



# **Financial Analysis**

Prepared for the Berkeley Charleston  
Dorchester Council of Governments

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## Table of Contents

Introduction .....	3	Operating Plan – BRT Corridors.....	20
Capital Cost Estimates.....	3	Fixed Route and BRT Fleet Impact .....	21
Potential Capital Revenues .....	5	O&M Cost Methodology.....	23
Capital Funding: Federal Programs .....	6	CARTA O&M Cost Model.....	23
FTA Capital Investment Grant Program .....	6	O&M Cost Estimates .....	25
Other Federal Programs .....	8	BRT and BRT-Lite Corridors .....	25
FTA Formula Funds .....	8	Combined BRT and BRT-Lite and Proposed Changes to Existing Services .....	25
FHWA Formula Funds .....	9	TCL Services O&M Cost Impact .....	26
Competitive Grants .....	10	Ridership and Fare Revenue.....	27
Non-Federal Matching Funds .....	13	Potential Non-operating Revenues .....	29
Value Capture .....	13	Conclusion .....	31
Tax Increment Financing Districts .....	13	Appendix A: CARTA Fixed Route O&M Cost Model .....	36
Municipal Improvement Districts .....	15	.....	37
Joint Development .....	17		
Air Rights .....	17		
Private Contributions .....	17		
Developer Contributions.....	17		
Sponsorships and Naming Rights .....	18		
Operating Cost Estimates .....	19		
Operating Plan – Existing CARTA Fixed Route System .....	19		

## List of Tables

Table 1: Conceptual Capital Costs (2018 \$, in millions).	3
Table 2: Annual and Compound Annual Growth Rates ..	4
Table 3: Conceptual Capital Costs (\$, in millions).....	5
Table 4: Conceptual Cost Sharing (\$, in millions) .....	5
Table 5: Illustrative Federal / Non-Federal Funding Split (YOE \$, in millions).....	6
Table 6: BUILD/TIGER Program Size, Applicants, and Projects Funded (FY2009 – 2017).....	10



# Regional Transit Framework Plan

Table 7: Proposed CARTA Service Changes: Existing Fixed Route Network.....19

Table 8: Estimated Annual Service Levels: BRT and BRT-Lite Corridors .....20

Table 9: Combined Impact on CARTA’s Annual Service Levels .....21

Table 10: Estimated Total<sup>1</sup> Fleet Fixed Route and BRT Fleet Requirements.....21

Table 11: BRT and BRT-Lite Estimated Annual O&M Costs (2018\$ and YOE\$, in millions).....25

Table 12: Total O&M Costs: 2018 to 2040 (2018\$, in millions).....25

Table 13: Total O&M Costs: 2018 to 2040 (YOE\$, in millions).....26

Table 14: Proposed TCL Service Changes .....26

Table 15: CARTA System Ridership Forecast.....27

Table 16: Comparison: CARTA O&M Costs and Fare Revenue Assumptions .....28

Table 17: Estimated Operations Funding Gap Analysis (YOE\$, in millions) .....33

Table 18: Estimated BRT and Fixed Route Fleet Capital Funding Gap Analysis (YOE\$, in millions).....34

## Introduction

This technical memorandum discusses the financial analysis conducted for the Berkeley Charleston Dorchester Council of Governments (BCDCOG) Regional Transit Framework Plan (RTFP) in the tri-county region. Specifically, this memorandum summarizes the conceptual capital and operating costs, potential revenue, and conceptual funding gap for the preferred bus rapid transit (BRT) and BRT-Lite corridors. It should be noted that for the purposes of this analysis, the Lowcountry Rapid Transit Project is assumed to be part of the existing transit system and is included in the operating and maintenance (O&M) cost and ridership analysis starting in 2025. Capital costs and funding assumptions for the Lowcountry Rapid Transit Project are not included in this analysis.

## Capital Cost Estimates

The capital cost estimates reflect planning completed for the RTFP and the assumptions summarized in the Priority Corridors Cost Estimate. These estimates do not include any engineering and as a result should be considered conceptual. Table 1 summarizes the costs in current year dollars (2018 \$) and reflect corridor costs ranging from \$98.5 million to \$458.0 million.

**Table 1: Conceptual Capital Costs  
(2018 \$, in millions)**

<b>BRT Corridors</b>	<b>Total Costs</b>
Corridor E: Summerville-Charleston (Dorchester Rd)	\$458.0
Corridor N: Mt. Pleasant-Charleston (Hwy 17)	\$285.0
Corridor K: West Ashley-Charleston (Glenn McConnell/Hwy 17)	\$264.3
<b>BRT-Lite Corridors</b>	
Corridor C: Moncks Corner-Charleston (Hwy 52)	\$240.8
Corridor M: James Island-Charleston (Hwy 17)	\$98.5
<b>Total</b>	<b>\$1,346.6</b>

Note: Conceptual costs for planning purposes only

For the purposes of this financial analysis, the current year dollar costs were converted to year of expenditure dollars (YOE \$). The conversion to YOE \$ reflects the impact of annual and compound annual escalation construction cost growth rates (inflation) based on an assumed implementation schedule and cost curve. The assumed annual cost escalation factor for this analysis is 3 percent per year. Table 2 summarizes the annual escalation rates and the corresponding compound annual escalation rates. For example, and to illustrate the impact of converting costs to YOE \$, a project that costs \$1.0 million in 2018 would cost \$1.23 million in 2025.

**Table 2: Annual and Compound Annual Growth Rates**

	<b>Annual Escalation</b>	<b>Compound Annual Escalation</b>
2018	0.00	1.00
2019	0.03	1.03
2020	0.03	1.06
2021	0.03	1.09
2022	0.03	1.13
2023	0.03	1.16
2024	0.03	1.19
2025	0.03	1.23
2026	0.03	1.27
2027	0.03	1.30
2028	0.03	1.34
2029	0.03	1.38
2030	0.03	1.43
2031	0.03	1.47
2032	0.03	1.51
2033	0.03	1.56
2034	0.03	1.60
2035	0.03	1.65

The second element in developing a YOES cost estimate is estimating annual costs during the implementation period. For the purposes of this analysis, it was assumed that for each BRT and BRT-Lite corridor it will take five years to complete the implementation process (planning/environmental documentation, engineering, and construction). Additionally, in order to estimate annual costs during the implementation period, it was assumed that the total costs shown in Table 1 would be allocated per year based on the following percentages.

- Year 1: 5 percent
- Year 2: 10 percent
- Year 3: 30 percent
- Year 4: 40 percent
- Year 5: 15 percent

Finally, the following implementation periods were assumed for the corridors

- Corridor E: 2025 to 2029;
- Corridor C: 2025 to 2029;
- Corridor N: 2030 to 2034;
- Corridor K: 2030 to 2034; and
- Corridor M: 2030 to 2034.

Table 3 provides a comparison of total conceptual costs in 2018 dollars and YOES dollars based on the above assumptions. As shown in the table, the total cost for the five BRT and BRT-Lite in 2018 dollars is \$1.3 billion and in YOES dollars is \$1.9 billion.

**Table 3: Conceptual Capital Costs  
(\$, in millions)**

BRT Corridors	2018 \$	YOE \$
Corridor E	\$458.0	\$606.8
Corridor N	\$285.0	\$437.6
Corridor K	\$264.3	\$405.9
<b>BRT-Lite Corridors</b>		\$0.0
Corridor C	\$240.8	\$319.0
Corridor M	\$98.5	\$151.2
<b>Total</b>	<b>\$1,346.6</b>	<b>\$1,920.6</b>

Note: Conceptual costs for planning purposes only

Reflecting cost sharing approaches used for similar multijurisdictional projects across the country, the percent of the total route length in each county was assumed to be a basis for sharing the costs for the BRT and BRT-Lite corridors. For example, Corridor E provides service across two counties, with approximately 50 percent of the route in Berkeley County and 50 percent of the route in Charleston County. Therefore, Berkeley and Charleston would each be responsible for approximately half the capital cost of Corridor E. Table 4 summarizes the percent of each corridor in Berkeley, Charleston, and Dorchester Counties. The table also provides a conceptual level of total capital costs that would be allocated to each county based on these percentages.

**Table 4: Conceptual Cost Sharing  
(\$, in millions)**

BRT Corridors	Length	% in Berkeley	% in Charleston	% in Dorchester
Corridor E	33.86	50.4%	49.6%	0.0%
Corridor N	13.65	0.0%	100.0%	0.0%
Corridor K	10.84	0.0%	100.0%	0.0%
<b>BRT-Lite Corridors</b>				
Corridor C	26.50	0.0%	59.6%	40.4%
Corridor M	8.63	0.0%	100.0%	0.0%
	<b>Total Costs</b>	<b>Berkley Cost Share</b>	<b>Charleston Cost Share</b>	<b>Dorchester Cost Share</b>
<b>BRT Corridors</b>				
Corridor E	\$606.8	\$305.7	\$300.9	\$0.0
Corridor N	\$437.6	\$0.0	\$437.6	\$0.0
Corridor K	\$405.9	\$0.0	\$405.9	\$0.0
<b>BRT-Lite Corridors</b>				
Corridor C	\$319.0	\$0.0	\$190.2	\$128.7
Corridor M	\$151.2	\$0.0	\$151.2	\$0.0
<b>Total</b>	<b>\$1,920.6</b>	<b>\$305.7</b>	<b>\$1,485.9</b>	<b>\$128.7</b>

Note: Conceptual costs for planning purposes only

## Potential Capital Revenues

The following provides an overview of the primary federal funding programs used to implement recent BRT and other high capacity transit projects across the country. Additionally, an overview of potential non-federal matching funds, beyond Charleston Area Regional Transportation Authority's (CARTA) existing dedicated sales tax revenue, is provided within this section.

## Capital Funding: Federal Programs

Under current federal transportation legislation, the maximum share of federal funding that can be used to support implementation of high capacity transit project is 80 percent. With the exception of smaller scale BRT projects (total costs less than \$125 million), project sponsors that pursue the 80 percent maximum target must combine a variety of the programs described below. The remaining 20 percent is provided by local, state or regional funding sources. More specifically, project sponsors using the approach of maximizing federal participation (80 percent) typically request 50 percent of funding through the Federal Transit Administration's (FTA) Capital Investment Grant (CIG) Program, and the remaining 30 percent is targeted through other FTA or Federal Highway Administration (FHWA) formula funds. For illustrative purposes, Table 5 provides an overview of the federal and non-federal funding needs for the BRT and BRT-Lite corridors assuming total federal participation ranging between 50 percent (\$960.3 million) and 80 percent (\$1.5 billion) and the corresponding non-federal participation ranging from 50 percent (\$960.3 million) to 20 percent (\$384.1 million), respectively.

**Table 5: Illustrative Federal / Non-Federal Funding Split  
(YOE \$, in millions)**

<b>BRT Corridors</b>	<b>Total Costs</b>	<b>50% Fed</b>	<b>50% Non-Fed</b>	<b>80% Fed</b>	<b>20% Non-Fed</b>
Corridor E	\$606.8	\$303.4	\$303.4	\$485.4	\$121.4
Corridor N	\$437.6	\$218.8	\$218.8	\$350.1	\$87.5
Corridor K	\$405.9	\$203.0	\$203.0	\$324.7	\$81.2
<b>BRT-Lite Corridors</b>					
Corridor C	\$319.0	\$159.5	\$159.5	\$255.2	\$63.8
Corridor M	\$151.2	\$75.6	\$75.6	\$121.0	\$30.2
<b>Total</b>	<b>\$1,920.6</b>	<b>\$960.3</b>	<b>\$960.3</b>	<b>\$1,536.5</b>	<b>\$384.1</b>

Note: Conceptual costs for planning purposes only

### FTA Capital Investment Grant Program

The FTA CIG Program awards grants on a discretionary basis for major capital investments in new and expanded rail, BRT, and ferry projects that are locally planned, implemented, and operated. The CIG Program includes two categories for new high capacity transit projects:

- **The New Starts Category** funds projects with capital costs in excess of \$300 million and project sponsors requesting more than \$100 million in CIG funds. Potential New Starts projects are evaluated and rated based on a set of defined justification criteria (mobility improvements, environmental benefits, cost effectiveness, economic development effects, and public transportation supportive land use policies)

as well as local financial commitment criteria, with local financial commitment comprising 50 percent of the total rating.

Project sponsors are required to demonstrate that the proposed New Starts project is supported by an acceptable degree of local financial commitment, including evidence of stable and dependable financing sources to construct, maintain, and operate the new or extended transit system, and maintain and operate the entire public transportation system without requiring a reduction in existing services. Sponsors must prepare a financial plan and 20-year cash flow statement in accordance with FTA's Guidance for Transit Financial Plans.

The summary local financial commitment rating also takes into consideration the share of CIG funding requested. Specifically, FTA encourages project sponsors to request lower levels of CIG funds by providing a one level rating increase to the summary local financial commitment score. For example, if based on the financial plan and supporting materials submitted as part of the New Starts Application, the summary local financial commitment rating score is "Medium". However, if the project sponsor's request for CIG funding is less than 50 percent of the project's capital cost (i.e., the project sponsor is providing significant overmatch), then the summary local financial commitment rating will be raised one level to "Medium-High". As a result, although current legislation allows project sponsors to request

greater than 50 percent funding from the CIG program, the trend has been to request slightly less than 50 percent in order to receive the one level rating increase.

Based on the conceptual capital costs described in the previous section, all three BRT corridors and one BRT-Lite corridor (Corridor C) meet the cost threshold for applying for New Starts category funds.

- **The Small Starts Category** funds projects with capital costs less than \$300 million and project sponsors requesting less than \$100 million in CIG funds. These projects are evaluated and rated on fewer project justification criteria and local financial commitment measures. Similar to New Starts, project sponsors are required to demonstrate that the proposed Small Starts project is supported by an acceptable degree of local financial commitment, including evidence of stable and dependable financing sources to construct, maintain, and operate the new or extended transit system, and maintain and operate the entire public transportation system without requiring a reduction in existing services. Sponsors must prepare a financial plan and 20-year cash flow statement in accordance with FTA's Guidance for Transit Financial Plans.

Small Starts projects can qualify for a highly-simplified financial evaluation if the project sponsor can demonstrate the following:





## Regional Transit Framework Plan

- A reasonable plan to secure funding for the local share of capital costs or sufficient available funds for the local share;
- The additional O&M cost to the agency of the proposed Small Starts project is less than five percent of the project sponsor's current year approved operating budget; and
- The project sponsor is in reasonably good financial condition.

Similar to the New Starts discussion, FTA encourages project sponsors to request less than 50 percent in CIG funds for Small Starts projects. With regards to the proposed Small Starts projects that qualify for the simplified financial evaluation, if the project sponsor requests greater than 50 percent CIG funding, the project will automatically receive a local financial commitment rating of Medium. However, if the proposed Small Starts project meets the simplified financial evaluation criteria and requests less than 50 percent in CIG funding, the Project will automatically receive a High rating for local financial commitment.

For Small Starts projects that cannot qualify for the simplified financial evaluation, the evaluation process is similar to that of New Starts. As with New Starts, the summary local financial commitment rating will also take into consideration the share of CIG funding requested. If the summary local financial commitment rating is at least Medium and the CIG share is less than 50

percent of the project's capital cost (i.e., the project sponsor is providing significant overmatch), then the summary local financial commitment rating will be raised one level.

Based on the conceptual cost estimates, Corridor M would be eligible to apply for Small Starts funds.

### Other Federal Programs

The following provides an overview of other federal funding programs that can be combined with CIG funds to support implementation of the potential high capacity transit projects. While there is no limitation on the number of federal funding programs that can be included in a financial strategy, as mentioned earlier, the maximum federal funding participation that can be used on a project is 80 percent of the total capital costs.

#### FTA Formula Funds

CARTA receives annual formula funds through the FTA Section 5307 Urbanized Area Formula Program and Section 5339 Bus and Bus Facilities Formula Grants. Eligible activities for Section 5307 funds include planning, engineering, design, and evaluation of transit projects and other technical transportation-related studies; crime prevention and security equipment; vehicle acquisition and replacement; construction of maintenance and passenger facilities; and capital investments in new and existing fixed guideway systems including rolling stock, overhaul and rebuilding of vehicles, track, signals, communications, and computer hardware and software. Specifically related to high capacity transit projects, and

depending on CARTA's short-term capital improvement and state of good repair needs, Section 5307 could support planning and engineering as well as the construction of project elements such as stations, park-and-ride lots, or communication systems.

Eligible activities for Section 5339 funds include capital projects to replace, rehabilitate and purchase buses, vans, and related equipment, and to construct bus-related facilities.

Based on experiences across the country, implementation of high capacity BRT service in a corridor with existing bus service typically results in the reduction or elimination of existing local bus service within the corridor. In such cases, FTA formula funds can be used to support implementation of a high capacity transit project by acquiring new vehicles, among other uses. This could be accomplished without impacting the agency's existing vehicle replacement plan and state of good repair program.

As an illustrative example, assume implementation of the BRT or BRT-Lite corridor will result in the reduction of 10 buses from the existing local service. The FTA formula funds that would have been used to purchase 10 replacement buses for this local service could be transferred to acquire a portion of the costs for the BRT vehicles.

### **FHWA Formula Funds**

FHWA formula funds include sources that are eligible to be "flexed" or transferred to the FTA to support

implementation of transit projects. These funds are programmed by the BCDCOG and would require adoption in BCDCOG's Long Range Transportation Plan (LRTP) and Transportation Improvement Plan (TIP) to be used to fund a portion of the high capacity transit project's capital costs. Flexible FHWA funding sources are profiled in the following subsections.

#### *Surface Transportation Program*

The Surface Transportation Program (STP) provides funding for projects that preserve and improve the conditions and performance on any federal-aid highway, bridge, and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects. Potential high capacity transit project elements that could be eligible for STP funds include:

- Construction, reconstruction, rehabilitation, resurfacing, restoration, preservation, or operational improvements for highways;
- Capital costs for transit projects;
- Corridor parking facilities;
- Improvements at intersections with high crash rates or levels of congestion; or
- Infrastructure-based intelligent transportation system (ITS) capital improvements.

#### *Transportation Alternatives Program*

The Transportation Alternatives Program (TAP) is a competitive grant program that could provide funding for non-motorized elements of the potential high capacity

transit projects. Potential eligible expenses for TAP funds could include planning, design, and construction of facilities for pedestrians and bicyclists.

### Competitive Grants

As a project moves through the FTA implementation process, there may be opportunities to leverage additional federal funding for specific elements of the project through competitive grant opportunities. The subsections below provide a brief overview of competitive grant programs used by other transit agencies to support the planning, engineering, and/or construction of high capacity transit projects.

#### *USDOT BUILD Grants (formerly known as TIGER)*

The Better Utilizing Investments to Leverage Development (BUILD) Program, known as the TIGER Program until 2018, is one of USDOT's largest multimodal discretionary grant programs and supports innovative projects that would be otherwise difficult to fund through traditional federal programs. USDOT seeks projects that will catalyze long-lasting, positive changes in economic development, safety, quality of life, environmental sustainability, and state of good repair. Prior rounds of TIGER have prioritized projects seeking to improve access to reliable, safe, and affordable transportation to enhance connectivity and provide ladders of opportunity for communities in urban, suburban, and rural areas.

The BUILD/TIGER Program is extremely competitive with a total of 7,300 applications submitted to USDOT requesting \$143 billion in TIGER funds over the

program's first eight rounds (through 2016). USDOT has awarded a total of \$5.1 billion to 421 projects, which is less than six percent of all applicants. Table 4 illustrates overall supply and demand for the program since it was first authorized under the American Recovery and Reinvestment Act (ARRA) of 2009. While there have been annual appropriations for TIGER/BUILD every Fiscal Year (FY) since 2009, including the most recent application request in July 2018, the program is not specifically authorized in federal legislation.

**Table 6: TIGER/BUILD Program Size, Applicants, and Projects Funded (FY2009 – 2017)**

Fiscal Year (FY)	Program Size (\$M)	Applicants	Projects Funded	Percent of Projects Funded
2009	1,500	~1,400	51	3.6%
2010	600	~1,700	75	4.4%
2011	510	848	46	5.4%
2012	500	703	47	6.7%
2013	474	585	52	8.9%
2014	600	797	72	9.0%
2015	500	627	39	6.2%
2016	500	585	40	6.8%

Source: USDOT. Note: USDOT did not announce the total number of applicants for the 2017 application cycle, and the 2018 awards have not yet been announced.

Despite the program's \$100 million statutory maximum grant amount, the typical TIGER grant awarded to projects in urban areas has been \$10 to \$15 million. TIGER grants awarded to transit projects average \$12 million. USDOT rarely awards close to its maximum of \$25 million in TIGER funding to any one project. Since 2012, only 20 out of 250 TIGER projects have received

\$20 million or more in funding. Notably, nearly two-thirds of the 40 grant recipients in FY 2016 were repeat applicants.

If CARTA and its partners were to pursue a future BUILD grant (assuming the program continues) to support implementation of the BRT and BRT-Lite corridors, the application would need to demonstrate how specific elements meet requirements for independent utility. For example, the Detroit QLINE streetcar project and Reno BRT project received TIGER awards for multimodal roadway improvements that would benefit the respective communities with or without the streetcar project or BRT project.

#### *Transit Oriented Development Pilot Program*

The Transit Oriented Development (TOD) Pilot Program provides funding to advance planning efforts that support TOD associated with new high capacity transit projects. The grants are intended to provide funding to integrate land use and transportation planning efforts along eligible transit projects in order to support transit ridership, multimodal connectivity, and mixed-use development near transit stations. More specifically, comprehensive planning funded through the program must examine ways to improve economic development and ridership, foster multimodal connectivity and accessibility, improve transit access for pedestrian and bicycle traffic, engage the private sector, identify infrastructure needs, and enable mixed-use development near transit stations.

CARTA would need to demonstrate that the BRT and BRT-Lite corridors would be eligible as “new fixed guideway projects” to apply for these funds. FTA’s

requirement is a new public transportation facility that uses a separate right-of-way (ROW), rail, or a fixed catenary system, or that it is used for a passenger ferry system or bus rapid transit. The FAST Act reauthorized this program until 2020. The most recent awards were announced in FY 2016 and totaled \$14.7 million for 16 metropolitan areas around the country. Awards ranged from the minimum of \$250,000 to the maximum of \$2 million, with an average award of \$920,000. The most recent application requests were due July 23, 2018 with \$25.8 million available for this round.

Applications should involve comprehensive planning projects covering an entire transit capital project corridor, rather than proposals for individual station areas or small sections of the corridor. Selected projects must:

- Enhance economic development and ridership;
- Facilitate multimodal connectivity;
- Increase access to transit hubs for bicyclists and pedestrians;
- Enable mixed-use development;
- Identify infrastructure needs; and
- Include private sector participation.

FTA is prioritizing applications in corridors with significant challenges related to TOD planning, low levels of existing development, lack of connectivity to essential services, or where the cost of the planning work to overcome the challenges exceeds what might be readily available

locally. FTA is also prioritizing projects that include strategies to address the gentrification and displacement that can sometimes occur when transit capital projects are implemented. To ensure that planning work reflects the needs and aspirations of the local community and results in concrete, specific deliverables and outcomes, FTA is requiring that transit project sponsors partner with entities with land use planning authority in the transit project corridor.

#### *Bus and Bus Facilities Discretionary Grant Programs*

The Section 5339(b) Bus and Bus Facilities Competitive Grant Program (Bus Program) and Section 5339(c) Low or No Emissions Bus Competitive Grant Program (Low-No Program) are discretionary grant programs authorized under the FAST Act. Similar to the FTA formula fund programs described previously, while these programs may not provide direct funding to a BRT project, funding could be used to support other CARTA capital expenses and potentially free up other funds that could support implementation of the BRT corridors.

The Bus Program provides funds for capital projects to replace, rehabilitate, purchase, or lease buses and related equipment and to rehabilitate, purchase, construct, or lease bus-related facilities. The purpose of the Bus Program is to improve the condition of the nation's public transportation bus fleets, expand transportation access to employment, educational, and healthcare facilities, and to improve mobility options in rural and urban areas throughout the country. The FTA prioritizes projects that demonstrate how they will address significant repair and maintenance needs, improve the safety of transit systems, deploy projects that

include advanced technologies to connect bus systems with other networks, and support the creation of ladders of opportunity. Of the amounts made available, no more than 10 percent may be awarded to a single grantee. The FTA announced the first round of program funding in FY 2016, awarding a total of \$211 million to 61 projects. Awards ranged from \$26,400 to \$12.8 million, with an average award of \$3.5 million. In FY 2017, FTA awarded a total of \$264.5 million to 139 projects which equates to an average award of approximately \$1.9 million. The South Carolina Department of Transportation received a grant award of \$4.5 million to support bus replacements for agencies around the state. The third round of applications for the Bus Program were due on August 8, 2018. FTA plans to award \$366.3 million later this fall.

The Low-No Program provides funds for the purchase or lease of zero-emission and low-emission transit buses, including acquisition, construction, and leasing of required supporting facilities such as recharging, refueling, and maintenance facilities. The purpose of the Low-No Program is to support the transition of the nation's transit fleet to the lowest polluting and most energy efficient transit vehicle technologies, thereby reducing local air pollution and direct carbon emissions, and to support the deployment of technologically advanced US-made transit buses that have been largely proven in testing and demonstrations, but are not yet widely deployed in transit fleets. The FTA announced the first round of program funding in FY 2016, awarding a total of \$55 million to 20 projects. Awards ranged from \$683,400 to \$3.9 million, with an average award of \$2.8 million. In FY 2017, \$55.0 million was awarded to 128

projects and \$84.5 million was awarded to 52 projects in FY 2018. BCDCOG, in partnership with Proterra, received a \$1.5 million grant as part of the FY 2018 application round.

### **Non-Federal Matching Funds**

This section identifies potential non-federal sources that could be applied to the BRT and BRT-Lite corridors as the required local funding match for federal programs. As described in more detail later in this technical memorandum, CARTA receives local funding through a transportation sales tax. These revenues have been identified as the non-federal match for CARTA's first BRT corridor, the Lowcountry Rapid Transit Project, as well as a source for ongoing operating expenses of the existing transit network and the Lowcountry Rapid Transit Project. Supplemental non-federal funding will be required to implement the five BRT and BRT-Lite corridors.

The following provides an overview of potential supplemental sources, beyond city, county, and state general transportation funds that have been considered and/or used to support high capacity transit projects around the country. These sources could potentially be targeted by CARTA as part of the planning and implementation process for the BRT and BRT-Lite corridors.

### **Value Capture**

In recent years, the FTA and USDOT have placed additional emphasis on project sponsors evaluating the potential to include value capture mechanisms as part of the financial strategy for major infrastructure projects.

Part of this emphasis is to identify opportunities for new or increased non-federal funding for the transportation project, and part of the emphasis is to strengthen the connection between transportation investments and local economic development. The following provides a review of different value capture approaches and examples of where the value capture mechanisms have supported transit projects. The following examples reflect rail transit projects but these approaches or variations of the approaches could be used to support BRT corridors.

### **Tax Increment Financing Districts**

Tax Increment Financing (TIF) involves the creation of a special taxing district that captures incremental changes in property tax revenues. The tax base is frozen at predevelopment levels, and all or a portion of property tax revenues derived from increases in assessed values (the tax increment) is applied to a special fund created to retire tax-exempt bonds issued for development of the district. TIF revenues are small initially, but grow over time as the redevelopment project increases in value, which often results in additional economic growth and increased property values in the district. TIF districts are generally created for a set period of time, often for 20 to 30 years.

South Carolina's TIF Law was authorized by the 1984 Act Number 452. TIF districts have been used in South Carolina for the City of Columbia's Innovista Redevelopment Plan, the Town of Lexington's Corley Mill/Sunset Boulevard Gateway Corridor project, and other redevelopment projects. State law requires that the

redevelopment area must be a blighted, conservation, or agricultural area located within a municipality's boundaries. Additionally, each TIF project must be publicly owned, and the municipality must prove that public intervention is required for the sound growth and redevelopment of the area.

Below are two examples of how TIF districts are being used to support major transit capital project.

- Chicago Red Purple Line Modernization:** In 2016, the Illinois General Assembly approved legislation that allows for the implementation of TIF districts that could be created around transit facilities (transit facility improvement area), thereby capturing the property value increase resulting from being near transit stations and facilities. Within the legislation, "transit facility" is defined as an existing or proposed transit passenger station, existing or proposed transit maintenance, storage or service facility, or existing or proposed right-of-way for use in providing commuter rail or urban mass transit service.

The legislation reflects the concept that existing facilities and proposed transit improvements will further increase property values and tax revenue, creating a cycle where transit keeps improving. The legislation requires that 80 percent of the revenue generated by these TIF districts would be earmarked for development or redevelopment of transit-related facilities.

A "transit facility improvement area" as defined in the legislation is an area whose boundaries are no more than one-half mile in any direction from the location of a mass transit facility; provided that the length of any existing or proposed right-of-way included in any transit facility improvement area shall not exceed six miles. The TIF district for a transit facility improvement area has a 35-year life.

Transit capital expenses or servicing debt issued for transit capital expenditures are the only eligible expenses for TIF district revenue. "Transit facility improvement area redevelopment project costs" means those costs that are "costs related to the construction, reconstruction, rehabilitation, remodeling or repair of any existing or proposed transit facility, whether publicly- or privately-owned".

The financial plan that supported Chicago Transit Authority's (CTA) Core Capacity Full Funding Grant Agreement included TIF revenue that was used to obtain a federal Transportation Infrastructure Finance and Innovation Act (TIFIA) loan. Specifically, an Intergovernmental Agreement with the City of Chicago authorized the reimbursement of CTA's TIF eligible project costs up to the amount of the \$622 million TIFIA loan and interest costs on the TIFIA loan.

- West Lake and South Shore Line Double Track Project:** Instead of using TIF revenues to support construction of a major transit investment, the

communities along the existing South Shore Line and the planned West Lake Corridor intend to use TIF revenue to implement infrastructure improvements to support TOD at station locations.

Specifically, the Northwest Indiana Regional Development Authority (RDA), the State's regional agency responsible for generating economic development and private investment for northwest Indiana, engaged with local communities at station areas to develop master plans and a working vision for TOD. Station area development plans include a mix of site preparation, multi-family residential, and retail/office construction, and street, streetscape and greenway improvements necessary to facilitate access to the rail stations.

Based on the station area development plans, the RDA estimated that the West Lake Project and South Shore Line Double Track Project will drive approximately \$2.3 billion in private investment into the station areas by 2041, supported by \$400 million in public investment, funded by "value capture" mechanisms around the stations.

In 2017, the RDA secured a key piece of legislation that creates an innovative and pioneering financing mechanism to support TOD and private investment in the station areas. The Indiana General Assembly passed HEA 1144-2017, an act that created "transit development

districts" (TDDs) around the existing and new stations for both the West Lake Project and South Shore Line Double Track Projects which form TIF districts. Revenue from the districts will be used to support the implementation of public infrastructure needed to support and encourage TOD at the stations.

### Municipal Improvement Districts

An improvement district is a defined area where businesses are required to pay an additional tax or fee to fund projects within the district's boundaries. These districts typically fund services that are perceived by some businesses as being inadequately performed by government with its existing tax revenues. Potential investments funded by improvement district revenues might include additional security, capital improvements (e.g., high capacity transit service), construction of pedestrian and streetscape enhancements, or general marketing of the area.

In South Carolina, improvement districts are called Municipal Improvement Districts (MID), which were authorized with the Municipal Improvement Act of 1999. Creating a MID first requires a petition signed by a majority of the real property owners within the proposed district, and then the council can adopt the ordinance with a majority vote.

The Kansas City Streetcar Program provides an example of a successful partnership with an improvement district. In 2011 and 2012, the City of Kansas City pursued the formation of a Missouri Transportation Development



District (TDD) known as the Kansas City Downtown Streetcar Transportation Development District (the Starter Line TDD) to provide the local match funding for the construction and operation of an approximately 4.5-mile (round-trip) modern streetcar line running predominantly along an approximately -2.2-mile stretch of Main Street between the River Market area and Union Station (the Starter Line). A TDD is a special purpose political subdivision with the power to impose certain revenue sources within (and only within) its boundary. In 2012, voters residing within the Starter Line TDD approved a one percent sales tax for 30 years within (and only within) the Starter Line TDD (the Starter Line TDD Sales Tax) and certain annual special assessments on all of the real estate within the Starter Line TDD (the Starter Line TDD Special Assessments, and together with the Starter Line TDD Sales Tax, the Starter Line TDD Revenue). The Starter Line TDD Revenue is used to pay debt service on the bond financing for the local match of design and construction costs of the Starter Line and a maintenance facility, the costs of vehicle acquisition, and O&M costs of the Starter Line.

Seeking to build on the momentum and extraordinary success of the Starter Line, a second TDD was proposed in late 2016 known as the Kansas City Main Street Rail Transportation Development District (the Main Street TDD) to provide the local match funding for the construction of an approximately seven-mile (round-trip)

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<sup>1</sup> For commercial property, the assessable value is 32% of the market value as determined by the County, and for residential property, the assessable value is 19% of the market value as determined by the County. Special assessments are payable by all non-governmental

extension of the Starter Line that would continue along Main Street south from the terminus of the Starter Line at Union Station through Midtown, into the mixed-use area known as Country Club Plaza and terminating in the vicinity of the Volker Campus of the University of Missouri-Kansas City (the Extension Line). The Main Street TDD encompasses approximately 10 square miles, and includes the land area comprising the Starter Line TDD. The intention is for the Main Street TDD to replace the Starter Line TDD as further explained below.

In August of 2017, voters residing within the Main Street TDD approved the formation of the Main Street TDD. The Main Street TDD is governed by a Board of Directors whose members are elected at large by the voters residing within the Main Street TDD for fixed terms. The initial Directors of the Main Street TDD were elected in October 2017. In June 2018, the voters in the Main Street TDD approved the imposition of a one-percent sales tax for 30 years within (and only within) the Main Street TDD (the Main Street TDD Sales Tax) and the following special assessments:

- Real Estate Special Assessments (Main Street TDD Real Estate Assessments) at the rate of (1) 48¢ for each \$100 of assessable value for commercial property, and (2) 70¢ for each \$100 of assessable value for residential property.<sup>1</sup>

properties, even non-governmental properties that have been granted tax abatement from regular property tax by the City of Kansas City, and properties that are exempt from regular property tax because of charitable use, such as churches and nonprofits.

- Surface Pay Parking Lot Assessments (Main Street TDD Pay Parking Lot Assessments) at the rate of \$54.75 multiplied by the number of pay parking spaces in commercial surface parking lots (not garages and not free employee or visitor spaces in a surface parking lot).

The Main Street TDD Revenue will not begin to be collected until (a) the Starter Line TDD is abolished, terminated or dissolved, or merged with or into the Main Street TDD, or its revenue sources reduced to zero by action of the Board of Directors of the Starter Line TDD or otherwise, in accordance with the applicable law, and (b) the Board of Directors of the Main Street TDD determines that there are sufficient funds to be derived from sources other than revenue of the Main Street TDD in order to make the construction of a substantial portion of the Extension Line financially viable when aggregated with revenue of the Main Street TDD. Specifically, the following chronological milestones will activate the TDD: (1) positive rating from the New Starts application; (2) approval into Engineering; and (3) recommended for funding by the Administration (of the United States) (or appropriation by US Congress).

Once collection of the Main Street TDD Revenue begins, it will pay for debt service on financing for the local match of the design and construction costs of the Extension Line, acquisition of additional vehicles, debt service on the bonds issued for the Starter Line (unless refinanced with the financing for the Extension Line) and O&M costs of the entire

combined Starter Line and Extension Line (approximately 12 miles round-trip).

### Joint Development

Joint development is a partnership between a public entity and a private developer created to develop certain assets. According to FTA guidance, the development and the property must have a physical and a functional relationship. Joint development can occur when an agency owns land that can be leased to the developer for a long period of time. This enables the developer to build on the land with a low risk of losing the capital investment. In exchange, rents are paid to the agency, creating a revenue stream that can be bonded against to support the development of a transit improvement. Revenue potential can vary depending on market conditions. Joint development can also take the form of the sale of development rights for upfront capital funding.

### Air Rights

Air rights refer to the right to develop, occupy, and control the vertical space above a property. Air rights can either be bought, leased, or transferred. This is most often seen in transit projects where the space above a transit station is developed by a private developer to build TOD.

### Private Contributions

#### Developer Contributions

Developers often provide in-kind, right-of-way, or monetary contributions to facilitate construction of infrastructure that would result in a positive impact on property values. Often these contributions are negotiated to reflect the benefit the developer derives from the

project. If funding is negotiated, project sponsors often request the contribution upfront to reduce overall financing needs and/or during the early portion of the debt service period. This enables the project sponsor to better leverage other funding options. In some instances, developers have received density allowance increases in return for their contributions. Contributions may be used to fill in funding gaps for both capital and O&M costs.

### Sponsorships and Naming Rights

Sponsorships and naming rights have been used by some transit systems in the United States to generate funds for transit capital and operations costs. For example, Cleveland RTA sold naming rights to local hospitals for the HealthLine BRT line. The 3.3-mile QLINE streetcar project, currently under construction in Detroit, is likely the most ambitious emerging system to take advantage of naming rights for both capital and O&M costs. Institutions along Woodward Avenue (e.g., Wayne State University, the Detroit Medical Center, and Henry Ford Health Systems) are contributing \$3 million each in return for a customized station design to enhance and promote their brand. In addition, Quicken Loans has pledged \$10 million for the naming rights of the streetcar line for a period of 10 years.

## Operating Cost Estimates

The O&M cost analysis reflects a combination of the initial service plan assumptions for the BRT and BRT-Lite corridors as well as potential changes to the existing regional transit services to complement the high capacity corridors. The following sections provide an overview of the methodology and assumptions used to evaluate the O&M cost impact in current year dollars and YOE dollars.

### Operating Plan – Existing CARTA Fixed Route System

As described in detail in the separately submitted *Proposed Service Plans*, Table 7 compares CARTA's existing annual hours and miles to the proposed service levels that would complement the BRT and BRT-Lite corridors. For the purposes of this financial analysis it was assumed that there will be three implementation phases which are listed below.

- Existing services: 2018 to 2024;
- Implementation Phase 1: Lowcountry Rapid Transit: 2025 to 2029;
- Implementation Phase 2: Corridor E and Corridor C: 2030 to 2034; and
- Implementation Phase 3: Corridor K, Corridor M and Corridor N: 2035 to 2040.

**Table 7: Proposed CARTA Service Changes: Existing Fixed Route Network**

Implementation Phase	Period	Annual Hours	Annual Miles	Change Compared to Prior Phase	
				Annual Hours	Annual Miles
Existing Service	2018-2024	206,851	2,661,880		
Phase 1: Lowcountry	2025-2029	268,667	3,457,370	61,816	795,490
Phase 2: Corridors C & E	2030-2034	298,819	3,845,385	30,152	388,015
Phase 3: Corridors K, M, & N	2035-2040	318,969	4,104,688	20,150	259,303

- **Implementation Phase 1:** The proposed service levels reflect the planning that was completed as part of the February 2016 *i-26 Fixed Guideway Alternatives Analysis (i-26ALT)*. Compared to existing fixed route service, the *i-26ALT* proposed increased service levels on most existing fixed routes as well as proposed introducing five feeder routes for the Lowcountry Rapid Transit Corridor. The proposed network would reflect a 30 percent increase in service levels with annual hours increasing by approximately 62,000 hours and annual miles by approximately 800,000 miles.
- **Implementation Phase 2:** Building off the Implementation Phase 1 network, the proposed changes for the fixed route network in 2030, would result in an increase in service levels of approximately 11 percent with annual miles increasing by 390,000 miles, and annual hours increasing by approximately 30,000 hours. The change reflects a combination of increased service levels of existing routes and converting



line haul routes to services that will act as feeder routes to the BRT and BRT-Lite corridors.

- **Implementation Phase 3:** Similarly, implementing the proposed 2035 network would result in an increase of approximately 20,000 annual hours and of 259,000 hours. It should be noted that change in hours includes about 34,000 hours for the proposed introduction of demand response zones.

### Operating Plan – BRT Corridors

Annual hours and miles of services were estimated for the BRT and BRT-Lite corridors, including the Lowcountry Rapid Transit line, based on the following assumptions:

- Corridor route length
- Average BRT corridor travel speed: 25 mph
- Average BRT-Lite corridor travel speed: 17 mph
- Service span and frequencies
  - Weekday
    - 4AM - 6AM: 30 minute early morning
    - 6AM - 9AM: 10 minute peak
    - 9AM - 4PM: 20 minute off peak
    - 4PM - 7PM: 10 minute peak
    - 7PM - 9PM: 20 minute off peak
    - 9PM - 1AM: 30 minute late night
  - Saturday
    - 4AM - 6AM: 30 minute early morning

- 6AM - 9PM: 20 minute during the day
- 9PM - 1AM: 30 minute late night
- Sundays
  - 6AM - 11PM: 30 minute all day

Table 8 summarizes the estimated annual hours and miles for the BRT and BRT-Lite corridors based on these assumptions and indicates the current planning assumptions for when service would start in each corridor. Additionally, the table indicates the service level increase associated with the implementation of the corridors compared to existing fixed route services shown in Table 7 (206,851 annual hours and 2,661,880 annual miles). In 2035, when all corridors are assumed to be operational, compared to the 2018 fixed route network, BRT and BRT-Lite services will result in a 142 percent increase in annual hours and a 195 percent increase in annual miles.

**Table 8: Estimated Annual Service Levels:  
BRT and BRT-Lite Corridors**

Corridor	Start Year	Annual Hours	Annual Miles	% increase compared to 2018	
				Annual Hours	Annual Miles
Lowcountry	2025	56,625	1,097,376	27%	41%
Corridor C	2030	71,568	1,535,372	35%	58%
Corridor E	2030	85,011	1,216,179	41%	46%
Corridor K	2035	23,856	455,172	12%	17%
Corridor M	2035	23,856	286,749	12%	11%
Corridor N	2035	32,769	602,603	16%	23%
<b>Total</b>		<b>293,685</b>	<b>5,193,451</b>	<b>142%</b>	<b>195%</b>

Finally, Table 9 summarizes the incremental increase in annual hours and miles reflecting the BRT and BRT-Lite service plans and associated proposed changes to the existing fixed route network to complement the corridors as provided previously in Table 7 and Table 8. Based on the current planning assumptions, annual hours would increase from the current 206,851 hours to an estimated 612,654 hours in 2035 or approximately a 196 percent increase in hours. Similarly, annual miles would increase from 2.7 million to 9.3 million in 2035, which is a 249 percent increase.

**Table 9: Combined Impact on CARTA's Annual Service Levels**

Implementation Phase	Annual Hours	Annual Miles	% increase compared to 2018	
			Annual Hours	Annual Miles
<b>Existing Services</b>				
Existing Fixed Route	206,851	2,661,880		
<b>Implementation Phase 1</b>				
Existing Fixed Route	268,667	3,457,370		
Lowcountry	56,625	1,097,376		
<b>Phase 1 Total</b>	<b>325,292</b>	<b>4,554,746</b>	<b>57%</b>	<b>71%</b>
<b>Implementation Phase 2</b>				
Proposed Fixed Route	298,819	3,845,385		
BRT & BRT Lite Corridors	213,204	3,848,927		
<b>Phase 2 Total</b>	<b>512,023</b>	<b>7,694,312</b>	<b>148%</b>	<b>189%</b>
<b>Implementation Phase 3</b>				
Proposed Fixed Route	318,969	4,104,688		
BRT & BRT Lite Corridors	293,685	5,193,451		
<b>Phase 3 Total</b>	<b>612,654</b>	<b>9,298,139</b>	<b>196%</b>	<b>249%</b>

## Fixed Route and BRT Fleet Impact

Table 10 summarizes the estimated fixed route and BRT vehicle fleet size estimates based on proposed expansions to the existing fixed route network and implementation of the BRT and BRT-Lite corridors. Total vehicle requirements (peak vehicle requirements plus a 20 percent spare ratio) for the existing and proposed fixed route network is estimated to grow from 74 vehicles to 102 vehicles by 2035. Implementation of all BRT and BRT-Lite corridors will require a total of 96 vehicles.

**Table 10: Estimated Total<sup>1</sup> Fleet Fixed Route and BRT Fleet Requirements**

	Fixed Route Vehicles	BRT and BRT-Lite Vehicles
<b>Existing Services</b>		
Existing Fixed Route	74	
<b>Implementation Phase 1</b>		
Proposed Fixed Route	84	
Lowcountry		18
<b>2025 Total</b>		<b>102</b>
<b>Implementation Phase 2</b>		
Proposed Fixed Route	96	
BRT & BRT Lite Corridors		66
<b>2030 Total</b>		<b>162</b>
<b>Implementation Phase 3</b>		
Proposed Fixed Route	102	
BRT & BRT Lite Corridors		96
<b>2035 Total</b>		<b>198</b>

Note: Includes 20 percent spare ratio assumption

Table 11 summarizes the costs associated with the fleet expansion and associated vehicle replacement needs based on information presented in Table 10. More specifically, the existing fixed route fleet size will increase by:

- 10 vehicles in Implementation Phase 1 (2025);
- 12 vehicles in Implementation Phase 2 (2030); and
- 6 vehicles in Implementation Phase 3 (2035).

Additionally, assuming a 12 year life-cycle for each bus, the vehicles purchased as part of Implementation Phase 1 (10 fixed route buses and 18 BRT buses (28 total)) would be scheduled for replacement.

For this financial analysis, it was assumed all future vehicle purchases would be electric buses. Currently, these buses cost approximately \$0.8 million each. The YOE dollar cost estimates in Table 11 reflect the number of vehicles purchased as described above and the impact of the annual and compound annual growth rates included in Table 2 on the cost per vehicle. Over the 2025 to 2040 period, the total cost for fleet expansion and replacement vehicles is \$458 million.

**Table 11: Estimated Fleet Expansion and Replacement Costs (YOE \$, in millions)**

	<b>Cost per Vehicle</b>	<b>Fleet Expansion Vehicles</b>	<b>Expansion and BRT Replacement Vehicles</b>	<b>Cost</b>
2018	\$0.8			
2019	\$0.8			
2020	\$1.8			
2021	\$1.9			
2022	\$2.8			
2023	\$2.9			
2024	\$3.8			
2025	\$3.9	10		\$39
2026	\$4.8			
2027	\$4.9			
2028	\$5.8			
2029	\$6.0			
2030	\$6.8	12		\$82
2031	\$7.0			
2032	\$7.8			
2033	\$8.0			
2034	\$8.8			
2035	\$9.1	6		\$54
2036	\$9.8			
2037	\$10.1		28	\$283
2038	\$10.8			
2039	\$11.1			
2040	\$11.8			
Total				\$458

Note: Conceptual costs for planning purposes only

## O&M Cost Methodology

Annual O&M cost estimates for CARTA's existing services, Lowcountry Rapid Transit and the BRT and BRT-Lite corridors reflect a fully-allocated O&M cost model based on CARTA's National Transit Database (NTD) report for fixed route services. The fully-allocated O&M models provide the ability to forecast labor and non-labor expenses separately to make sure equations are mutually exclusive and cover all operating costs. Additionally, the model forecasts operating expenses as they change with projected changes in service levels by assuming that each operating expense is 'driven' by a supply variable such as revenue-hours, revenue-miles, or yards.

At this stage of planning, the BRT and BRT-Lite O&M cost estimates described below do not include expenses that will be new to CARTA's transit operations. More specifically, the cost estimates do not include expenses that are unique to a BRT service which could include operations and maintenance of: passenger stations; the dedicated guideway; ticket vending machines at stations; and intelligent transportation systems / transit signal priority systems, as well as the need for potential additional security staffing and equipment. Additionally, O&M costs are currently based on an assumption that the BRT and BRT-Lite corridors operate independently from one another to achieve peak frequency needs. As part of future planning phases, a full BRT system operations analysis will be conducted to optimize services that share a common alignment for a portion of their respective route. This optimization analysis will incorporate ridership estimates, passenger seating capacity, and variations of

service frequencies among the BRT and BRT-Lite corridors.

Finally, the BRT and BRT-Lite operation plans will also impact TriCounty Link (TCL) services. As TCL is a small transit service provider, the agency receives a waiver from submitting a full operating report to the NTD. As a result, rather than a fully allocated O&M cost model, the impact on TCL services are based on the current operating cost per hour.

## CARTA O&M Cost Model

The O&M cost model for fixed route service is provided in Appendix A. As described below, sections of the O&M cost model's data and calculations progress from the base year line item expenses and amounts on the left side of the table, through the assignment of driving variables, to the inflation of unit costs into current year dollars (2018 \$) on the right side of the table.

- **Line Items and Base Year Costs:** The first section of the model contains O&M line item expenses based on CARTA's 2017 actual expenses reported to the NTD for four cost categories: Transportation, Maintenance of Way, Maintenance of Equipment, and General Administration. Within these categories, line item expenses are classified as salaries and wages, fringe benefits, payroll taxes, equipment expenses, repairs and maintenance materials, operating costs, utilities, professional services, other services, office supplies, administration, rents and leases, and claims and insurance.





## Regional Transit Framework Plan

- **Supply Variables and Base Year Unit Costs:** O&M costs are related to (or 'driven' by) different supply variables. Supply variables are considered causal in that as they increase or decrease, so do the related expenses. Within the second section of the O&M model, (supply variable unit cost rates), the column "Assigned Variable" designates the variable used as a driver for each line item expense. Unit rates are calculated by dividing the actual 2017 annual expense for the line item by the annual statistic of the relevant supply variable. For example, revenue hours of service is the supply variable associated with operators' salaries and wages. If an agency spent \$50 million annually on operators' salaries and wages to provide 2 million revenue hours of service, then the unit cost rate for operator salaries and wages would be \$25.00 per revenue hour. In this case, the model would adjust this line item expense by \$25.00 for each additional revenue hour of service. The key supply variables used in the model and the 2017 statistics are summarized below.
  - **Revenue Hours** are the hours that transit vehicles travel while in revenue service over the entire year. Revenue hours include layover and schedule recovery, but exclude time for deadhead, operator training and maintenance testing. In 2016, CARTA's fixed route operated for 191,802 revenue hours.
  - **Revenue Miles** account for the miles that transit vehicles travel while in revenue

service over the entire year. Revenue miles include layover and schedule recovery, but exclude miles for deadhead, operator training and maintenance testing. In 2016, CARTA's fixed route services operated for 2,529,215 revenue miles.

- **Yards** reflect the allocation of CARTA's single existing facility among the three services operated by the agency (fixed route, commuter bus, and demand response). In 2016, the split was: fixed route 0.72 yards, commuter bus 0.08 yards and American with Disabilities Act (ADA) paratransit service 0.20 yards.
- **Inflation Factor:** The final section inflates the base year unit costs to calibrate the model to CARTA's 2018 budget estimate. Using an inflation factor of 1.04, the unit costs sum to an annual O&M cost of \$14.6 million for fixed route service.

Finally, as stated previously, O&M cost estimates described below for the BRT and BRT-Lite corridors reflect use of the CARTA O&M cost model for existing fixed route services. As each corridor eventually moves through the project development and implementation process, a detailed O&M cost estimate will be developed including the development of a staffing plan and other expenses that are unique to operating BRT and BRT-Lite services compared to existing fixed route services.

## O&M Cost Estimates

### BRT and BRT-Lite Corridors

Table 12 provides the estimated annual O&M costs for the BRT and BRT-Lite corridors based on the proposed service levels shown in Table 8 and the CARTA fully-allocated O&M cost model included in Appendix A. The estimated annual costs in Table 10 are provided in current year (2018 \$) and YOE dollars, with the YOE dollars estimated based on the proposed first year of service and the annual and compound annual cost escalation rate shown in Table 2.

**Table 12: BRT and BRT-Lite Estimated Annual O&M Costs (2018\$ and YOE\$, in millions)**

Corridor	Start Year	Annual O&M Cost	Annual O&M Cost
		2018\$	YOE \$
Lowcountry	2025	\$4.5	\$5.5
Corridor C	2030	\$5.7	\$8.2
Corridor E	2030	\$6.5	\$9.3
Corridor K	2035	\$1.9	\$3.1
Corridor M	2035	\$1.8	\$3.0
Corridor N	2035	\$2.6	\$4.3

Note: Conceptual costs for planning purposes only

### Combined BRT and BRT-Lite and Proposed Changes to Existing Services

Table 13 and Table 14 provides total O&M cost estimates over the 2018 to 2040 period in current year dollars (2018\$) and YOE dollars. The total costs reflect the service levels for BRT and BRT-Lite corridors combined with existing fixed route services and the proposed changes to existing service associated with

Implementation Phases 1, 2 and 3 summarized in Table 9, and the CARTA fully allocated cost model in Appendix A. As shown Tables 12 and 13, estimated O&M costs would total \$731 million (2018 \$) and \$1,107 million (YOE\$).

**Table 13: Total O&M Costs: 2018 to 2040 (2018\$, in millions)**

Implementation Phase	Total O&M Cost Per Implementation Period				Total
	2018 to 2024	2025 to 2029	2030 to 2034	2035 to 2040	
Existing Services	\$110				
Implementation Phase 1		\$142			
Implementation Phase 2			\$197		
Implementation Phase 3				\$283	
<b>Total Per Period</b>	<b>\$110</b>	<b>\$142</b>	<b>\$197</b>	<b>\$283</b>	<b>\$731</b>

Note: Conceptual costs for planning purposes only

**Table 14: Total O&M Costs: 2018 to 2040  
(YOE\$, in millions)**

Implementation Phase	Total O&M Cost Per Implementation Period				Total
	2018 to 2024	2025 to 2029	2030 to 2034	2035 to 2040	
Existing Services	\$120				
Implementation Phase 1		\$186			
Implementation Phase 2			\$298		
Implementation Phase 3				\$504	
<b>Total Per Period</b>	<b>\$120</b>	<b>\$186</b>	<b>\$298</b>	<b>\$504</b>	<b>\$1,107</b>

Note: Conceptual costs for planning purposes only

### TCL Services O&M Cost Impact

As shown in Table 15, two existing TCL routes are proposed to be modified with the implementation of the BRT and BRT-Lite corridors.

- Route CS#1: With the proposed implementation of Corridor C in 2025, the current planning assumption is to eliminate this route. Based on current service levels, this would result in the elimination of about 3,000 annual revenue hours. Based on TCL's current cost per hour, \$75 per hour, this would be an annual savings of about \$223,000 (2018\$) which is equivalent to \$274,800 in 2025 (YOE \$). Over the 2025 to 2040 period, elimination of this route would result in saving approximately \$5.5 million (YOE\$).
- Route C203: With the proposed implementation of Corridor N in 2030, the current planning

assumption is to slightly reduce service on this route. Based on current service levels, this would result in the savings of about 1,000 annual revenue hours. Based on TCL's current cost per hour (\$75 per hour), this would result in an annual savings of about \$75,000 (2018\$) which is equivalent to \$103,000 in 2030 (YOE \$). Over the 2030 to 2040 period, reducing service on this route would result in saving approximately \$1.3 million (YOE \$).

**Table 15: Proposed TCL Service Changes**

Existing Services		Proposed Service Changes		Impact
Route	Annual Revenue Hours	Prerequisite Corridor	Annual Revenue Hours	
B101	1,813		1,813	0
B102	1,833		1,833	0
B104	396		396	0
B105	2,050		2,050	0
C201	767		767	0
C202	704		704	0
C203	3,866	N	2,899	-966
C204	2,668		2,668	0
C205	2,805		2,805	0
D305	3,521		3,521	0
CS#1	2,979	C	0	-2,979
CS#2	3,479		3,479	0
CS#3	1,396		1,396	0
CS#4	2,117		2,117	0
CS#5	1,300		1,300	0
CS#6	4,408		4,408	0
Link2Lunch	1,167		1,167	0
<b>Total</b>	<b>37,267</b>		<b>33,322</b>	<b>-3,946</b>

Note: Conceptual costs for planning purposes only

## Ridership and Fare Revenue

Table 16 summarizes the No Build and Build ridership forecast for CARTA's existing services and the planned BRT and BRT-Lite corridors (see STOPS Ridership Modeling Results Technical Memorandum for additional details on the forecast). As shown in the table, ridership is projected to increase by approximately 1 percent per year through 2040. Additionally, the implementation of the BRT and BRT-Lite corridors is forecasted to result in ridership increasing by approximately 53 percent compared to the existing services (No Build).

**Table 16: CARTA System Ridership Forecast**

	2015		2040		No Build Annual Growth Rate	Build Annual Growth Rate
	No Build	Build	No Build	Build		
<b>Existing Routes</b>	<b>23,068</b>	<b>14,764</b>	<b>26,408</b>	<b>17,061</b>	<b>1%</b>	<b>1%</b>
Local Bus	12,586	7,193	14,282	7,208	1%	0%
DASH Routes	1,063	759	1,020	702	0%	0%
Express Routes	1,286	294	1,507	334	1%	1%
Airport Routes	983	577	1,150	684	1%	1%
Lowcountry	7,150	5,941	8,449	8,133	1%	1%
<b>Future Corridors</b>	<b>0</b>	<b>20,468</b>	<b>0</b>	<b>23,550</b>	<b>1%</b>	<b>1%</b>
Corridor C	0	2,948	0	4,328		2%
Corridor E	0	10,755	0	11,385		0%
Corridor K	0	2,571	0	3,008		1%
Corridor M	0	1,230	0	1,375		0%
Corridor N	0	2,964	0	3,454		1%
<b>Total System</b>	<b>23,068</b>	<b>35,232</b>	<b>26,408</b>	<b>40,611</b>	<b>1%</b>	<b>1%</b>

For the purposes of the financial analysis, it was assumed that CARTA would take actions throughout the 2018 to 2040 period to maintain its current 30 percent farebox recovery ratio. Table 17 summarizes the potential impact of this approach for each implementation phase period described previously.

- **Passenger Revenue:** In order to achieve a 30 percent fare box recovery ratio, passenger revenues would need to generate \$332 million over the 2018 to 2040 period, growing from \$36 million over the initial 2018 to 2024 period to \$151million over the 2035 to 2040 period.
- **Average Fares:** In order to achieve the 30 percent fare recovery threshold, average fares would need to increase from the current \$0.96 per trip to \$2.9 per trip in 2040. As shown in the table within each incremental implementation period, the average fare would need to increase about 2.5 percent per year. However, in the transition year associated with each incremental expansion, the annual increase varies depending on the planned service levels and ridership forecasts.
- **Operating Subsidy:** After accounting for potential passenger fare revenue, there is an on-going need for an operating subsidy that totals \$775 million over the 2018 to 2040 period. The operating subsidy need increases from an estimated \$84 million during the 2018 to 2024 period to an estimated \$350 million over the 2035 to 2040 period.



# Regional Transit Framework Plan

**Table 17: Comparison: CARTA O&M Costs and Fare Revenue Assumptions**

	2018 to 2024	2025 to 2029	2030 to 2034	2035 to 2040	Total
<b>O&amp;M Costs</b>	<b>\$120</b>	<b>\$186</b>	<b>\$298</b>	<b>\$504</b>	<b>\$1,107</b>
<i>Existing Services</i>	\$120				
<i>Implementation Phase 1</i>		\$186			
<i>Implementation Phase 2</i>			\$298		
<i>Implementation Phase 3</i>				\$504	
<b>Passenger Revenue</b>					
<i>30% Fare Recovery</i>	\$36	\$56	\$89	\$151	\$332
<b>Average Fare Increase Per Period</b>					
<i>To Maintain 30% Fare Recovery</i>	\$0.96 to \$1.11	\$1.41 to \$1.56	\$1.79 to \$1.96	\$1.94 to \$2.19	
<b>Operating Subsidy</b>	<b>\$84</b>	<b>\$130</b>	<b>\$209</b>	<b>\$353</b>	<b>\$775</b>
<i>Average Annual Per Period</i>	\$12	\$26	\$42	\$59	\$34

Note: Conceptual costs and revenues for planning purposes only

## Potential Non-operating Revenues

Based on CARTA's existing budget, after accounting for passenger revenue, the next two largest existing sources are dedicated sales tax revenue and used of FTA Section 5307 formula funds to pay for eligible capitalized maintenance expenses. Additional analysis of the dedicated sales tax revenue is provided in the Conclusion. CARTA currently receives approximately \$6.0 million per year in FTA formula funds. Given the history of this FTA funding program, it is reasonable to assume these formula funds will continue in the future. However, given the political uncertainty tied to future transportation funding bills, a challenge is estimating future annual formula amounts. Based on conversations with FTA staff on other transit financial plans, a two percent annual increase in FTA formula funds is realistic and has been used as an assumption within this financial analysis. Under this assumption, CARTA's annual formula funds would increase from \$6.0 million per year to \$9.0 million in 2040. Over the 2018 to 2040 period, this would total approximately \$170 million. This would reduce the total O&M subsidy need in Table 14 from \$682 million to \$512 million.

Going forward, there may be opportunities to leverage additional funding for long term operations through a combination of sources. At this early stage of the project development process, O&M funding sources are typically less defined compared to capital revenue sources. However, it is critical to initiate discussions among the public and private partners that would benefit from the proposed services to identify which potential sources

have the most political support to carry forward for further evaluation.

To initiate discussions with potential partners, the following provides a list of potential O&M funding sources that have been used by other transit systems across the country which can be narrowed down as the BRT and BRT-Lite corridors continue through the project development process. Of the sources listed below, only the Vehicle Registration Fee is identified as an eligible dedicated revenue source for a transit agency. However, in partnership with local jurisdictions, agreements could be established to use funds from the other fees, taxes, and private participation sources listed below to support operations.

- **Hotel/Motel Tax:** Tax levied on the gross receipts of lodging within the area served by a BRT or BRT-Lite corridor. A portion of revenues could be contributed towards on-going O&M costs.
- **Vehicle Registration Fee:** Increase vehicle registration fee to provide a defined percentage of O&M funding. Based on South Carolina's existing Regional Transportation Authority Law, a vehicle registration fee may be levied by the governing bodies of the member cities and counties on the motor vehicles registered within the service area of the authority. If this mechanism is used, the amount of the vehicle registration fee must be set forth in the agreement. The authority shall request the members of the General Assembly representing its service area to approve increases in the registration fee. Unless these members of



## Regional Transit Framework Plan

the General Assembly by majority vote approve the increase, no increases may be imposed. The registration fee must be added to the personal property tax notice collected as a part of the personal property tax and the fee rebated to the authority. The Law indicates that property tax revenue must not be used to support operation of the authority unless the authority has been approved by referendum.

- **Parking Tax:** A parking fee is a tax or surcharge levied on paid parking. The fee could be applied within the specific BRT and BRT-Lite corridors or within city, county, or BCDCOG limits for the use of off-street commercial or employer provided parking spaces and/or for the use of public parking meters. If applied within the corridors, there would be some degree of relationship between traffic and parking within the corridor relative to parking requirements and parking fee. If applied city- or county-wide, the relationship between the parking fee and O&M costs within the corridor would be less direct. More likely, a city-wide parking fee would be used to fund a variety of improvements, and would not be used solely to fund costs related to the BRT and BRT-Lite corridors.
- **Rental Car Surcharge:** Taxes or surcharges imposed on rental cars that are leased, either through a countywide gross receipts tax on rental car companies (typically passed along to the customer) or a Customer Facility Charge (CFC) assessed per rental car contract at airports: A portion of the rental car surcharge could be potentially contributed towards a portion of the on-going O&M costs.
- **Contributions from Private Partners:** For major employers and/or other activity centers served directly by the BRT and BRT-Lite corridors, a revenue structure could be established where the employer or activity center purchases a set number of tickets per year or pays an agreed upon share of O&M costs relative to the benefits the transit service provides.
- **Improvement Districts:** As described previously, Improvement Districts could be a potential source of capital funding. Additionally, Improvement Districts could be used to fund a share of on-going maintenances costs.

## Conclusion

Table 18 and Table 19 provide a conceptual funding gap analysis based on the results of the prior sections and recent Charleston County Sales Tax forecasts (First and Second Sales Tax) and the proposed shares from the annual sales tax that will be allocated to CARTA's fixed route operating as well as the shares dedicated to BRT capital and BRT operating uses.

### *Operations Funding Gap Analysis:*

- **Costs:** Based on the assumptions related to the timing of the phased BRT and BRT-Lite corridors implementation, service plans and frequency and the O&M cost estimate methodology described previously, annual O&M costs are estimated to increase from approximately \$20 million in 2019 to approximately \$90 million in 2040. Over this period, the total O&M costs are estimated to be \$1,089 million (YOE \$).

Please note that this study did not evaluate CARTA's paratransit service. As a result, these on-going costs are not included in Table 18.

- **Revenues:** In addition to the previously described assumptions related to achieving a 30 percent farebox recovery and annual growth in FTA formula funds, Table 18 provides an estimate of sales tax revenue that is available for operating expenses. As shown in the table, CARTA's County Sales Tax and the sales tax allocation specifically for BRT and BRT-Lite O&M costs are included in the analysis.

As shown in the Table, between 2019 and 2030, O&M costs would be fully funded with the exception of 2025. Beyond 2030, there would be an annual funding gap increasing from \$12 million to \$27 million in 2040. In total, there would be an estimated \$215 million operating funding shortfall based on the assumptions in this analysis.

### *Capital Funding Gap Analysis:*

- **Costs:** Conceptual capital costs for the BRT and BRT-Lite corridors are estimated to total \$2.3 billion (YOE \$). The annual costs in Table 19 reflect:
  - BRT and BRT-Lite corridors documented in Table 3; and
  - An assumed cost of \$360 million (YOE\$) for the Lowcountry Rapid Transit Project with an implementation period of 2019 to 2024.
- **Revenues:** For the BRT and BRT-Lite corridors funding gap analysis, the potential funding sources include:
  - An assumption that the Lowcountry Rapid Transit and all other BRT and BRT-Lite corridors will successful obtain 50 percent total funding from the FTA CIG Program.
  - An assumption that sales tax revenue allocated to the BRT capital costs will provide the 50 percent non-CIG matching funds for the Lowcountry Rapid Transit Project.





## Regional Transit Framework Plan

Based on these assumptions, beginning with the start of Implementation Phase 2 in 2025, there are annual capital funding shortfalls ranging from \$21 million to \$202 million. In total, the BRT and BRT-Lite corridors' capital funding shortfall is estimated to be \$960 million.

**Table 18: Estimated Operations Funding Gap Analysis (YOE\$, in millions) <sup>1</sup>**

	Estimated Costs			Potential Sources					
	Existing / Proposed Fixed Route O&M Costs	BRT & BRT-Lite O&M Costs	Total O&M Costs	30% Farebox Recovery	FTA Formula Funds	County Sales Tax	Sales Tax: BRT Operations	Total Potential Funding	Estimated Operations Funding Gap
2019	\$20		\$20	\$6	\$6	\$8	\$0	\$20	\$0
2020	\$20		\$20	\$6	\$6	\$9	\$0	\$21	\$0
2021	\$21		\$21	\$6	\$6	\$9	\$0	\$21	\$1
2022	\$21		\$21	\$6	\$6	\$9	\$0	\$22	\$1
2023	\$22		\$22	\$6	\$7	\$10	\$0	\$23	\$1
2024	\$22		\$22	\$7	\$7	\$10	\$0	\$23	\$1
2025	\$25	\$6	\$31	\$9	\$7	\$10	\$2	\$28	-\$2
2026	\$26	\$6	\$31	\$9	\$7	\$11	\$4	\$31	\$0
2027	\$27	\$6	\$32	\$10	\$7	\$11	\$4	\$32	\$0
2028	\$27	\$6	\$33	\$10	\$7	\$11	\$4	\$33	\$0
2029	\$28	\$6	\$34	\$10	\$7	\$12	\$4	\$34	\$0
2030	\$32	\$24	\$56	\$17	\$7	\$15	\$5	\$44	-\$12
2031	\$33	\$25	\$58	\$17	\$8	\$16	\$5	\$45	-\$12
2032	\$34	\$25	\$60	\$18	\$8	\$16	\$5	\$47	-\$13
2033	\$35	\$26	\$61	\$18	\$8	\$17	\$5	\$48	-\$13
2034	\$36	\$27	\$63	\$19	\$8	\$17	\$5	\$49	-\$14
2035	\$40	\$38	\$78	\$23	\$8	\$18	\$5	\$55	-\$23
2036	\$41	\$39	\$80	\$24	\$8	\$18	\$5	\$56	-\$24
2037	\$42	\$40	\$83	\$25	\$9	\$19	\$6	\$58	-\$25
2038	\$44	\$41	\$85	\$26	\$9	\$20	\$6	\$60	-\$26
2039	\$45	\$43	\$88	\$26	\$9	\$20	\$6	\$61	-\$26
2040	\$46	\$44	\$90	\$27	\$9	\$21	\$6	\$63	-\$27
<b>Total</b>	<b>\$688</b>	<b>\$401</b>	<b>\$1,089</b>	<b>\$327</b>	<b>\$164</b>	<b>\$307</b>	<b>\$76</b>	<b>\$875</b>	<b>-\$215</b>

Note: Conceptual costs and revenues for planning purposes only. <sup>1</sup> Does not include on-going costs related to CARTA Paratransit Services.

**Table 19: Estimated BRT Capital Funding Gap Analysis (YOE \$, in millions)**

	BRT & BRT Lite Capital Costs	50% FTA CIG Funds: BRT & BRT-Lite	Sales Tax: BRT Capital <sup>1</sup>	Total Potential BRT & BRT-Lite Revenues	Estimated BRT & BRT-Lite Funding Gap
2019	\$6	\$3	\$3	\$6	\$0
2020	\$6	\$3	\$3	\$6	\$0
2021	\$6	\$3	\$3	\$6	\$0
2022	\$18	\$9	\$9	\$18	\$0
2023	\$162	\$81	\$81	\$162	\$0
2024	\$162	\$81	\$81	\$162	\$0
2025	\$43	\$21	\$0	\$21	-\$21
2026	\$89	\$44	\$0	\$44	-\$44
2027	\$274	\$137	\$0	\$137	-\$137
2028	\$376	\$188	\$0	\$188	-\$188
2029	\$145	\$73	\$0	\$73	-\$73
2030	\$46	\$23	\$0	\$23	-\$23
2031	\$95	\$48	\$0	\$48	-\$48
2032	\$294	\$147	\$0	\$147	-\$147
2033	\$404	\$202	\$0	\$202	-\$202
2034	\$156	\$78	\$0	\$78	-\$78
2035	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0
2038	\$0	\$0	\$0	\$0	\$0
2039	\$0	\$0	\$0	\$0	\$0
2040	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$2,281</b>	<b>\$1,140</b>	<b>\$180</b>	<b>\$1,320</b>	<b>-\$960</b>

Notes: Conceptual costs and revenues for planning purposes only. This study did not include the development of a fleet replacement plan for CARTA's existing fleet. As such, Table 19 does not include on-going costs related to the fleet replacement and expansion. However, as documented in Table 11, the fixed route vehicle expansion associated with three implementation phases would be \$458 million (YOE \$) in addition to CARTA's current replacement program.

<sup>1</sup> Annual Sales Tax: BRT Capital Allocation levels in Table 19 vary from recent County Sales Tax Forecasts. This financial analysis assumes Lowcountry BRT service will start in 2025. To reflect this schedule, the financial analysis assumes annual sales tax revenues allocated to BRT Capital over the 2023 to 2037 in current forecasts would be available in 2023 and 2024 to complete construction by the end of 2024. The actual cash flow needs for the Lowcountry Rapid Transit, including pay as you go funding and the potential use of bond proceeds, will be evaluated in the next phase of planning which is scheduled to start in the fall of 2018.



# Regional Transit Framework Plan



## Regional Transit Framework Plan

### Appendix A: CARTA Fixed Route O&M Cost Model



# Regional Transit Framework Plan

				Inflation Factor 1.04		
Actual Expenses		INPUT NEEDED		Inflation Factor	Results in 2018\$	
	2016 Expenses	Assigned Variable	Variable Unit Costs (2016\$)		Unit Cost	Estimated Annual Cost
<b>Vehicle Operations</b>						
Operators' Salaries and Wages	\$0	Revenue Hours	\$0.00	1.04	\$0.00	\$0
Other Salaries and Wages	\$0	Revenue Hours	\$0.00	1.04	\$0.00	\$0
Fringe Benefits	\$0	Revenue Hours	\$0.00	1.04	\$0.00	\$0
Service Costs	\$0	Revenue Hours	\$0.00	1.04	\$0.00	\$0
Fuel and Lubricants	\$615,799	Revenue Hours	\$3.21	1.04	\$3.34	\$641,425
Tires and Tubes	\$0	Revenue Hours	\$0.00	1.04	\$0.00	\$0
Other Materials and Supplies	\$0	Peak Vehicles	\$0.00	1.04	\$0.00	\$0
Utilities	\$0	Revenue Miles	\$0.00	1.04	\$0.00	\$0
Casualty and Liability Costs	\$0	Yards	\$0.00	1.04	\$0.00	\$0
Taxes	\$0	Revenue Hours	\$0.00	1.04	\$0.00	\$0
PT Funds in Report	\$9,276,294	Revenue Hours	\$48.36	1.04	\$50.38	\$9,662,320
Miscellaneous Expenses	\$0	Yards	\$0.00	1.04	\$0.00	\$0
<b>Vehicle Maintenance</b>						
Operators' Salaries and Wages	\$0	Revenue Miles	\$0.00	1.04	\$0.00	\$0
Other Salaries and Wages	\$0	Revenue Miles	\$0.00	1.04	\$0.00	\$0
Fringe Benefits	\$0	Revenue Miles	\$0.00	1.04	\$0.00	\$0
Service Costs	\$0	Revenue Miles	\$0.00	1.04	\$0.00	\$0
Fuel and Lubricants	\$0	Revenue Miles	\$0.00	1.04	\$0.00	\$0
Tires and Tubes	\$0	Revenue Miles	\$0.00	1.04	\$0.00	\$0
Other Materials and Supplies	\$338,830	Revenue Miles	\$0.13	1.04	\$0.14	\$352,930
Utilities	\$0	Revenue Miles	\$0.00	1.04	\$0.00	\$0
Casualty and Liability Costs	\$255,085	Revenue Miles	\$0.10	1.04	\$0.11	\$265,700
Taxes	\$0	Revenue Miles	\$0.00	1.04	\$0.00	\$0
PT Funds in Report	\$1,739,305	Revenue Hours	\$9.07	1.04	\$9.45	\$1,811,685
Miscellaneous Expenses	\$0	Yards	\$0.00	1.04	\$0.00	\$0
<b>Non-Vehicle Maintenance</b>						
Operators' Salaries and Wages	\$0	Revenue Miles	\$0.00	1.04	\$0.00	\$0
Other Salaries and Wages	\$81,400	Revenue Miles	\$0.03	1.04	\$0.03	\$84,787
Fringe Benefits	\$51,338	Revenue Miles	\$0.02	1.04	\$0.02	\$53,474
Service Costs	\$576,873	Revenue Miles	\$0.23	1.04	\$0.24	\$600,879
Fuel and Lubricants	\$0	Revenue Miles	\$0.00	1.04	\$0.00	\$0
Tires and Tubes	\$0	Revenue Miles	\$0.00	1.04	\$0.00	\$0
Other Materials and Supplies	\$69,323	Yards	\$96,281.94	1.04	\$100,288.65	\$72,208
Utilities	\$0	Yards	\$0.00	1.04	\$0.00	\$0
Casualty and Liability Costs	\$0	Yards	\$0.00	1.04	\$0.00	\$0
Taxes	\$0	Yards	\$0.00	1.04	\$0.00	\$0
PT Funds in Report	\$579,768	Revenue Hours	\$3.02	1.04	\$3.15	\$603,895
Miscellaneous Expenses	\$3,694	Revenue Miles	\$0.00	1.04	\$0.00	\$3,848
<b>General Administration</b>						
Operators' Salaries and Wages	\$0	Revenue Hours	\$0.00	1.04	\$0.00	\$0
Other Salaries and Wages	\$182,188	Revenue Hours	\$0.95	1.04	\$0.99	\$189,770
Fringe Benefits	\$80,457	Revenue Hours	\$0.42	1.04	\$0.44	\$83,805
Service Costs	\$118,670	Revenue Hours	\$0.62	1.04	\$0.64	\$123,608
Fuel and Lubricants	\$0	Revenue Hours	\$0.00	1.04	\$0.00	\$0
Tires and Tubes	\$0	Revenue Hours	\$0.00	1.04	\$0.00	\$0
Other Materials and Supplies	\$8,622	Revenue Hours	\$0.04	1.04	\$0.05	\$8,981
Utilities	\$26,606	Revenue Hours	\$0.14	1.04	\$0.14	\$27,713
Casualty and Liability Costs	\$6,777	Revenue Hours	\$0.04	1.04	\$0.04	\$7,059
Taxes	\$0	Revenue Hours	\$0.00	1.04	\$0.00	\$0
PT Funds in Report	\$0	Revenue Hours	\$0.00	1.04	\$0.00	\$0
Miscellaneous Expenses	\$2,225	Revenue Hours	\$0.01	1.04	\$0.01	\$2,318
<b>Total</b>	<b>\$14,013,254</b>					<b>\$14,596,405</b>