	75
Dial-A-Ride (WSW)	-	-	-	-	1	-	1
Local Paratransit (WSW)	-	-	-	-	38	-	38
GGT-Owned Paratransit ⁽²⁾	-	-	-	-	14	-	14
Demand Response Total	0	0	0	0	53	0	53

Notes:

(1) Two cutaway vehicles owned by National Park Service

(2) 14 Vehicles owned by GGBHTD

Alternative Fuels

Reducing emissions and using alternative fuels is a priority for the District. Marin Transit purchased seven 35ft hybrid buses in 2010 and eleven hybrid vehicles in FY 2015/16, and has a contract to purchase ten more in FY 2017/18.

In addition to hybrid vehicles, Marin Transit is investing in Battery Electric, Zero Emission technology. Two Battery Electric Buses will be added to Marin Transit's fleet in FY 2017/18. Overnight charging stations will be installed at the operating contractor's yard. Marin Transit will evaluate the performance and costs

associated with operating this new vehicle type to inform future potential investments in battery-electric vehicle technology.

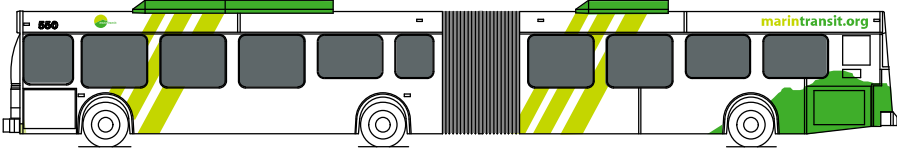
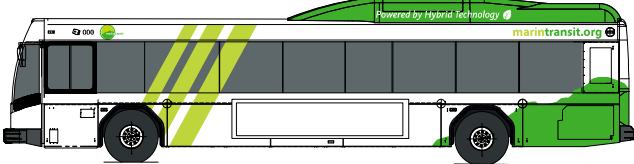
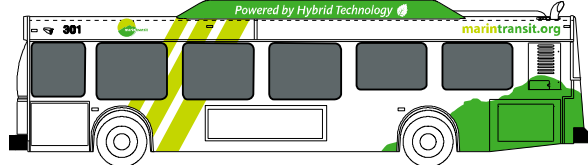
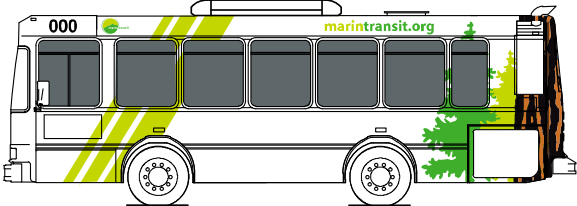



Marin Transit will continue to strive to purchase hybrid and alternative fuel vehicles when additional funds are available. For the purposes of this plan, all replacement vehicles beyond FY 2017/18 are assumed to be clean diesel. Staff developed cost estimates based on MTC's regional bus/van price list. However, staff will seek to program Cap and Trade funds from Low Carbon Transit Operations Program (LCTOP) program and apply for other clean air funds to secure incremental funding for the best available technologies.

Table 4-3: Fixed Route Vehicles By Fuel Type

Fuel Type	Number of Vehicles	% of Fleet
Gasoline (Cutaways)	20	27%
Clean Diesel	25	33%
Hybrid	28	37%
All Electric	2	3%
Total Fixed-Route	75	100%

The District is also committed to reducing emission from the use of diesel fuel. Marin Transit uses renewable diesel to fuel its vehicles operated by Golden Gate Transit. The Neste NEXTBTL fuel reduces greenhouse gas emissions by approximately 67 percent compared to standard petroleum diesel. The fuel also has a higher cetane rating than petroleum or bio-diesel. This contributes to a cleaner and more complete combustion process that produces less tailpipe emissions.

Table 4-4: Fixed Route Vehicle Types

No. of Vehicles	Vehicle Type	Vehicle
10	Articulated Vehicles	
14	40ft Vehicles	
7	40ft Hybrid Vehicles	
7	35ft Hybrid Vehicles	
4	30ft Hybrid Vehicles	
10	Muir Woods Shuttle XHF	
11 ⁽¹⁾	Stagecoach Shuttles	
12	Community Shuttles	
38 ⁽²⁾	Paratransit Vehicles	

Notes:

- (1) Includes 3 29' XHFs and 2 cutaways used for Muir Woods Shuttle Service
 (2) Only includes vehicles owned by Marin Transit, and WSW-owned vehicles that will be replaced by Marin Transit

Table 4-5: Vehicle Service Life Guidance

Asset Class ⁽¹⁾	Service Life
35'-40' heavy duty and articulated transit bus	12 years or 500,000 miles
30' heavy duty transit bus	10 years or 350,000 miles
30' medium-duty transit bus	7 years or 200,000 miles
25'-35' light-duty transit bus	5 years or 150,000 miles
Other vehicles (e.g., small buses, regular and specialized vans)	4 years or 100,000 miles

Notes:

(1) A heavy-duty transit bus is manufactured as a bus for urban and/or high passenger volume utilization. A medium-duty bus is manufactured for a lighter duty cycle.

Local Fixed Route Vehicles

The local fixed route program requires an estimated 69 vehicles to operate service and maintain an adequate spare ratio. These vehicles are deployed for different services under multiple service contracts as shown in Table 4-2. Additional 40ft shared vehicles are also used for the services provided by GGBHTD however the district is replacing these vehicles. The replacement vehicles will be owned by the District. The Capital Plan assumes a replacement schedule in accordance with the service lives set in Marin Transit's Fixed Asset Management policy (FA-01) and that corresponds to federal and regional guidelines and policies (Table 4-5). The operations plan includes service cuts required if the local sales tax funding, Measure A, is not extended. If these service cuts were required, the District would have surplus vehicles. These would primarily be cutaway and shuttle vehicles that have shorter useful lives and could be retired or sold. Since this would occur in the final two years of the plan and is subject to significant uncertainty, the sale of unneeded assets is not included in this Plan.

Table 4-6 and Table 4-7 provide a summary of the local transit buses replacement schedule. A full vehicle inventory is included in Appendix D.

Table 4-6: Fixed Route Vehicle Summary

	Marin Transit Owned	Contractor Owned/Leased	Total
FY 2017/18 Vehicles	38	14	74
<i>Replacement (FY2017/18 – FY 2026/27)</i>	56	-	56
<i>Expansion (FY2017/18 – FY 2026/27)</i>	-	-	-
<i>Retirement (currently retired active)</i>	3	2	
FY 2026/27 Vehicles	69	-	69

Table 4-7: Local Transit Bus Replacement Schedule

Fiscal Year (In-service)	Replacements	Total Cost	Local Share	Vehicle Type	Seating Capacity	Service ⁽¹⁾
FY 2017/18	10	\$7,710,000	\$1,387,800	40ft hybrid	39	LB
	2	\$1,662,000	\$332,404	35ft Electric	32	LB
FY 2018/19	1	\$125,000	\$22,500	24ft	20	SH
	4	\$1,600,000	\$1,094,880	29ft XHF (upgrade)	22	SG
FY 2019/20	10	\$8,940,000	\$1,609,200	60ft	63	LB
FY 2020/21	8	\$1,032,000	\$185,760	24ft	20	SH
	2	\$850,000	\$153,000	35ft XHF	37	MW
FY 2022/23	7	\$5,584,578	\$1,005,224	35ft hybrid	32	LB
	2	\$874,182	\$599,281	29ft XHF (upgrade)	22	SG
FY 2024/25	3	\$1,393,227	\$250,781	35ft XHF	37	MW
FY 2025/26	2	\$299,093	\$53,837	24ft	20	SH
	5	\$2,391,706	\$430,507	35ft XHF	37	MW
FY 2026/27	-	-	-	-	-	-

Notes:

(1) Service Types: LB – Big Bus, SH- Shuttle, SG- Rural Stagecoach, MW- Seasonal Muir Woods and School

Expansion Needs

When considering service expansion, vehicles are often a constraint on the amount of service that can be added. Expansion vehicles are a lower priority in the regional capital plan, and typically do not receive federal funds. Local, state, or discretionary grants are required to expand fleets. The capital plan does not include any expansion vehicles for the local fixed route program, consistent with the current service plan.

Marin Transit relies on three retired active vehicles to support operations. Retired active vehicles are vehicles that are beyond their FTA-determined useful life that remain in service, while their replacements are added to the fleet. The District intends to replace these as expansion vehicles if funding becomes available.

Demand Response Vehicles

Marin Transit has 58 vehicles available for local and regional paratransit service. To provide an adequate number of spare vehicles a maximum of about 46 vehicles in service. Marin Transit owns 32 vehicles, GGBHTD owns 14, and the contractor provides another 13 vehicles to support the operations. Eleven of the 13 contractor vehicles will be replaced in early 2018 - five by the District and six by GGBHTD. Two of the five replaced by the District will be replaced with smaller accessible vans. These will be used for same day

ADA service. GGBHTD will replace the remaining two contractor vehicles in the future, as service levels warrant.

Based on the contract with Marin Transit, GGBHTD has committed to providing all vehicles for the regional paratransit service. Their share of vehicles for the local paratransit service based on their share of Marin County fixed route trips (currently about 25 percent).

Expansion Needs

Marin Transit anticipates increasing demand for paratransit service. To keep pace with the growth in ADA mandated paratransit, the Capital Plan includes the purchase of five additional paratransit vehicles. These vehicle are funded 100 percent with Measure A capital funds.

Historically, Marin Transit has also relied on keeping vehicles in service after their replacement due date to ensure adequate numbers of vehicles are available.

Table 4-8: Demand Response Vehicle Summary

	Dial-A - Ride (Marin Transit)	Accessible Vans (Marin Transit)	Paratransit Cutaways (Marin Transit)	Contractor Owned Paratransit	GGBHTD (Paratransit)	Total
FY 2017/18 Vehicles	1	0	31 ⁽¹⁾	13	14	59
Planned Disposals	2	2	66	13	36	
<i>Replacement (FY2017/18 – FY 2024/25)</i>	2	4	68	-	44	99
<i>Expansion (FY2017/18 – FY 2024/25)</i>	-	-	5	-	-	-
FY 2026/27 Vehicles	1	2	38	0	22	63

Notes:

(1) Includes one retired active vehicle

Table 4-9: Paratransit & Dial-A Ride Vehicle Replacement and Expansions Schedule

Fiscal Year	Qty. Replacements (R) / Expansion (E)	Total Cost	Local Share	Vehicle Type	Seating Capacity	Wheelchair Capacity	Program ⁽¹⁾
FY 2017/18	3 (R)	\$267,000	\$48,060	Cutaways	8	2	LPT
	6 (R)	GGT owned	NA	Cutaways	8	2	LPT
	2 (R)	\$102,780	\$18,500	Vans	6	2	SD
FY 2018/19	16 (R)	GGT owned	NA	Cutaways	8	2	RPT/LPT
FY 2019/20	16 (R)	\$1,740,787	\$313,342	Cutaways	8	2	LPT
FY 2020/21	15 (R)	\$1,456,821	\$262,228	Cutaways	8	2	LPT
FY 2022/23	3 (R)	\$356,663	\$64,199	Cutaways	8	2	LPT
	3 (E)	\$356,663	\$356,663	Cutaways	8	2	LPT
	6 (R)	GGT owned	NA	Cutaways	8	2	LPT
	2(R)	\$119,150	\$21,447	Vans	6	2	SD
FY 2023/24	16 (R)	GGT owned	NA	Cutaways	8	2	RPT/LPT
FY 2024/25	16 (R)	\$2,018,049	\$363,249	Cutaways	8	2	LPT
FY 2025/26	15 (R)	\$1,948,679	\$350,762	Cutaways	8	2	LPT
	2 (E)	\$259,842	\$259,842	Cutaways	8	2	LPT
FY 2026/27	0	-	-	-	-	-	-

Notes:

(1) Service Types: LPT – Local Paratransit, RPT – Regional Paratransit, SD – Same Day ADA

Electric Vehicle Pilot

Marin Transit has contracted to purchase two 35-foot BYD Battery-Electric Buses with seating for 32 passengers. Golden Gate Transit will operate and maintain them as a pilot project. These two buses will be an opportunity to test the new technology and better understand the advantages and challenges in operating an electric fleet. Data will be gathered, and the knowledge gained during this pilot will guide future bus purchases. The vehicles will be purchased with a combination of Federal Section 5307, Measure A, and a grant from the Bay Area Air Quality Management District funds. TAM has allocated \$75,000 through Measure B to install charging stations at Golden Gate Transit's yard, where the buses will be parked overnight.

Yellow School Buses (unfunded)

Marin Transit has operated two years of yellow school bus service under contract, and will investigate purchasing its own school service vehicles. Investment in new District-owned vehicles will improve service reliability and reduce ongoing operations costs. Direct ownership of the yellow bus fleet will also expand the

number of potential service providers that will bid on new contracts, and support expansion of the service as demand increases.

Bus Stop and Corridor Improvements

Bus Stop Improvements

Marin Transit is committed to improving local bus stops in Marin County. Improvements will address accessibility, shelters, signage (both eye level and bus stop flags), and other stop amenities. The District continues to work with local jurisdictions to ensure that all bus stops are accessible according to the Americans with Disabilities Act (ADA).

Since 2012, Marin Transit has addressed prioritized bus stop needs with new shelters, benches, signage, roadway repair, and accessibility improvements. Marin Transit received a Federal State of Good Repair grant for \$1.6 million, and applied these funds to replace all bus stop signs throughout the County, add new bus stop amenities and accessibility improvements at 12 locations, and fund other minor upgrades to stops in West Marin and San Rafael. Staff has gained valuable experience in the process. These projects are resource intensive due to the unique nature of each bus stop and the jurisdictions where they are located. Marin Transit is scoping a second set of bus stop improvements for the remaining State of Good Repair funds for up to 15 stops.

Marin Transit continues to plan for future phase of bus stop improvements. In 2017, the District initiated an update to the 2005 bus stop inventory to reflect recent improvements, better quantify needs, and prioritize stop improvements.

Major Improvements at Transfer Locations

Marin Transit has a vested interest in improving major transfer locations within the County to facilitate transfers between services, improve operations, and attract riders. Marin Transit completed the Downtown Novato Bus Facility, and has active projects at the Pohono Park and Ride and SMART stations. Other locations for future projects include the San Anselmo Hub and the downtown transfer location in Fairfax.

Downtown Novato Bus Facility – Marin Transit led the development of a new design to replace an aging transit facility located at Redwood and Grant in downtown Novato with Golden Gate Transit and the City of Novato. The new facility improves safety, operations, and passenger access. Facility construction was completed in November 2017 at a cost of \$4.7 million. Project funding sources included PTMISEA, Measure A, and State Active Transportation (ATP) funds.

Pohono Park and Ride – Marin Transit has FTA Paul Sarbanes Transit in the Parks grant funding to improve the passenger experience at the Pohono Park and Ride. Muir Woods Shuttle service has become an integral mode of travel to the Muir Woods National Monument with frequent, high capacity service. Increased bus frequency has reduced passenger waits and lines. However, there can be up to 50 people waiting at to board at Pohono. Marin Transit has been actively working on improving signage, adding tables and trash receptacles in coordination with the adjacent office complex, the County of Marin, and Caltrans. The District has designed a new Mobile Information Kiosk to serve as a central location for customer service information and create a Muir Woods shuttle presence within the office complex parking area.

SMART Stations- SMART has designed and constructed its stations in partnership with the local jurisdictions. Marin Transit supports these efforts as opportunities to strengthen mobility options, and participated in developing the Metropolitan Transportation Commission’s (MTC) SMART Integration Plan. MTC identified existing conditions and challenges, and recommended plans for each Phase 1 station. These are the recommendations to improve bus transit access and operations at Marin County stations:

- (Unfunded) Novato Atherton/San Marin – The passenger pick-up/drop-off area is already constructed with a paved surface and geometrics that are not suited for bus turnaround activity. To improve transit access, a bus stop proximate to the station is recommended along with pursuit of a roundabout at Redwood Boulevard and Rush Landing Road.
- (Unfunded) Novato Hamilton Station – Establish an appropriate turnout location for buses nearby the station.
- (Unfunded) San Rafael Transit Station - The SMART schedule is based on the “pulse” schedule to ensure convenient connections at the San Rafael Transit Center. SMART expects its highest number of boardings and transfers will occur at this location, with nearly 50 percent of daily passengers expected to transfer. Both Marin Transit and Golden Gate Transit’s operations rely on this location. To extend service to Larkspur, SMART will bifurcate the San Rafael Transit Center. As a result, the facility will need to be significantly redesigned to efficiently and safely integrate bus, train, and pedestrian activity. Impacts on accessibility, circulation, costs, and a potential new location will require major changes to bus route alignments. An integrated multimodal facility is a critical priority for GGT, City of San Rafael, Marin Transit, TAM, and MTC. These partners will continue to work on the transit center redesign or relocation, which remains unfunded.

Major Transit Corridor Improvements (unfunded)

Recent service changes added new limited stop or express bus services that reduce travel time to major destinations. These services target major travel corridors such as Highway 101, Sir Francis Drake Blvd., 4th Street/Miracle Mile, and areas of the Canal. Travel time savings for transit can also be achieved through capital infrastructure investments in these corridors including traffic signalizing priority, transit queue jump lanes, and bus stop bulb outs. These features speed up transit operations, improve safety, and make transit more competitive with automobile travel.

The District actively participates in countywide efforts to study the benefits of infrastructure investments in key transit corridors. Recent efforts include the Sir Francis Drake Boulevard Rehabilitation Project; US101/East Blithedale Ave-Tiburon Blvd. Interchange Pedestrian and Bicycle Access Planning Study; Fairfax-San Rafael Transit Corridor Feasibility Study; and Caltrans Ramp Metering efforts. The District has submitted a grant application for funds to implement signal improvements that will support transit operations in the Sir Francis Drake corridor. The District is partnering with TAM, the County of Marin, GGBHTD, City of Larkspur, City of San Rafael, Town of Ross, Town of San Anselmo, and Caltrans. Transit use significantly expands capacity in these congested corridors (person throughput), and Marin Transit will continue to lobby for these enhancements.

Administrative and Operations Facilities

Bus Operations and Maintenance Facilities

Marin Transit provides contractors with the vehicles to operate its service, and relies on them to provide maintenance and storage facilities. There are four maintenance yards, eight storage yards, and four fueling locations that support District operations. Marin Transit is seeking to lease or purchase its own facility to increase competition for contracted services, reduce long term risks and uncertainties, and consolidate existing facilities. Space needs include contract operations and maintenance services for fixed and paratransit vehicles, with provisions for gradual transition to mostly electric buses. The facility design is intended to utilize solar power and meet the minimum level LEED certification.

The Federal Transit Administration (FTA) has awarded the District a \$4.4 million 5339 Bus Facilities grant to purchase land, and the local match is \$1.1 million for a total of \$5.5 million. Additional funding is needed to construct the facility, purchase equipment, and acquire furnishings.

Yellow Bus Parking and Maintenance Facilities

The capital plan includes a project to purchase land for yellow bus parking. The yellow bus program is operated by contractors with facilities outside the County. The District has historically secured temporary parking for vehicles, but this lease will not be available after June 2018. Parking for the yellow bus service is critical to control operational costs and it is a major constraint as the District goes out to bid for this service and evaluates future expansion. A District owned parking facility within the County will increase bus operators' interest in bidding on the work, create more reliability within the service, and ultimately reduce ongoing operations costs.

Marin County has limited sites that are appropriate for this use. The District will work with all partners to look for a site that can park the most vehicles. Having a site where the contractor can also maintain the vehicles would further reduce operations costs for the service. The District needs to purchase a space that can accommodate 15 buses for the programs currently in operation. Marin Transit expects that more school districts will be interested in offering yellow school bus service soon. To ensure sustainable growth and cost stability of the yellow school bus program, securing a long-term parking facility within the County that can accommodate 24 buses is required for the next phase of expansion. As outlined in the Coordinated Countywide Student Transportation Study, the final growth phase would provide service for nine school districts and would require parking for 70 buses.

Staff Offices

Marin Transit currently leases staff offices in San Rafael. The current lease extends through 2018. If a bus operations and maintenance facility was purchased, the District would look at the cost savings and operational efficiencies that could be gained from co-locating the staff offices with operations.

Technology and Other Capital Needs

Most of the remaining capital expenditures consist of communication equipment, fare collection, and major vehicles repairs. Staff time not charged directly to capitalize projects is also included in the infrastructure support costs.

Radio/Communication Project

Marin Transit needs reliable, cost-effective radio communications for daily transit operations and emergency communication with the Marin County Emergency Operations Center, emergency responders, and other operators. The District relies on multiple radio systems for basic and emergency communication. The paratransit service is connected to the Marin Emergency Radio Authority (MERA) system. The shuttle and rural services use Nextel and Motorola radio systems, and GGBHTD-operated services use an in-house radio system. Marin County voters approved a property tax measure in 2014 to upgrade MERA. The District is conducting a radio needs assessment that will evaluate the current radio communications, assess future conditions, and recommend options for future radio communications systems. Additional radio communications funding may be needed based on the study recommendations.

Advance Vehicle Location (AVL)

Marin Transit installed an AVL system on the Shuttle and Rural programs in 2011 to provide real time bus arrival information for passengers, and expanded the system to all Marin Transit services in 2016 not operated by GGBHTD. Information is available online and on limited real-time signs at stops across the County. Marin Transit and GGBHTD are working with MTC and vendors to create a real-time sign that can display all Route information on a single sign. This technology has been already deployed at the San Rafael Transit Center and will be installed at the Downtown Novato Transit Facility.

Marin Transit plans to work with GGBHTD to deploy the new integrated real-time signs and information at all transfer points, freeway bus pads, and some high use bus stops at about 50 locations. The installation cost is estimated to be \$12,000 per stop for those that do not require significant design review or engineering. The total project cost is estimated at \$600,000. This project is not in the funded capital plan, and grant funds or other additional revenue will be required.

Fare Collection

As discussed in the service plan chapter, Marin Transit's fare structure is embedded into GGBHTD regional zone based system. This embedded flat fare within a zone based system requires complicated programming with limitation for both Marin Transit and GGBHTD. Marin Transit intends to transition to a transfer agreement with GGBHTD similar to their fare structure with SMART.

Marin Transit supports the Clipper regional fare payment card, which is now deployed on all services. To accelerate Clipper for use on local bus service, Marin Transit deployed Clipper with the design and function of GGBHTD's regional system. Under this structure, Clipper cannot support Marin Transit's pass products and requires passengers to tag on and tag off the bus to get the correct fare. If passengers fail to tag off, Clipper charges them the maximum regional fare (up to \$7.60). The potential for incurring the maximum fare instead of the \$2.00 flat fare is too high of a risk for low-income riders and a deterrent to using Clipper.

Marin Transit has worked with MTC and Clipper to develop a change order to simplify the District's deployment of Clipper to a single tag flat fare to speed boarding and increase use. At this time, the region has not committed to paying for these changes with regional funds. The Capital plan includes local sales tax funding for this change. Staff will continue to work with MTC and the Clipper team to determine if the region should pay these costs.

Marin Transit uses a highly sophisticated Genfare (GFI) validating farebox for use of cash fares and magnetic cards on the fixed route system. Marin Transit will continue to maintain this system until a new Clipper system is implemented that supports monthly and weekly passes. The District will need to either re-program the GFI fareboxes or consider a simplified farebox solution in the meantime.

Paratransit fares are paid in cash to the driver. In 2016, Marin Transit installed non-validating fareboxes in paratransit vehicles to increase security. The District is implementing a pre-paid electronic option for paratransit fares through its Trapeze software upgrade, expected to be available in early 2018.

Capital Contribution to Contractor

Marin Transit's annual capital contribution to GGBHTD was reduced significantly under the operations contract effective July 1, 2015. This payment is for the depreciation on the local share of assets purchased prior to 2006. The District budgets payments for major vehicle repairs or significant capital expenditures for all contracts under Major Vehicle Repairs and Infrastructure Support.

Bus Stop Maintenance

Measure A funds support ongoing maintenance contracts to clean and repair Marin Transit local bus stops. The majority of bus stop maintenance is done by GGBHTD or by local jurisdictions (City of Novato and San Rafael) under advertising agreements.

Major Vehicle Repairs

Vehicle service and minor maintenance is provided by the associated contract operators. Marin Transit is responsible for major repairs, including engine and transmission replacements. Under the previous contract with GGBHTD, Marin Transit paid for major vehicle repairs through the Capital Contribution. Marin Transit now directly pays for these repairs, and the District's associated budget anticipates this.

Infrastructure Support

This includes Marin Transit staff time on capital programs not directly billed to projects along with low value capital assets and other equipment.