Transit Asset Management Plan

prepared for

Pioneer Valley Transit Authority

prepared by

Cambridge Systematics, Inc.

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prepared by

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September 2018

Revision History

Initial PVTA Board Adoption Date:

Original Effective Date:

Revision History:

Last Modified By (Name):	Last Modified (Date):

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Executive Summary

The Federal Transit Administration (FTA) defines transit asset management as a strategic and systematic process through which an organization procures, operates, maintains, rehabilitates, and replaces transit assets to manage their performance, risks, and costs over their lifecycle to provide cost-effective, reliable, and safe service to current and future customers.

As part of the Moving Ahead for Progress in the 21st Century (MAP-21) Act and the subsequent Fixing America's Surface Transportation (FAST) ACT, the FTA enacted regulations for transit asset management that require transit service providers to establish asset management performance measures and targets and to develop a TAM Plan. The final TAM rule was published on July 26, 2016 and went into effect on October 1, 2016.

The Pioneer Valley Transit Authority (PVTA) manages a range of assets that include a fleet of heavy duty transit buses, paratransit vehicles, support vehicles, and nine facilities, plus other capital assets required to support operations across a service territory encompassing 24 communities. PVTA recognizes that an effective approach to asset management incorporates the people, processes, technology, data and information and continual improvement needed to support better management of assets over their entire lifecycle. PVTA has developed the following TAM Plan as a roadmap to systematically identify and address assets and asset management practices in need of improvement; establish a benchmark for where their inventory and policies stand; identify gaps in their practice; establish new, measurable key performance indicators and use a data-driven approach to achieve its goals.

PVTA has developed this TAM plan, not as an end, but instead as the beginning of an on-going effort to develop and integrate asset management practices throughout the entire organization. Over the coming years PVTA plans to continue to build upon this foundation and will work to implement successful and effective policies, practices and processes that reinforce and complement the goals and objectives outlined in the TAM plan. PVTA therefore expects that this TAM plan will be a living document that is updated annually.

1.0 Introduction

1.1 Purpose

The purpose of this Transit Asset Management (TAM) plan is to help the Pioneer Valley Transit Authority (PVTA) manage their physical assets, achieve a state of good repair and ensure consistency between agency mission, goals and plans. The plan describes the physical assets that PVTA owns and maintains, their condition, the strategy for maintaining those assets and PVTA's plan for future asset rehabilitation and/or replacement. The Plan aims to improve asset management awareness and ensure employees and partners have the knowledge and skills necessary to successfully carry out their roles.

1.2 Overview of the Pioneer Valley Transit Authority

The Pioneer Valley Transit Authority (PVTA) was created by the Massachusetts General Laws chapter 161B in 1974 as a funding source and to provide oversight and coordination of public transportation within the Pioneer Valley region. PVTA is the largest regional transit authority in Massachusetts and serves 24 member communities in Western Massachusetts with a population of 580,230 (ACS 2015 five-year estimate). PVTA provides fixed route bus and ADA demand response public transportation to a geographic area measuring 627 square miles that contains the Cities of Springfield, Chicopee, and Holyoke; the Five Colleges area of Northampton, Hadley, South Hadley, and Amherst, including more than 30,000 students and employees at the University of Massachusetts Amherst; and outlying suburban and rural communities (See Figure 1).

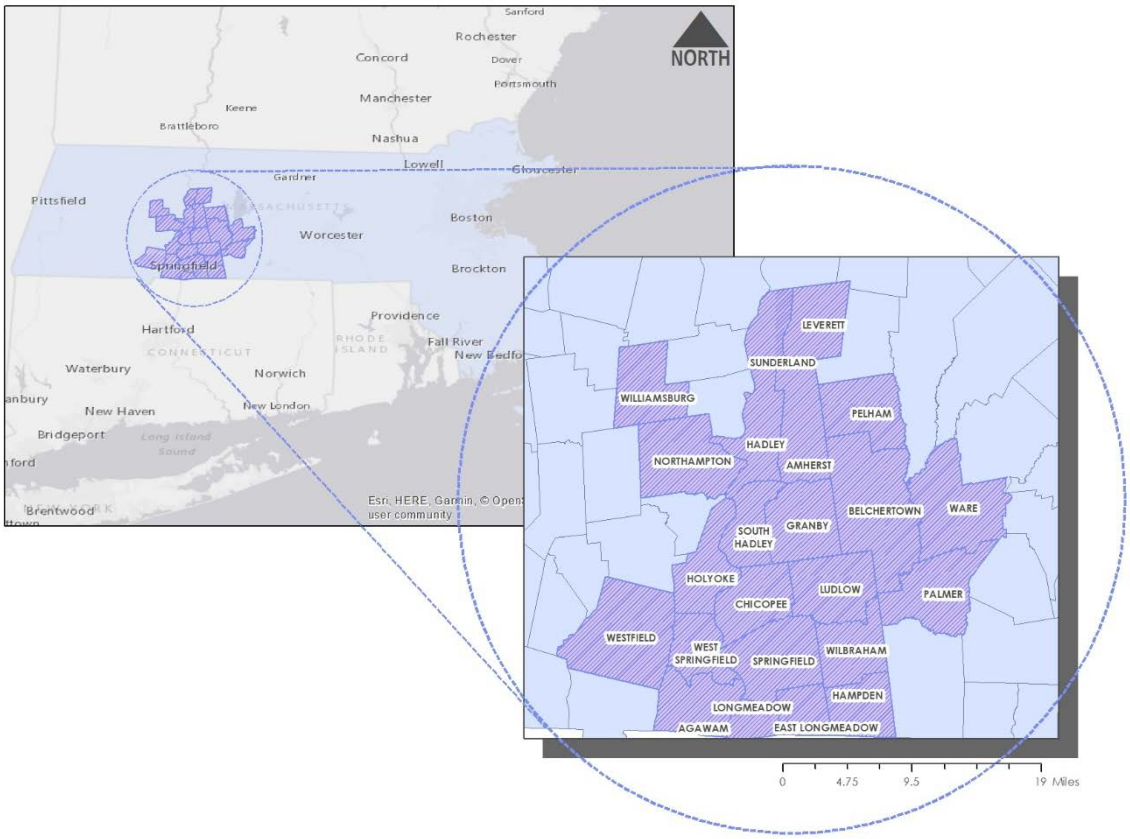
PVTA provides fixed-route bus and ADA demand-responsive van service with a fleet of 341 total vehicles. There are 43 scheduled fixed routes, and ADA paratransit van service is provided during the hours and in the entirety of the community that any fixed route operates. PVTA also provides an on-demand Senior Service ("dial-a-ride") service Monday-Friday from 8:00AM to 4:30PM that is open to any resident of a PVTA community age 60 and older. For the most recently concluded fiscal year FY2018 (July 1, 2017 to June 30, 2018), total PVTA system ridership was 11.2 million passenger trips.

Funding for the PVTA comes from local, state, and Federal sources. Under Massachusetts law, PVTA may not directly operate transit services. Therefore, PVTA competitively procures private companies to operate its buses and vans. The current operators are First Transit, National Express, Hulmes Transportation Services, and UMass Transit Services.

PVTA's Service Area consists of the following communities:

1. Agawam
2. Amherst
3. Belchertown
4. Chicopee
5. East Longmeadow
6. Easthampton
7. Granby
8. Hadley
9. Hampden
10. Holyoke
11. Leverett
12. Longmeadow
13. Ludlow
14. Northampton
15. Palmer
16. Pelham
17. South Hadley
18. Springfield
19. Sunderland
20. Ware
21. West Springfield
22. Westfield
23. Wilbraham
24. Williamsburg

Figure 1.1 PVTA Service Area



1.3 About the TAM Plan

The Federal Transit Administration (FTA) defines transit asset management as a strategic and systematic process through which an organization procures, operates, maintains, rehabilitates, and replaces transit assets to manage their performance, risks, and costs over their lifecycle to provide cost-effective, reliable, and safe service to current and future customers.

As part of the Moving Ahead for Progress in the 21st Century (MAP-21) Act and the subsequent Fixing America's Surface Transportation (FAST) ACT, the FTA enacted regulations for transit asset management that require transit service providers to establish asset management performance measures and targets and to develop a TAM Plan. The final TAM rule was published on July 26, 2016 and went into effect on October 1, 2016.

The TAM Plan will provide PVTA with a roadmap to systematically identify and address assets and asset management practices in need of improvement; establish a benchmark for where their inventory and policies stand; identify gaps in their practice; establish new, measurable key performance indicators and use a data-driven approach to achieve its goals.

The Final Rule groups transit providers into two categories: Tier I and Tier II. PVTA, operates more than 101 vehicles across all fixed route modes, and therefore is a Tier I provider. All Tier I providers must develop and carry out their own TAM plan and must comply with all nine elements of the TAM plan. The nine elements are detailed below.

Table 1.1 TAM Plan Elements

Element	Brief Description
1. Inventory of Capital Assets	A register of capital assets and information about those assets.
2. Condition Assessment	A rating of the assets' physical state; to be completed for assets an agency has direct capital responsibility for; should be at a level of detail sufficient to monitor and predict performance of inventoried assets.
3. Decision Support Tool	An analytic process or tool that (1) assists in capital asset investment prioritization and/or (2) estimates capital needs over time.
4. Investment Prioritization	A prioritized list of projects or programs to manage or improve the SGR of capital assets.
5. TAM and SGR Policy	A TAM policy is the executive-level direction regarding expectations for transit asset management; a TAM strategy consists of the actions that support the implementation of the TAM policy.
6. Implementation Strategy	The operational actions that a transit provider decides to conduct, in order to achieve its TAM goals and policies.
7. List of Key Annual Activities	The actions needed to implement a TAM plan for each year of the plan's horizon.
8. Identification of Resources	A summary or list of the resources, including personnel, that a provider needs to develop and carry out the TAM plan.
9. Evaluation Plan	An outline of how a provider will monitor, update, and evaluate as needed, its TAM plan and related business practices, to ensure the continuous improvement.

Source: Federal Transit Administration.

The TAM rule also requires that transit agencies establish state of good repair (SGR) performance measures and targets for each asset class. PVTA reports on the following asset performance measures and categories:

- **Rolling Stock (Revenue Vehicles):** Percent of vehicles that have either met or exceeded their Useful Life Benchmark (ULB).
- **Equipment (Equipment and Service Vehicles):** Percent of equipment that have either met or exceeded their ULB.
- **Facilities:** Percent of Facilities rated below a condition of 3 on the FTA TERM scale.

The Useful Life Benchmark (ULB) is defined as the expected lifecycle of a capital asset for a particular transit provider's operating environment, or the acceptable period of use in service for a particular transit provider's operating environment. The ULB takes into account a provider's unique operating environment such as geography, service frequency, and other factors.

The TAM rule requires that transit providers must complete their TAM plan by October 1, 2018. The TAM plan must be updated at least once every four years. At least once every fiscal year a provider must also set performance targets for the following fiscal year, which must be approved by the provider's Accountable Executive. Starting in FY2019 Triennial Reviews will include TAM as a part of FTA's oversight review program. Adhering to the TAM requirements has also been incorporated into the master agreement for direct recipients of FTA grants and in the Certifications and Assurances process.

1.4 Asset Management and State of Good Repair Policy

Through the Transit Asset Management Plan, PVTA will establish and maintain investment strategies to ensure its capital assets are kept in a state of good repair. State of good repair is defined as the condition in which a capital asset is able to operate at its intended level of performance throughout its useful life.

The following actions will support PVTA's implementation of a TAM policy:

- Maintain an inventory of all capital assets, including vehicles, facilities, technology and equipment.
- Determine the condition of all assets and monitor and predict asset performance. Report performance of assets each year to the National Transit Database (NTD).
- Utilize a decision support tool to assist in capital asset investment prioritization and capital need estimates over time.
- Establish and adhere to plans for acquisition, maintenance, disposal, renewal and risk management of capital assets.
- Maintain a prioritized list of capital investments.
- Document PVTA's asset management policies and procedures, including an implementation plan, identification of available resources, a list of key annual activities and an evaluation plan, to be updated at least once every four years.
- Develop and enhance information systems, businesses processes, and workforce capabilities to conduct effective asset management.
- Coordinate with MassDOT, the Pioneer Valley Metropolitan Planning Organization and local transit providers when establishing and adjusting performance targets for transit state of good repair.
- Effectively communicate to all employees an understanding of the performance targets, metrics and results of the Asset Management program and how they relate to the agency's mission.
- Make adjustments as necessary to policies, standards, and procedures, and reallocate resources to better meet goals and specific performance targets.

1.5 TAM Goals and Objectives

Building upon the stated TAM and SGR policy, PVTA will invest in, maintain, and operate its assets to achieve the following goals:

- Improve reliability and on-time performance.
- Improve productivity and achieve cost savings over the life cycle of the asset.
- Ensure the safety of customers and employees.
- Increase ridership and improve customer satisfaction.

- Support environmental stewardship and sustainability.

Table 1.2 details specific objectives and measures that PVTA has identified to help quantify each of its TAM goals. Measuring each of these objectives will allow PVTA to track progress towards its TAM and SGR goals, policy and overall vision.

Table 1.2 TAM Goals and Objectives

Goal	Objective and Measure	Desired Direction
Improve reliability and on-time performance.	• On-time performance of transit vehicles.	Increase
	• Frequency of road calls.	Reduce
	• Distance between revenue vehicle failures.	Reduce
	• Missed trips due to mechanical failures.	Reduce
Improve productivity and achieve cost savings over the life cycle of the asset.	• Maintenance cost per mile.	Reduce
	• Fully capitalized cost per mile.	Reduce
	• Percent of preventative maintenance done on time.	Increase
	• Percent of facility inspections done on time.	Increase
Ensure the safety of customers and employees.	• Number of injuries, fatalities and crashes.	Reduce
	• Crime rate.	Reduce
	• Number of lost time reported injuries for workers.	Reduce
Increase ridership and improve customer satisfaction.	• Ridership.	
	– Passengers per vehicle hour and/or mile.	Increase
	– Operating cost per passenger.	Reduce
	• Customer satisfaction as measured through surveys.	Increase
	• Customer complaints related to service quality.	Reduce
Support environmental stewardship and sustainability.	• Fuel consumption per passenger mile.	Reduce
	• Fuel consumption per vehicle mile.	Reduce
	• Number of alternative fuel vehicles in fleet.	Increase

2.0 Asset Inventory

The following capital assets are items PVTA owns, operates and has direct capital responsibility for.

2.1 Rolling Stock

Table 2.1 provides a summary of the rolling stock asset inventory. PVTA has a total of 341 revenue vehicles in its inventory. These vehicles fall into 6 primary categories: 4 articulated buses (heavy duty); 175 buses, including both 40' and 35' vehicles (heavy duty); 10 minibuses; 8 cutaway buses; 142 minivans; and 2 trolleybuses. The average age of the revenue vehicle fleet is 5.0 years, and the average mileage of each vehicle is 164,000 miles. The full asset inventory for rolling stock is included in Appendix A (Asset Register).

Table 2.1 Revenue Vehicle Inventory Summary by FTA Asset Category

Asset Category	Total Number	Avg. Age	Avg. Mileage	Avg. Value
Revenue Vehicles	**341**	**5.0**	**164,049**	**$281,380**
AB—Articulated Bus	4	5.0	133,692	$1,098,068
BU—Bus	175	7.2	249,206	$444,962
MB—Minibus	10	12.0	331,083	$368,231
CU—Cutaway Bus	8	3.5	71,977	$75,941
MV—Minivan	142	1.7	54,382	$59,594
TB—Trolleybus	2	17.0	46,867	$468,841

Note: The BU-Bus category contains both 35' and 40' vehicles.

2.2 Facilities

As shown in Table 2.2, PVTA currently uses nine facilities in the provision of its transit service. PVTA has direct capital responsibility of six facilities for a total of eight buildings. Additional facility details are included in Appendix A (Asset Register). Included in this list are facilities that PVTA uses, but that it does not have direct capital responsibility for.

Table 2.2 Facility Inventory Summary

Facility Name	Facility Type	City	Direct Capital Responsibility	Operator
Administration Building/Main Street Operations	Administration—Administrative Office/ Sales Office	Springfield	Yes	PVTA
Holyoke ITC Bays	Passenger—Bus Transfer Center	Holyoke	Yes	Springfield Area Transit Company
Holyoke ITC Info Center	Administration—Administrative Office/Sales Office	Holyoke	No	PVTA
National Express	Maintenance—General Purpose Maintenance Facility/Depot	Springfield	No	National Express

Facility Name	Facility Type	City	Direct Capital Responsibility	Operator
Northampton Bus Maintenance Facility (VATCo)	Maintenance—Maintenance Facility (Service and Inspection)	Northampton	Yes	Valley Area Transit Company
PVTA Main Street Maintenance Garage (SATCo)	Maintenance—Maintenance Facility (Service and Inspection)	Springfield	Yes	Springfield Area Transit Company
PVTA Main Street Maintenance Garage (SATCo) Barn	Maintenance—Maintenance Facility (Service and Inspection)	Springfield	Yes	Springfield Area Transit Company
Springfield Information Center	Administration—Administrative Office/Sales Office	Springfield	No	PVTA
UMass Bus Operations and Maintenance Facility/University Transit Services	Maintenance—Maintenance Facility (Service and Inspection)	Amherst	Yes	UMass Transit
UMass Bus Operations and Maintenance Facility/University Transit Services—RTIC	Maintenance—Maintenance Facility (Service and Inspection)	Amherst	Yes	UMass Transit
Union Station Bays	Administration—Administrative Office/Sales Office	Springfield	No	Springfield Area Transit Company
Westfield Olver Transit Pavilion	Passenger—Bus Transfer Center	Westfield	Yes	PVTA

Note: The Cottage Street Fixed-Route Bus Operations & Maintenance Facility is scheduled to open in FY2019.

2.3 Equipment

Equipment assets for PVTA fall into three categories: Service Vehicles, Bus Shelters, and Other Equipment. A summary of these assets is shown in Table 2.3, and a full listing of equipment assets is included in Appendix A (Asset Register).

A total of 49 non-revenue service vehicles are included in PVTA's fleet, including 33 automobiles and 16 trucks and other rubber-tire vehicles, with an average age of 8.4 years. Automobiles include 2 sedans and 31 SUVs. Trucks and other rubber tire vehicles include 14 pickup trucks and two vans.

PVTA currently has approximately 155 bus shelters in its system. Shelters are of two styles: Contemporary, manufactured by Columbia Equipment Company, and Victorian, manufactured by Brasco International Inc. Each style comes in multiple size options. Bus shelters vary in replacement value, with an average of approximately $11,500 including both the shelter structure and associated concrete pad. PVTA is currently undertaking a complete inventory of bus stops, which will provide a full listing of shelters, signs, and other amenities at all stops along with their condition.

Other equipment is divided into two categories: facilities critical equipment and support equipment. Facilities critical equipment includes items over $5,000 in value that supports facility maintenance, but is not a fixed part of the facility itself. This includes items such as flooring systems, mobile column and stands, and lifts.

The total value of these assets is $196,785. Support equipment aids in maintenance, but can be moved between facilities. This includes items such as Bobcat skid steer loaders, air compressors, washing systems, forklifts, brake lathes, kilns, and other similar equipment over $5,000 in value. The total value of the support equipment assets is $821,801.

Table 2.3 Equipment Inventory Summary

Asset Category	Total Number	Avg. Age	Avg. Mileage	Avg. Value
Service Vehicles	**49**	**8.4**	**53,051**	**$35,371**
Automobiles	33	5.3	46,457	$29,331
Trucks and Other Rubber Tire Vehicles	16	14.9	66,652	$47,828
Bus Shelters	**155**	**—**	**—**	**$11,500**
Other Equipment	**—**	**—**	**—**	**$1,018,585**
Support Equipment	—	—	—	$821,801
Maintenance—Facilities Critical Equipment	—	—	—	$196,785

Note: The count of bus shelters is approximate and will be updated through the ongoing bus stop inventory.

2.4 Systems

Systems include all information technology (IT)-related assets, and are divided into three primary categories:

- Communications, Monitoring, and Revenue Collection.
- Security Infrastructure.
- Information Services.

These are summarized in Table 2.4. Appendix A (Asset Register) includes additional detail on these assets.

Communications, monitoring, and revenue collection systems include radio equipment, communication towers, antennas, and related equipment, along with supporting software, hardware and software such as fareboxes, money counters, and point-of-service software. This category totals $1,535,407 in assets.

Security infrastructure includes cameras, access control hardware, network video recorders (NVR), and systems. Systems include fixed route video, paratransit video, and facility video. PVTA's security infrastructure assets total $3,790,592.

Information services captures the remaining IT assets. PVTA has six major software assets:

- **Abila MIP Fund Accounting System.** Fund accounting system to manage budgets, maximize grants, and produce reports, and record van mileage.
- **ADEPT.** Paratransit software system ADEPT facilitates reservations, scheduling, and dispatching, monitors on-time performance, missed trips, and travel times, and generates reports. Includes Interactive

voice response (IVR) that integrates with ADEPT paratransit software to make night before reminder, arrival notification, and customer information calls to PVTA paratransit clients.

- **Avail.** Intelligent Transit System publishing Hastus data to fixed route vehicles and the public, controls farebox, external and internal signs, announcements, and closed microphone communications. Avail tracks operations statistics, captures odometer reading on paratransit vehicles, and has GPS, Computer Assisted Dispatch (CAD), and Automated Passenger Counter (APC) functions. Avail integrates with ADEPT for paratransit operations, exchanging real-time schedule updates with revenue vehicles.

- **Hastus.** Fixed-route software system used for planning, scheduling, operations, passenger information and analysis. Database and software used for modeling and managing the delivery of fixed-route service and used by operators for managing contractor staff leave.

- **TransAM.** An open-source asset management platform used to maintain an asset inventory, including condition assessment, forecasts, and NTD report generation.

- **Trapeze.** Software system used for managing maintenance, including recordkeeping, vehicle usage; tracking and scheduling preventative maintenance, managing parts inventory and parts procurement.

The relationship of these systems, and their use in service planning, operations, capital planning, and asset management, is discussed in Section 4.0. In addition to these six software assets, the information services category includes network infrastructure, desktop and laptop personal computers, web development, and other software and hardware. In total, PVTA's information services asset base totals $9,634,153.

Table 2.4 Systems Inventory Summary

Asset Category	Value
Information Systems	**$9,634,153**
Abila Accounting	$14,032
ADEPT	$1,019,794
Avail	$5,477,322
Hastus	$218,252
TransAM	$82,394
Trapeze	$118,310
Network Systems	$722,279
Web Development	$364,628
Other Hardware/Software	$1,617,143
Security Infrastructure	**$3,790,592**
Communications, Monitoring, and Revenue Collection	**$1,535,407**

3.0 Asset Condition Assessment

For rolling stock and service vehicles, PVTA's Useful Life Benchmarks (ULBs) are summarized in Table 3.1.

Table 3.1 Useful Life Benchmarks

Asset Category	ULB
Revenue Vehicles	
AB—Articulated Bus	12
BU—Bus	12
MB—Minibus	10
CU—Cutaway Bus	7
MV—Minivan	4
TB—Trolleybus	13
Service Vehicles	
Automobiles	8
Trucks and Other Rubber Tire Vehicles	10

3.1 Rolling Stock

The condition of revenue vehicles is based on each vehicle's age relative to its ULB. Table 3.2 presents a summary of condition for each category of revenue vehicle, the average age and mileage for each group, and the percentage that are at or past their ULB. Calculations for average age and ULB are based on the fiscal year of the in-service date for each vehicle. More details are presented in Appendix B.

In total, PVTA currently has 91 revenue vehicles that are at or past their ULB, including 34 buses, 10 minibuses, 2 cutaway buses, 43 minivans, and 2 trolleybuses.

Table 3.2 Rolling Stock Condition Summary

Asset Category	Total Number	Avg Age	Avg Mileage	Count At or Past ULB	% At or Past ULB
Revenue Vehicles	**341**	**5.0**	**164,049**	**91**	**26.7%**
AB—Articulated Bus	4	5.0	133,692	0	0.0%
BU—Bus	175	7.2	249,206	34	19.4%
MB—Minibus	10	12.0	331,083	10	100.0%
CU—Cutaway Bus	8	3.5	71,977	2	25.0%
MV—Minivan	142	1.7	54,382	43	30.3%
TB—Trolleybus	2	17.0	46,867	2	100.0%

3.2 Facilities

PVTA utilized the following steps to assess and report facility conditions and to establish their required performance measures.

Facility condition is calculated using the FTA TERM Condition Assessment Scale. Rating and condition descriptions are included in Table 3.3.

Table 3.3 FTA TERM Condition Assessment Scale

Rating	Condition	Description
5	Excellent	• No visible defects, new or near new condition, may still be under warranty if applicable. • Asset performs its designed function, is new and within its warranty period, asset does not pose a known unacceptable safety risk.
4	Good	• Good condition, but no longer new, may be slightly defective or deteriorated, but is overall functional. • Asset performs its designed function, asset has not met its useful life, asset does not pose a known unacceptable safety risk.
3	Adequate	• Moderately deteriorated or defective, but has not exceeded useful life. • Asset performs its designed function, asset has not met its useful life, asset does not pose a known unacceptable safety risk.
2	Marginal	• Defective or deteriorated in need of replacement; exceeded useful life. • Asset performs its designed function, asset has met its useful life, asset does not pose a known unacceptable safety risk
1	Poor	• Critically damaged or in need of immediate repair; well past useful life. • Asset has met its useful life, does not perform its designated function, poses a known unacceptable safety risk.

Source: Federal Transit Administration.

FTA requires that facility condition data be fully updated and reported to the NTD every four years. To date, PVTA has completed detailed condition assessments of their Northampton Bus Maintenance Facility and the Westfield Olver Transit Pavilion. The detailed assessments can be found in Appendix C. An initial condition rating has been provided for the remaining facilities. Formal condition assessments will be completed for the remaining facilities in the coming years. The identified condition ratings for all facilities that PVTA has direct capital responsibility for are summarized in Table 3.4 and shown in more detail in Appendix B. It should be noted that all passenger facilities must be inventoried in the TAM plan and reported to the NTD regardless of ownership. However, a condition assessment and SGR targets are not required. This distinction applies to PVTA's Union Station Bay's facility and therefore the facility has been included below, but does not include a condition rating.

Table 3.4 Facility Condition Summary

Facility Name	Facility Type	Direct Capital Responsibility	Condition (TERM Rating)	Year Built or Reconstructed	Cost/Value
Administration Building/Main Street Operations	Administration—Administrative Office/Sales Office	Yes	3	1897, rebuilt 1991	$11,190,680
Holyoke ITC Bays	Passenger—Bus Transfer Center	Yes	4	2010	$11,440,000
Northampton Bus Maintenance Facility (VATCo)	Maintenance—Maintenance Facility (Service and Inspection)	Yes	4	1987	$3,713,426
PVTA Main Street Maintenance Garage (SATCo)	Maintenance—Maintenance Facility (Service and Inspection)	Yes	2	1916	$8,978,500
PVTA Main Street Maintenance Garage (SATCo) Barn	Maintenance—Maintenance Facility (Service and Inspection)	Yes	2	1983	$3,600,000
UMass Bus Operations and Maintenance Facility/University Transit Services	Maintenance—Maintenance Facility (Service and Inspection)	Yes	3	1979	$6,135,600
UMass Bus Operations and Maintenance Facility/University Transit Services—RTIC	Maintenance—Maintenance Facility (Service and Inspection)	Yes	4	2009	*
Union Station Bays	Passenger—Bus Transfer Center	No		2017	—
Westfield Olver Transit Pavilion	Passenger—Bus Transfer Center	Yes	5	2016	$4,000,000

*Value is combined with the 1979 UMass Bus Operations and Maintenance Facility/University Transit Services

Note: Cost/Value is based on insurance replacement values for each facility.

3.3 Equipment

The condition of equipment assets is summarized in Table 3.5, and shown in more detail in Appendix B. Condition for service vehicles is based on the vehicle's age compared to its ULB. A total of 13 service vehicles are at or past their useful life, including 10 automobiles and 5 trucks and other rubber tire vehicles.

For most bus shelters, condition is not currently known. This information is currently being collected through an ongoing bus stop inventory, which will document all equipment at each PVTA bus stop, along with the condition of bus shelters.

Table 3.5 Equipment Condition Summary

Asset Category	Total Number	Avg Age	Avg Mileage	Avg TERM Condition	Count At or Past ULB	% At or Past ULB
Service Vehicles	**49**	**8.4**	**53,051**	—	**15**	**30.6%**
Automobiles	33	5.3	46,457	—	10	30.3%
Trucks and Other Rubber Tire Vehicles	16	14.9	66,652	—	5	31.3%
Bus Shelters	**155**	—	—	—	—	—

3.4 Systems

The condition of software assets is based on having a current license or maintenance and hosting agreement in place. Each of the six major software assets have maintenance agreements in place. Current versions of the software systems are as follows:

- **Abila:** PVTA has version 18.1.1.0, which is the latest version. A maintenance/support agreement is included in the subscription.
- **Adept:** Currently using version 6.2.42. A maintenance/support agreement is in place.
- **Avail**: Using version 6.3.6. A maintenance/support agreement is in place. Avail assets also include hardware on revenue vehicles. For buses, 151 have Vector 530 hardware, 17 have Vector 9000 hardware, and 28 have Mslate. All paratransit vans have Mslate hardware onboard.
- **Hastus**: Version 2015. A maintenance/support agreement is in place.
- **Trapeze:** Currently have v14.o.x. PVTA has the newest version in a test lab, and in the next few months will be moving towards using that version.
- **TransAM**: PVTA is currently using Build 2.2.1 Powered by TransAM Ver 2.2.9, with quarterly maintenance releases being deployed per the hosting/maintenance agreement.

4.0 Management Approach and Decision Support Tools

PVTA staff, in conjunction with their contractors and operators, utilize a variety of management practices, policies and technology to manage, maintain and plan throughout the lifecycle of an asset. The following section details the roles, process and tools used to manage the lifecycle planning of PVTA's capital assets.

Central to PVTA's management approach are a number of written maintenance policies and plans that have been adopted and are fully implemented within the Authority. The following PVTA written plans and policies can be found in more detail in the Appendix D.

- Vehicle Maintenance Plan (Springfield Area Transit Company, Valley Area Transit Company, and UMass Transit Services).
- Vehicle Maintenance Plan (UMass Transit Services).
- Facilities and Equipment Maintenance Plan (Springfield Area Transit Company and Valley Area Transit Company).
- Facility Maintenance Plan (UMass Transit Services).
- Facility Video Maintenance Plan.
- PVTA's Asset Disposal Process.

4.1 Roles and Responsibilities

Per the FTA TAM requirements, each transit provider must designate an "Accountable Executive." The Accountable Executive is ultimately responsible for ensuring that a TAM plan is developed and carried out. They must self-certify that a TAM plan is complete, and must approve each annual performance target. PVTA has identified Sandra Sheehan, the agency Administrator, as their Accountable Executive.

The successful development and implementation of the TAM plan requires the shared work and responsibility of many people. Specific TAM related responsibilities and tasks have been identified in Table 4.1, along with the specific position that is responsible for completing each task.

Table 4.1 PVTA TAM Roles and Responsibilities

Responsibility	Position
Accountable Executive.	Administrator, Sandra Sheehan
Collects, tracks and reports asset condition. • Vehicles • Facilities and Stations • Equipment • Systems	Contractors; Director of Operations and Planning; Chief Information Officer
Analyzes asset condition and determines replacement schedules.	PVTA Management, Contractor Maintenance Managers
Develops a prioritized list of capital investments.	PVTA Management

Responsibility	Position
Responds to identified needs and pursues necessary budget support.	Administrator
Establishes agency-wide targets and performance metrics.	PVTA Management; Contractors
Develops/updates PVTA's TAM policy approved by accountable executive.	Director of Operations and Planning
Reports capital needs and TAM plan to the Advisory Board.	Director of Operations and Planning, Administrator
Coordinates needs, capital plan and TAM plan with the Metropolitan Planning Organization (MPO).	Chief Financial Officer; Administrator
Reports to the National Transit Database (NTD).	Chief Financial Officer

4.2 TAM Key Annual Activities

The following key annual activities form the foundation of PVTA's asset management process.

Fall

- Annual data submission to the National Transit Database (NTD) - due October 1.
- Capital Planning:
  - Collect and evaluate unconstrained capital needs.
  - Identify and update anticipated federal and local funding levels.
  - Develop 5 year Capital Scenario for submission to MassDOT.

Winter

- Capital Planning:
  - Complete project background sheet and score capital projects (as requested by MassDOT).
  - Provide additional capital needs documentation as requested.

Spring

- Capital Planning:
  - In conjunction with MassDOT, PVTA's 5-Year Capital Plan is finalized, TIP and STIP developed.
  - PVTA identifies revenue vehicles and service vehicles for disposal.

Summer

- PVTA conducts annual update of TAM Plan:
  - Performance measures and targets are updated.
  - Conduct annual facility inspections and condition assessments.
  - Updated TAM plan, performance measures and targets are shared with the Advisory Board, MPO and MassDOT.

On-going

- Quarterly: PVTA conducts inspections to verify the condition and safety of their facility assets.
- Monthly: PVTA collects and reviews revenue vehicle mileage.
- As Needed: Routine maintenance is performed, based on manufacture guidelines on all PVTA operated vehicles.

4.3 Decision Support Tools

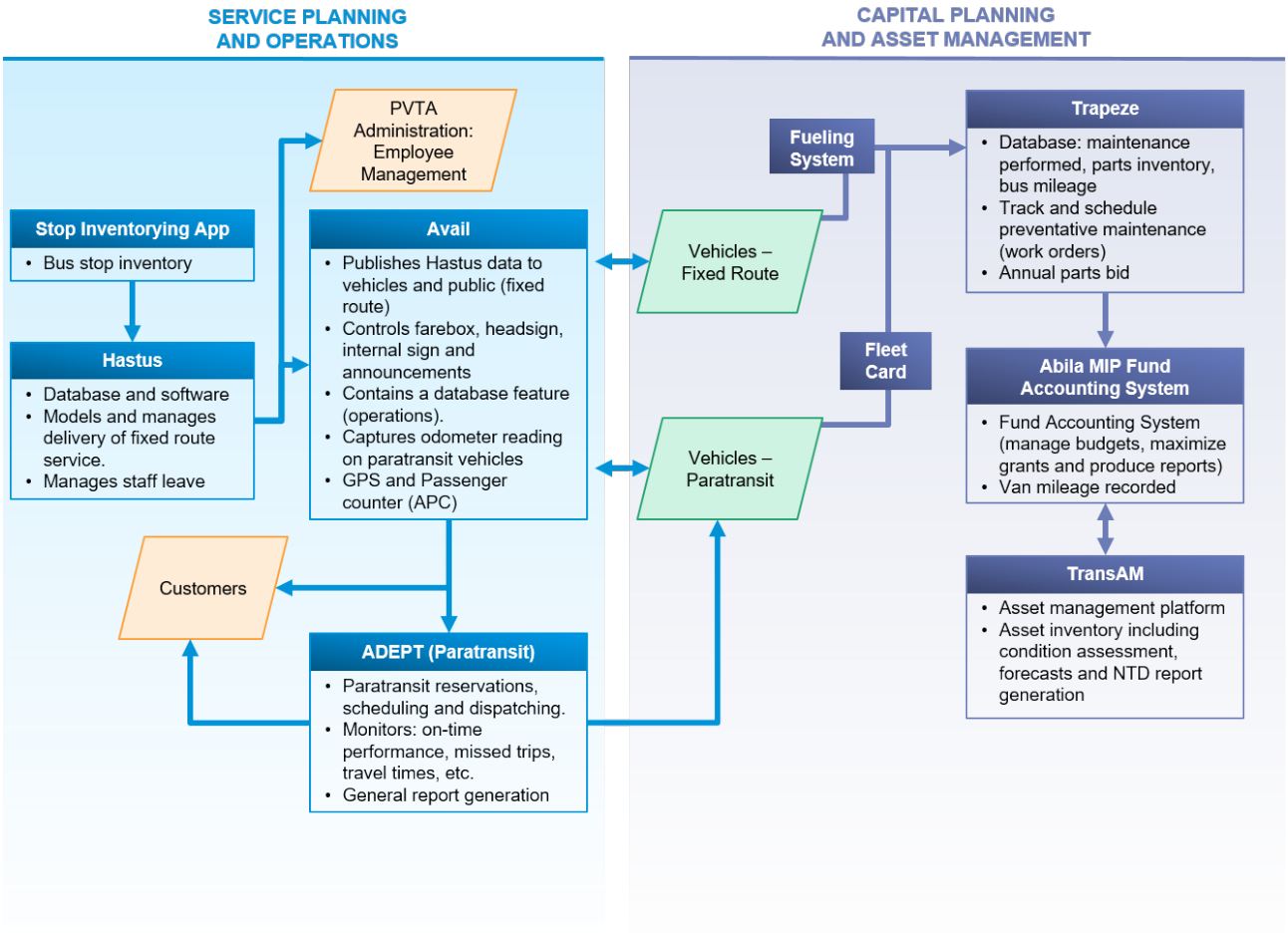
PVTA currently utilizes a number of analytical processes, systems and decision support tools to estimate capital investment needs over time and to assist in the development of its investment prioritization. A number of these processes have been identified and detailed in the Key Annual Activities section. That section

chronicles how each process informs the overall annual decision-making process. As noted a number of these activities are required or dictated by PVTA's funding partners, including the Federal Transit Administration and the Massachusetts Department of Transportation.

To further help manage and inform the decision-making process, PVTA is currently implementing the TransAM Asset Management system as their primary tool for managing all capital assets. The software application captures key information on all assets and their related attributes, including classification, purchase date, purchase price, mileage, condition, maintenance history, ULBs and other policy information.

A number of other IT systems have been adopted by PVTA to assist in the collection, tracking and analyzing of data related to their capital assets. The relationship and interactions between all of these systems is detailed in Figure 4.1.

Figure 4.1 Relationship of Key PVTA Systems



4.4 Risk Management

There are a range of possible risks that could impact the execution of a TAM plan and PVTA's ability to maintain a SGR. Table 4.2 acknowledges and describes these risks. It also provides a set of mitigation strategies that PVTA will continue to follow to prevent and minimize the impact of each potential risk factor.

Table 4.2 Risks and Mitigation Strategies

Risk	Mitigation Strategy
Safety Issues	• Ensure that all recalls are conducted on a timely basis. • All facilities and operators have written maintenance plans. • Ensure full compliance with maintenance strategy. • Driver safety training and employee training on regular basis.
Loss of Federal and/or State Funding	• Keep assets in a State of Good Repair. • Communicate to elected representatives importance of existing funding streams to PVTA. • Establish and maintain strong public-private partnerships. • Effective communication with MassDOT through the Program Preview process.
Ineffective Maintenance Strategy	• Regularly review maintenance strategy and adherence to it. • Ensure strategy is communicated to each operator. • Hold quarterly Facility Maintenance meetings.
"Lemon" Risks	• Ensure enforceable warranties are included with all major purchases and operating agencies are appropriately educated.
Vehicle Delivery Delays	• Use contracting language to protect from delivery delays. • Ensure operator fleets have sufficient Spare Ratios to minimize impact of delays on service delivery.
Decision-making is based on incomplete or inaccurate information	• Make sure asset information is kept up-to-date in TransAM. • Ensure strong asset management processes and practices are implemented to maintain the asset inventory throughout the year.
Obsolete Technology	• Procure technology with predictable lifecycles. • Conduct consistent preventative maintenance. • Provide sufficient training to support legacy equipment. • Develop plans for how to manage the operation of end-of-life aged technologies. • Prior to contract execution, ensure risks are satisfactorily addressed in writing.

5.0 Prioritized List of Investments

5.1 Process Overview

PVTA performs a comprehensive investment prioritization process on an annual basis. The process is completed in conjunction with the overall capital planning process and is closely aligned with MassDOT's annual development of their Capital Investment Plan (CIP).

The process begins with the internal solicitation of all capital needs. All relevant data, asset management and accounting systems are utilized and consulted along with updated asset condition information. Using this information, a fiscally unconstrained list of capital needs is developed. PVTA's 5-year Capital Scenario, which includes anticipated Federal funding levels, is submitted to MassDOT for inclusion with the CIP. MassDOT evaluates PVTA's capital needs, available funding, and using a project scoring and evaluation process, allocates available state capital bond dollars to projects. Historically PVTA's capital needs have exceeded available Federal and state funds.

MassDOT's capital planning approach includes the strategy of investing in the reliability of the transportation system first, followed by modernization and expansion. Individual projects are included in overarching CIP investment programs and program budgets are determined based on determined need and available funds. This process is conducted at the same time across all transportation modes and MassDOT departments. The final list of projects is shared with the public and approved by the MassDOT Board. The CIP is a five-year plan, but state dollars are only contracted for the first year of the plan. PVTA produces a rolling five-year capital plan annually.

Throughout the year, PVTA may also perform additional informal prioritization processes, and re-allocate funds to address any asset needs that arise during routine quarterly facility inspections and monthly vehicle inspections. Depending on the nature of these capital needs, MassDOT or Federal Transit Administration (FTA) approval may be needed.

5.2 Funding Overview

PVTA receives capital funding directly from the Federal Transit Administration, the Massachusetts Department of Transportation (MassDOT) and local municipalities. PVTA receives Section 5307, Urban Area Formula and Section 5339, Bus and Bus Facilities Infrastructure Investment Program funds directly from FTA. PVTA is also eligible to submit an application to MassDOT annually for Section 5310, Enhanced Mobility of Seniors and Individuals with Disabilities capital funds. State capital funds are allocated through the annual CIP process.

Based on the State Transportation Improvement Program (STIP), FY19-23, PVTA's future anticipated funding levels for capital projects are detailed in Table 5.1.

Table 5.1 Future Federal and State Funding Levels

Funding Type	FY2019	FY2020	FY2021	FY2022	FY2023
Federal Funds	$10,856,221	$11,400,997	$12,498,251	$13,071,130	$13,267,199
State Funds	$14,387,510	$7,890,720	$12,262,612	$7,478,738	$12,133,664

Source: State Transportation Improvement Program, FY2019–2023. Note: in recent years, approximately 50 percent of Federal funds have been used for maintenance and ADA operating costs.

5.3 Needs Assessment

5.3.1 Rolling Stock

The needs assessment for revenue vehicles is based on the in-service date for each vehicle and the ULB for that vehicle type. In addition, it takes into consideration the changing needs of PVTA's fleet, which include replacing 10 minibus vehicles with six 35' buses with the remaining four staying in the contingency fleet. It also includes reducing the cutaway bus fleet by 3 vehicles, and not replacing the two existing trolleybuses. The unconstrained list of needs for FY2019 through FY2023 are summarized in Table 5.2.

Table 5.2 Revenue Vehicle Fleet - Unconstrained Needs

	FY2019			FY2020			FY2021			FY2022			FY2023		
Vehicle Type	**Fleet Req.**	**Repl. #**	**Repl. Cost**	**Fleet Req.**	**Repl. #**	**Repl. Cost**	**Fleet Req.**	**Repl. #**	**Repl. Cost**	**Fleet Req.**	**Repl. #**	**Repl. Cost**	**Fleet Req.**	**Repl. #**	**Repl. Cost**
Articulated Bus	0	0	—	0	0	—	0	0	—	0	0	—	0	0	—
Bus	34	44	$20.07	15	15	$7.01	21	21	$10.01	0	0	—	32	32	$16.2
Minibus	10	0	—	0	0	—	0	0	—	0	0	—	0	0	—
Cutaway Bus	2	0	—	0	0	—	0	0	—	4	3	$0.26	0	0	—
Minivan	43	43	$2.64	29	29	$1.83	30	30	$1.95	40	40	$2.68	43	43	$2.97
Trolleybus	2	0	—	0	0	—	0	0	—	0	0	—	0	0	—
Total	**91**	**87**	**$22.71**	**44**	**44**	**$8.84**	**51**	**51**	**$11.96**	**44**	**43**	**$2.94**	**75**	**75**	**$19.20**

Note: Dollar values are in millions.

5.3.2 Facilities

Table 5.3 presents the unconstrained capital needs identified in PVTA's 5-year capital plan for facilities from FY2019 through FY2023.

Table 5.3 Facility Capital Needs - FY2019–2023

Facility	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Northampton Bus Maintenance Facility (VATCo)	$175,000	$140,000	$1,700,000	-	$750,000
UMass Bus Operations and Maintenance Facility/University Transit Services	$15,000	$200,000	$2,050,000	-	-
Holyoke ITC	-	-	-	-	$500,000
PVTA Main Street Maintenance Garage (SATCo)	$650,000	$1,900,000	-	-	-

Facility	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Administration Building/Main Street Operations	-	$105,000	-	$100,000	-
Cottage Street Bus O&M Facility	$11,824,862	-	-	-	-
Northampton ITC	-	-	$400,000	$2,760,000	$6,200,000
Total	**$12,839,862**	**$2,345,000**	**$4,150,000**	**$2,860,000**	**$7,450,000**

Source: PVTA 5-year Capital Plan.

5.3.3 Equipment

For service vehicles, the unconstrained list of needs based on the acquisition date of each vehicle and the ULB for each vehicle type is shown in Table 5.4.

Table 5.4 Service Vehicle Fleet - Unconstrained Needs

	FY2019			FY2020			FY2021			FY2022			FY2023		
Vehicle Type	Fleet Req.	Repl. #	Repl. Cost	Fleet Req.	Repl. #	Repl. Cost	Fleet Req.	Repl. #	Repl. Cost	Fleet Req.	Repl. #	Repl. Cost	Fleet Req.	Repl. #	Repl. Cost
Automobiles	15	15	$0.30	1	1	$0.03	2	2	$0.06	13	13	$0.43	0	0	-
Trucks and Other	3	3	$0.15	1	1	$0.05	3	3	$0.16	2	2	$0.15	2	2	$0.88
Total	**13**	**13**	**$0.45**	**2**	**2**	**$0.09**	**2**	**2**	**$0.23**	**13**	**13**	**$0.58**	**2**	**2**	**$0.88**

Note: Dollar values are in millions.

PVTA has an ongoing shelter replacement program. Shelter locations are prioritized based on service level. Shelters may be customized to the site and accommodate a larger number of passengers if needed. If feasible, shelters will have real time information and lighting. PVTA also attempts to connect bus stops with tree belt concrete pads. On average, PVTA spends $110,000 per year on its shelter and stop work program.

PVTA purchases special tools and equipment for bus and van repairs, including tires. Funds are typically requested to replace worn or damaged tools and equipment as well as other items identified for the Springfield Operations and Maintenance facility once construction is completed. There is a substantial increase in needs for FY19-20 in order to prepare for the transition to the new Operations and Maintenance Facility and enhancements to the paratransit maintenance shop equipment. In FY21, the needs should return to typical cost level. No equipment replacement is anticipated in FY22 or FY23.

5.3.4 Systems

Identified investment needs for PVTA systems are shown in Table 5.5. The total anticipated needs by fiscal year, as presented in the PVTA FY19-23 5-year Capital Plan and the Information Technology Budget are as follows:

Table 5.5 System Capital Needs

System Category	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Information Systems	$839,150	$1,235,340	$2,034,637	$2,324,203	$1,684,880
Security Infrastructure	$50,000	$50,000	$50,000	$50,000	$0
Communications, Monitoring, and Revenue Collection	$220,000	$405,000	$400,130	$315,394	$220,794
Total	**$1,109,150**	**$1,690,340**	**$2,484,767**	**$2,689,597**	**$1,905,674**

Source: PVTA 5-year Capital Plan and Information Technology Budget.

5.4 Programmed List of Capital Investments FY19-23

Based on the prioritization process described above, along with the funding available, the prioritized and constrained list of investments by fiscal year is shown in Table 5.6. This list is consistent with the approved FY2019-23 Pioneer Valley Planning Commission (PVPC) TIP.

Table 5.6 Prioritized List of Investments

	FY2019		FY2020		FY2021		FY2022		FY2023	
Item	**#**	**Cost ($)**	**#**	**Cost ($)**	**#**	**Cost ($)**	**#**	**Cost ($)**	**#**	**Cost ($)**
Revenue Vehicles										
Articulated Bus										
Bus	8	5,792,000	25	14,257,612	32	19,391,574	25	15,144,348	25	15,611,346
Minibus										
Cutaway Bus										
Minivan	27	1,836,620					24	1,783,933	9	689,044
Trolleybus										
Facilities										
Cottage Street Bus O&M Facility		11,824,862								
PVTA Main Street Maintenance Garage (SATCo)		650,000		1,900,000						
UMass Bus Operations and Maintenance Facility/University Transit Services		15,000								
Northampton Bus Maintenance Facility (VATCo)				140,000						750,000
Holyoke ITC										500,000

	FY2019		FY2020		FY2021		FY2022		FY2023	
Item	**#**	**Cost ($)**	**#**	**Cost ($)**	**#**	**Cost ($)**	**#**	**Cost ($)**	**#**	**Cost ($)**
Equipment										
Nonrevenue Vehicles	6	195,000	4	200,000	2	50,000	7	173,000		
Bus Shelters		100,000		96,780		103,711		103,711		105,672
Other Equipment		1,572,000		142,000		137,000		27,000		27,000
Systems										
Information Systems[1]		1,772,249		2,162,043		2,923,360		3,152,127		2,392,881
Total		**$23,757,731**		**$18,898,435**		**$22,605,645**		**$20,384,119**		**$20,075,943**

Notes: Other planned uses of capital dollars, such as environmental compliance, planning, ADA service subsidy, and preventative maintenance, is excluded from the investment list.

[1] Information Systems spending in the TIP includes operating spending, and are therefore higher than the system asset needs identified in Table 5.5.

6.0 Unfunded Capital Needs

The following section demonstrates and details the difference between PVTA's fiscally constrained list of capital investments as identified in the 5-year TIP, and the unconstrained list of needs identified through this TAM Plan.

Table 6.1 summarizes the total unfunded capital needs by fiscal year and asset type. Black (positive) numbers show where unconstrained needs exceed the fiscally constrained list in the 5-year TIP. Red (negative) numbers mean that funding exceeds needs for that item and fiscal year.

Table 6.1 Unfunded Capital Needs

	FY2019		FY2020		FY2021		FY2022		FY2023	
Item	**#**	**Cost ($)**	**#**	**Cost ($)**	**#**	**Cost ($)**	**#**	**Cost ($)**	**#**	**Cost ($)**
Revenue Vehicles										
Bus (30', 35', 40')	36	$14,278,000	(10)	($7,247,612)	(11)	($9,381,574)	(22)	($14,884,348)	7	$588,654
Minivan	16	$803,380	29	$1,830,000	30	$1,950,000	16	$896,067	34	$2,280,956
Facilities										
Northampton Bus Maintenance Facility (VATCo)		$175,000		-		$2,100,000		$2,760,000		$6,200,000
UMass Bus O&M Facility/University Transit Services		-		$200,000		$2,050,000		-		-
Administration Building/Main Street Operations		-		$105,000		-		$100,000		-
Equipment										
Nonrevenue Vehicles	13	$450,000	2	$90,000	2	$230,000	13	$580,000	2	$880,000
Bus Shelters		$10,000		$13,220		$6,289		$6,289		$4,328
Systems										
Information Systems		-		-		-		-		-
Total		**$1,438,380**		**$2,238,220**		**$6,336,289**		**$4,342,356**		**$9,365,284**

Note: Dollar values for 30'-40' buses are excluded from total, as the total number of buses planned for purchase during the 5-year period match the expected fleet needs shown in Table 5.2.

In total, $23.7 million in capital needs remain unfunded by the expenditures listed in the TIP over the 5-year period. Below are additional details regarding the findings by asset category.

- **Revenue Vehicles:** When looking just at buses, the funds available significantly exceed the stated need. When combined with the cutaway bus category there are zero unfunded buses over the five-year period. In FY19 there is a shortfall of 36 buses, however in FY20-22 this deficit is made up, and by FY23 the overall needs have returned to zero. Unfunded needs for minivan replacement are significant, totaling $7.8 million over the five-year period, with 125 fewer minivans replaced than needed during the five-year plan.

- **Facilities:** There is a combined shortfall of $13.7 million for the three facilities listed, Northampton Bus Maintenance Facility, UMass Bus Operations and Maintenance Facility, and the Administration Building/Main Street Operations. Especially in FY21-23 there is a significant shortfall for the Northampton Bus Maintenance Facility.

- **Equipment:** Based on the current needs assessment, 32 service vehicles will not be replaced on schedule (this is 2/3 of the fleet). There is a minor shortfall for bus shelters, resulting in 4 shelters not being funded over the 5-year period.

- **Systems:** Information systems were excluded from this analysis. Overall, PVTA's identified information system needs are met.

This analysis is presented as a starting point in understanding PVTA's unfunded capital needs. In the coming year PVTA will continue to refine and develop this analysis in order to clearly demonstrate where there is a lack of funds (either at the federal or state level) available. PVTA has secured the funds to perform an accessibility study of the Northampton Bus Maintenance Facility (VATCo) and the UMass Bus Operations and Maintenance Facility facilities. PVTA will also conduct a formal analysis of their PVTA Main Street Maintenance Garage (SATCo). These studies will help PVTA further understand and estimate the appropriate cost of the improvements needed to these facilities.

In addition when viewing PVTA's unfunded capital needs, it is important to note that while total bus replacements for the five-year horizon meet PVTA's needs, many of the vehicles are slated to be replaced several years after their useful life has been reached. This increases the costs of replacement, and creates risks of impacting service and increasing maintenance costs. In addition the current list of vehicle needs does not take into consideration PVTA's interest in or the additional costs associated with alternative fuel vehicles (for example electric buses). Finally, while the identified unfunded needs for minivan replacement are significant, PVTA's current TIP does not take into consideration MassDOT's Community Transit Grant Program, which is an annual competitive program that awards vans and minivans to eligible recipients. PVTA will likely receive some funding for minivans through this annual competitive program and therefore the presented need may not be as significant as currently projected.

7.0 Annual Performance Measures and Targets

The TAM Final Rule established four performance measures to approximate the State of Good Repair (SGR) for four categories of capital assets. Calculating performance measures is intended to help a transit agency quantify the condition of their assets. For revenue vehicles and equipment, the FTA established performance measure is the percentage of vehicles that have met or exceeded their useful life benchmark. For facilities, the performance measure is the percentage of facilities rated below condition 3 on the Transit Economic Requirements Model (TERM) scale. Targets are required to be set by PVTA for each applicable asset class for the coming year. Initial targets were required to be set by January 1, 2017 and every fiscal year thereafter. Once established, the TAM rule requires that the transit provider's accountable executive approves performance measures.

Table 7.1 shows asset performance measured by asset class and FY19 targets.

Table 7.1 Performance Measures and Targets

Asset Category—Performance Measure	Asset Type	FY18 Actuals	2019 Target
Revenue Vehicles			
Age—Percent of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	Articulated Bus	0%	0%
	Bus	19%	20%
	Minibus	100%	100%
	Cutaway Bus	25%	25%
	Minivan	30%	30%
	Trolleybus[1]	100%	100%
Equipment			
Age—Percent of vehicles that have met or exceeded their Useful Life Benchmark (ULB)	Automobiles	30%	25%
	Trucks and Other Rubber Tire Vehicles	31%	25%
Facilities			
Condition—Percent of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale	Administrative and Maintenance	25%	25%
	Passenger and Parking	0%	0%

[1] PVTA does not plan to replace their Trolleybuses, these vehicles are used only for special events, not for regular service.

8.0 Implementation Strategy

8.1 Implementation Strategy

As detailed in Sections 4 and 5, PVTA expects to implement their TAM plan through a range of activities in close coordination with their operators, vendors, local municipalities, University partners, the Pioneer Valley Metropolitan Planning Organization (PVPC), MassDOT and the FTA.

8.2 Evaluation Plan

PVTA considers this TAM plan a “living document” and therefore on an annual basis, in July and August, PVTA will update its TAM plan, including verifying the data in their asset inventory. At the same time, PVTA will conduct annual facility condition inspections and update their TAM performance measures and targets. Completing these steps in the July and August timeframe aligns well with PVTA’s fiscal year and annual audit. It will also ensure that PVTA collects all of the necessary information to inform their annual capital planning process and in advance of the October NTD submission deadline.

Appendix A. Asset Inventory

Table A.1 Rolling Stock

Asset class	Asset Name	Make	Model	ID/Serial Number	In Service Date	Vehicle Mileage	Replacement Cost (PVTA)
Trolleybus (TB)	1192	CCI—Chance Bus Inc. (formerly Chance Manufacturing Company/CHI)	New Flyer Ikarus AH28	1C9S2HFS11W535213	3/1/2001	45,733	$468,841.00
Trolleybus (TB)	1193	CCI—Chance Bus Inc. (formerly Chance Manufacturing Company/CHI)	New Flyer Ikarus AH28	1C9S2HFS31W535214	3/1/2001	48,000	$468,841.00
Bus (BU)	1310	GIL—Gillig Corporation	Low Floor Bus	15GGD191951072877	6/30/2005	195,270	$668,657.00
Bus (BU)	1618	GIL—Gillig Corporation	Low Floor Bus	15GGD291461076813	6/27/2006	297,475	$440,492.00
Bus (BU)	1619	GIL—Gillig Corporation	Low Floor Bus	15GGD291661076814	6/27/2006	326,274	$440,492.00
Bus (BU)	1620	GIL—Gillig Corporation	Low Floor Bus	15GGD291861076815	6/27/2006	332,870	$440,492.00
Bus (BU)	1621	GIL—Gillig Corporation	Low Floor Bus	15GGD291X61076816	6/27/2006	347,669	$440,492.00
Bus (BU)	3201	GIL—Gillig Corporation	Low Floor Bus	15GGD291361076818	6/27/2006	369,392	$440,492.00
Bus (BU)	3202	GIL—Gillig Corporation	Low Floor Bus	15GGD291561076819	6/27/2006	423,230	$440,492.00
Bus (BU)	3203	GIL—Gillig Corporation	Low Floor Bus	15GGD291161076820	6/27/2006	435,784	$440,492.00
Bus (BU)	3204	GIL—Gillig Corporation	Low Floor Bus	15GGD291361076821	6/27/2006	392,481	$440,492.00
Bus (BU)	3205	GIL—Gillig Corporation	Low Floor Bus	15GGD291561076822	6/27/2006	287,266	$440,492.00
Bus (BU)	7604	GIL—Gillig Corporation	Low Floor Bus	15GGD291161076817	6/27/2006	390,993	$440,492.00
Minibus (MB)	1401	GIL—Gillig Corporation	Low Floor Bus	15GGE291061091130	4/13/2006	282,516	$368,231.26
Minibus (MB)	1402	GIL—Gillig Corporation	Low Floor Bus	15GGE291261091131	5/23/2006	296,910	$368,231.26
Minibus (MB)	1403	GIL—Gillig Corporation	Low Floor Bus	15GGE291461091132	5/23/2006	300,824	$368,231.26
Minibus (MB)	1404	GIL—Gillig Corporation	Low Floor Bus	15GGE291661091133	5/23/2006	294,670	$368,231.26
Minibus (MB)	1405	GIL—Gillig Corporation	Low Floor Bus	15GGE291861091134	5/23/2006	301,222	$368,231.26
Minibus (MB)	1406	GIL—Gillig Corporation	Low Floor Bus	15GGE291X61091135	5/23/2006	308,741	$368,231.26
Minibus (MB)	1407	GIL—Gillig Corporation	Low Floor Bus	15GGE291161091136	5/23/2006	300,914	$368,231.26
Minibus (MB)	7401	GIL—Gillig Corporation	Low Floor Bus	15GGE291361091137	6/13/2006	410,570	$368,231.26
Minibus (MB)	7402	GIL—Gillig Corporation	Low Floor Bus	15GGE291561091138	5/23/2006	387,387	$368,231.26
Minibus (MB)	7403	GIL—Gillig Corporation	Low Floor Bus	15GGE291761091139	6/13/2006	427,080	$368,231.26

Asset class	Asset Name	Make	Model	ID/Serial Number	In Service Date	Vehicle Mileage	Replacement Cost (PVTA)
Bus (BU)	1508	GIL—Gillig Corporation	Low Floor Bus	15GGB291461076803	6/13/2006	381,135	$434,503.00
Bus (BU)	1509	GIL—Gillig Corporation	Low Floor Bus	15GGB291661076804	6/13/2006	407,536	$434,503.00
Bus (BU)	1510	GIL—Gillig Corporation	Low Floor Bus	15GGB291861076805	6/13/2006	272,719	$434,503.00
Bus (BU)	1511	GIL—Gillig Corporation	Low Floor Bus	15GGB291X61076806	6/13/2006	421,516	$434,503.00
Bus (BU)	1512	GIL—Gillig Corporation	Low Floor Bus	15GGB291161076807	6/13/2006	396,305	$434,503.00
Bus (BU)	1513	GIL—Gillig Corporation	Low Floor Bus	15GGB291361076808	6/13/2006	387,122	$434,503.00
Bus (BU)	1514	GIL—Gillig Corporation	Low Floor Bus	15GGB291561076809	6/13/2006	387,591	$434,503.00
Bus (BU)	1515	GIL—Gillig Corporation	Low Floor Bus	15GGB291161076810	6/13/2006	395,141	$434,503.00
Bus (BU)	1516	GIL—Gillig Corporation	Low Floor Bus	15GGB291361076811	6/13/2006	396,543	$434,503.00
Bus (BU)	1517	GIL—Gillig Corporation	Low Floor Bus	15GGB291561076812	6/13/2006	455,516	$434,503.00
Bus (BU)	1630	GIL—Gillig Corporation	Low Floor Bus	15GGD291371077520	3/23/2007	300,461	$440,492.00
Bus (BU)	1631	GIL—Gillig Corporation	Low Floor Bus	15GGD291571077521	3/23/2007	336,855	$440,492.00
Bus (BU)	1632	GIL—Gillig Corporation	Low Floor Bus	15GGD291771077522	3/23/2007	323,999	$440,492.00
Bus (BU)	1633	GIL—Gillig Corporation	Low Floor Bus	15GGD291971077523	3/23/2007	432,074	$440,492.00
Bus (BU)	1634	GIL—Gillig Corporation	Low Floor Bus	15GGD291071077524	3/23/2007	313,286	$440,492.00
Bus (BU)	1635	GIL—Gillig Corporation	Low Floor Bus	15GGD291271077525	3/23/2007	325,491	$440,492.00
Bus (BU)	1636	GIL—Gillig Corporation	Low Floor Bus	15GGD291471077526	3/23/2007	351,077	$440,492.00
Bus (BU)	3211	GIL—Gillig Corporation	Low Floor Bus	15GGD291871077528	3/23/2007	421,376	$440,492.00
Bus (BU)	3212	GIL—Gillig Corporation	Low Floor Bus	15GGD291X71077529	3/23/2007	383,880	$440,492.00
Bus (BU)	3213	GIL—Gillig Corporation	Low Floor Bus	15GGD291671077530	3/23/2007	395,336	$440,492.00
Bus (BU)	3214	GIL—Gillig Corporation	Low Floor Bus	15GGD291871077531	3/23/2007	409,464	$440,492.00
Bus (BU)	3215	GIL—Gillig Corporation	Low Floor Bus	15GGD291X71077532	3/23/2007	392,103	$440,492.00
Bus (BU)	7610	GIL—Gillig Corporation	Low Floor Bus	15GGD291671077527	3/23/2007	399,932	$440,492.00
Bus (BU)	1640	GIL—Gillig Corporation	Low Floor Bus	15GGD271481078700	3/7/2008	326,212	$440,492.00
Bus (BU)	1641	GIL—Gillig Corporation	Low Floor Bus	15GGD271681078701	3/7/2008	279,275	$440,492.00
Bus (BU)	1642	GIL—Gillig Corporation	Low Floor Bus	15GGD271881078702	3/7/2008	296,917	$440,492.00
Bus (BU)	1643	GIL—Gillig Corporation	Low Floor Bus	15GGD271X81078703	3/24/2008	283,662	$440,492.00

Asset class	Asset Name	Make	Model	ID/Serial Number	In Service Date	Vehicle Mileage	Replacement Cost (PVTA)
Bus (BU)	1644	GIL—Gillig Corporation	Low Floor Bus	15GGD271181078704	3/24/2008	289,480	$440,492.00
Bus (BU)	1645	GIL—Gillig Corporation	Low Floor Bus	15GGD271381078705	3/24/2008	289,903	$440,492.00
Bus (BU)	1646	GIL—Gillig Corporation	Low Floor Bus	15GGD271581078706	3/7/2008	300,796	$440,492.00
Bus (BU)	1647	GIL—Gillig Corporation	Low Floor Bus	15GGD271781078707	3/24/2008	282,815	$440,492.00
Bus (BU)	1648	GIL—Gillig Corporation	Low Floor Bus	15GGD271981078708	3/24/2008	320,978	$440,492.00
Bus (BU)	1649	GIL—Gillig Corporation	Low Floor Bus	15GGD271081078709	3/24/2008	234,425	$440,492.00
Bus (BU)	3221	GIL—Gillig Corporation	Low Floor Bus	15GGD271781078710	3/24/2008	353,999	$440,492.00
Bus (BU)	3222	GIL—Gillig Corporation	Low Floor Bus	15GGD271981078711	3/24/2008	309,938	$440,492.00
Bus (BU)	3223	GIL—Gillig Corporation	Low Floor Bus	15GGD271081078712	3/24/2008	342,228	$440,492.00
Bus (BU)	3224	GIL—Gillig Corporation	Low Floor Bus	15GGD271281078713	3/24/2008	298,958	$440,492.00
Bus (BU)	3225	GIL—Gillig Corporation	Low Floor Bus	15GGD271481078714	3/24/2008	320,884	$440,492.00
Bus (BU)	1550	GIL—Gillig Corporation	Low Floor Bus	15GGB271981078715	10/3/2008	407,411	$434,503.00
Bus (BU)	1551	GIL—Gillig Corporation	Low Floor Bus	15GGB271081078716	10/10/2008	300,948	$434,503.00
Bus (BU)	1552	GIL—Gillig Corporation	Low Floor Bus	15GGB271281078717	10/3/2008	279,343	$434,503.00
Bus (BU)	1553	GIL—Gillig Corporation	Low Floor Bus	15GGB271481078718	9/29/2008	339,734	$434,503.00
Bus (BU)	1554	GIL—Gillig Corporation	Low Floor Bus	15GGB271681078719	9/29/2008	295,799	$434,503.00
Bus (BU)	1555	GIL—Gillig Corporation	Low Floor Bus	15GGB271281078720	9/29/2008	254,003	$434,503.00
Bus (BU)	1556	GIL—Gillig Corporation	Low Floor Bus	15GGB271481078721	9/29/2008	315,839	$434,503.00
Bus (BU)	1557	GIL—Gillig Corporation	Low Floor Bus	15GGB271681078722	10/3/2008	466,506	$434,503.00
Bus (BU)	1558	GIL—Gillig Corporation	Low Floor Bus	15GGB271881078723	10/3/2008	461,416	$434,503.00
Bus (BU)	1559	GIL—Gillig Corporation	Low Floor Bus	15GGB271X81078724	10/3/2008	297,726	$434,503.00
Bus (BU)	1560	GIL—Gillig Corporation	Low Floor Bus	15GGB271181078725	10/3/2008	361,304	$434,503.00
Bus (BU)	1561	GIL—Gillig Corporation	Low Floor Bus	15GGB271381078726	10/10/2008	345,710	$434,503.00
Bus (BU)	1562	GIL—Gillig Corporation	Low Floor Bus	15GGB271581078727	10/10/2008	324,004	$434,503.00
Bus (BU)	7550	GIL—Gillig Corporation	Low Floor Bus	15GGB271981078729	10/10/2008	325,635	$434,503.00
Bus (BU)	7551	GIL—Gillig Corporation	Low Floor Bus	15GGB271781078728	10/10/2008	306,752	$434,503.00
Bus (BU)	1565	GIL—Gillig Corporation	Low Floor Bus	15GGB2719A1178268	10/22/2010	251,730	$434,503.00

Asset class	Asset Name	Make	Model	ID/Serial Number	In Service Date	Vehicle Mileage	Replacement Cost (PVTA)
Bus (BU)	3226	GIL—Gillig Corporation	Low Floor Bus	15GGD271291176996	6/5/2009	327,196	$440,492.00
Bus (BU)	3227	GIL—Gillig Corporation	Low Floor Bus	15GGD271491176997	6/5/2009	302,766	$440,492.00
Bus (BU)	3228	GIL—Gillig Corporation	Low Floor Bus	15GGD271691176998	6/5/2009	330,892	$440,492.00
Bus (BU)	7660	GIL—Gillig Corporation	Low Floor Bus	15GGD271791176993	6/5/2009	367,939	$440,492.00
Bus (BU)	7661	GIL—Gillig Corporation	Low Floor Bus	15GGD271991176994	6/5/2009	354,509	$440,492.00
Bus (BU)	7662	GIL—Gillig Corporation	Low Floor Bus	15GGD271091176995	6/5/2009	348,903	$440,492.00
Cutaway Bus (CU)	1202	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type D	1FDFE45S99DA26496		74,601	$75,941.00
Bus (BU)	1563	GIL—Gillig Corporation	Low Floor Bus	15GGB2715A1178266	10/26/2010	215,684	$434,503.00
Bus (BU)	1564	GIL—Gillig Corporation	Low Floor Bus	15GGB2717A1178267	10/26/2010	244,666	$434,503.00
Bus (BU)	1566	GIL—Gillig Corporation	Low Floor Bus	15GGB2710A1178269	10/26/2010	334,581	$434,503.00
Bus (BU)	1567	GIL—Gillig Corporation	Low Floor Bus	15GGB2717A1178270	10/26/2010	236,619	$434,503.00
Bus (BU)	1568	GIL—Gillig Corporation	Low Floor Bus	15GGB2719A1178271	10/26/2010	217,939	$434,503.00
Bus (BU)	1569	GIL—Gillig Corporation	Low Floor Bus	15GGB2710A1178272	10/26/2010	238,643	$434,503.00
Bus (BU)	1571	GIL—Gillig Corporation	Low Floor Bus	15GGB2714A1178274	10/26/2010	186,677	$434,503.00
Bus (BU)	1572	GIL—Gillig Corporation	Low Floor Bus	15GGB2716A1178275	10/26/2010	242,129	$434,503.00
Bus (BU)	1573	GIL—Gillig Corporation	Low Floor Bus	15GGB2718A1178276	10/26/2010	212,275	$434,503.00
Bus (BU)	1574	GIL—Gillig Corporation	Low Floor Bus	15GGB271XA1178277	10/26/2010	207,655	$434,503.00
Bus (BU)	1575	GIL—Gillig Corporation	Low Floor Bus	15GGB2711A1178278	10/26/2010	225,021	$434,503.00
Bus (BU)	1576	GIL—Gillig Corporation	Low Floor Bus	15GGB2713A1178279	10/26/2010	232,875	$434,503.00
Bus (BU)	1577	GIL—Gillig Corporation	Low Floor Bus	15GGB271XA1178280	10/26/2010	222,553	$434,503.00
Bus (BU)	1578	GIL—Gillig Corporation	Low Floor Bus	15GGB2711A1178281	10/26/2010	232,911	$434,503.00
Bus (BU)	1570 (7552)	GIL—Gillig Corporation	Low Floor Bus	15GGB2712A1178273	10/26/2010	253,123	$434,503.00
Bus (BU)	1650	GIL—Gillig Corporation	Low Floor Bus	15GGD2710A1178251	9/27/2010	203,855	$440,492.00
Bus (BU)	1651	GIL—Gillig Corporation	Low Floor Bus	15GGD2712A1178252	9/27/2010	200,643	$440,492.00
Bus (BU)	1652	GIL—Gillig Corporation	Low Floor Bus	15GGD2714A1178253	9/27/2010	219,901	$440,492.00

Asset class	Asset Name	Make	Model	ID/Serial Number	In Service Date	Vehicle Mileage	Replacement Cost (PVTA)
Bus (BU)	1653	GIL—Gillig Corporation	Low Floor Bus	15GGD2716A1178254	9/27/2010	203,192	$440,492.00
Bus (BU)	1654	GIL—Gillig Corporation	Low Floor Bus	15GGD2718A1178255	9/27/2010	202,154	$440,492.00
Bus (BU)	1655	GIL—Gillig Corporation	Low Floor Bus	15GGD271XA1178256	9/27/2010	207,746	$440,492.00
Bus (BU)	1656	GIL—Gillig Corporation	Low Floor Bus	15GGD2711A1178257	9/27/2010	236,644	$440,492.00
Bus (BU)	1657	GIL—Gillig Corporation	Low Floor Bus	15GGD2713A1178258	9/30/2010	299,383	$440,492.00
Bus (BU)	1658	GIL—Gillig Corporation	Low Floor Bus	15GGD2715A1178259	9/30/2010	224,151	$440,492.00
Bus (BU)	1659	GIL—Gillig Corporation	Low Floor Bus	15GGD2711A1178260	9/30/2010	206,709	$440,492.00
Bus (BU)	1660	GIL—Gillig Corporation	Low Floor Bus	15GGD2713A1178261	9/30/2010	291,962	$440,492.00
Bus (BU)	1661	GIL—Gillig Corporation	Low Floor Bus	15GGD2715A1178262	9/30/2010	224,264	$440,492.00
Bus (BU)	1662	GIL—Gillig Corporation	Low Floor Bus	15GGD2717A1178263	9/30/2010	212,310	$440,492.00
Bus (BU)	1663	GIL—Gillig Corporation	Low Floor Bus	15GGD2719A1178264	11/10/2010	246,032	$440,492.00
Bus (BU)	1664	GIL—Gillig Corporation	Low Floor Bus	15GGD2710A1178265	11/10/2010	243,131	$440,492.00
Bus (BU)	1701	NFA—New Flyer of America	Xcelsior XD35	5FYD8KV19BB039975	1/11/2012	231,739	$434,503.00
Bus (BU)	3306	NFA—New Flyer of America	Xcelsior XD35	5FYD8KV1XBB039905	12/2/2011	159,887	$434,503.00
Bus (BU)	3307	NFA—New Flyer of America	Xcelsior XD35	5FYD8KV11BB039906	12/2/2011	173,099	$434,503.00
Bus (BU)	3308	NFA—New Flyer of America	Xcelsior XD35	5FYD8KV13BB039907	12/2/2011	194,416	$434,503.00
Bus (BU)	3309	NFA—New Flyer of America	Xcelsior XD35	5FYD8KV15BB039908	12/2/2011	177,355	$434,503.00
Bus (BU)	3310	NFA—New Flyer of America	Xcelsior XD35	5FYD8KV17BB039909	12/2/2011	147,915	$434,503.00
Bus (BU)	1801	NFA—New Flyer of America	Xcelsior XDE40	5FYH8FR1XBB039583	11/18/2011	213,607	$440,492.00
Bus (BU)	1802	NFA—New Flyer of America	Xcelsior XDE40	5FYH8FR11BB039584	12/22/2011	267,563	$440,492.00
Bus (BU)	1803	NFA—New Flyer of America	Xcelsior XDE40	5FYH8FR13BB039585	12/22/2011	242,150	$440,492.00
Bus (BU)	1804	NFA—New Flyer of America	Xcelsior XDE40	5FYH8FR15BB039586	11/18/2011	239,299	$440,492.00
Bus (BU)	1805	NFA—New Flyer of America	Xcelsior XDE40	5FYH8FR17BB039587	1/11/2012	223,759	$440,492.00
Bus (BU)	3301	NFA—New Flyer of America	Xcelsior XDE40	5FYH8FR19BB039588	12/2/2011	216,971	$440,492.00
Bus (BU)	3302	NFA—New Flyer of America	Xcelsior XDE40	5FYH8FR10BB039589	12/14/2011	222,107	$440,492.00
Bus (BU)	3303	NFA—New Flyer of America	Xcelsior XDE40	5FYH8FR17BB039590	12/14/2011	225,511	$440,492.00
Bus (BU)	3304	NFA—New Flyer of America	Xcelsior XDE40	5FYH8FR19BB039591	1/11/2012	224,389	$440,492.00

Asset class	Asset Name	Make	Model	ID/Serial Number	In Service Date	Vehicle Mileage	Replacement Cost (PVTA)
Bus (BU)	3305	NFA—New Flyer of America	Xcelsior XDE40	5FYH8FR10BB039592	1/11/2012	229,307	$440,492.00
Bus (BU)	1810	NFA—New Flyer of America	Xcelsior XD40	5FYH8FV12BB039629	11/18/2011	231,641	$440,492.00
Bus (BU)	1811	NFA—New Flyer of America	Xcelsior XD40	5FYH8FV19BB039630	11/18/2011	228,710	$440,492.00
Bus (BU)	1812	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV10BB039631	1/11/2012	236,432	$440,492.00
Bus (BU)	1813	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV12BB039632	6/30/2011	224,251	$440,492.00
Bus (BU)	1814	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV14BB039633	12/2/2011	231,052	$440,492.00
Bus (BU)	1815	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV16BB039634	11/18/2011	232,868	$440,492.00
Bus (BU)	1816	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV18BB039635	11/18/2011	225,976	$440,492.00
Bus (BU)	1817	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV1XBB039636	11/18/2011	243,854	$440,492.00
Bus (BU)	1818	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV11BB039637	12/2/2011	229,007	$440,492.00
Bus (BU)	1819	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV13BB039638	12/2/2011	187,245	$440,492.00
Bus (BU)	7801	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV10BB039628	11/18/2011	254,867	$440,492.00
Bus (BU)	7802	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV15BB039639	12/2/2011	255,311	$440,492.00
Cutaway Bus (CU)	5574	STR—Starcraft	ST2910C	1FDFE4FSXBDB22738		71,609	$75,941.00
Bus (BU)	1821	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV19CB040620	6/22/2012	220,580	$440,492.00
Bus (BU)	1822	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV10CB040621	6/25/2012	221,101	$440,492.00
Bus (BU)	1823	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV12CB040622	6/22/2012	219,918	$440,492.00
Bus (BU)	1824	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV14CB040623	6/25/2012	205,167	$440,492.00
Bus (BU)	1825	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV16CB040624	6/25/2012	200,026	$440,492.00
Bus (BU)	1826	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV18CB040625	6/25/2012	218,841	$440,492.00
Bus (BU)	7811	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV15CB040615	6/22/2012	226,725	$440,492.00
Bus (BU)	7812	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV17CB040616	6/22/2012	227,521	$440,492.00
Bus (BU)	7813	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV19CB040617	6/13/2012	217,541	$440,492.00
Bus (BU)	7814	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV10CB040618	6/22/2012	220,472	$440,492.00
Bus (BU)	7815	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV12CB040619	6/22/2012	205,989	$440,492.00

Asset class	Asset Name	Make	Model	ID/Serial Number	In Service Date	Vehicle Mileage	Replacement Cost (PVTA)
Minivan (MV)	5605	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL5DDA72638	6/13/2013	158,533	$59,594.00
Minivan (MV)	5616	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FLXDDA93002	1/13/2014	156,369	$59,594.00
Minivan (MV)	5618	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL1DDB03285	1/13/2014	130,217	$59,594.00
Minivan (MV)	5621	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL1DDA93003	1/13/2014	135,149	$59,594.00
Minivan (MV)	5625	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL2DDA93009	1/13/2014	130,368	$59,594.00
Minivan (MV)	5628	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL5DDB19294	1/13/2014	135,591	$59,594.00
Minivan (MV)	5629	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL9DDB16060	1/13/2014	147,734	$59,594.00
Minivan (MV)	5631	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL3DDB19293	1/13/2014	137,624	$59,594.00
Minivan (MV)	5632	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL8DDB19290	1/13/2014	141,517	$59,594.00
Minivan (MV)	5633	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL7DDB19295	1/13/2014	136,953	$59,594.00
Minivan (MV)	5634	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL2DDB16059	1/13/2014	126,178	$59,594.00
Minivan (MV)	5635	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL9DDB19296	1/13/2014	137,089	$59,594.00
Minivan (MV)	5637	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL2DDB19298	1/13/2014	152,060	$59,594.00
Minivan (MV)	5638	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL0DDB19297	1/13/2014	139,212	$59,594.00
Articulated Bus (AB)	3401	NFA—New Flyer of America	Xcelsior XD60	5FYH8YU19DB041962	6/13/2013	134,885	$1,098,068.33
Articulated Bus (AB)	3402	NFA—New Flyer of America	Xcelsior XD60	5FYH8YU10DB041963	6/13/2013	139,376	$1,098,068.33

Asset class	Asset Name	Make	Model	ID/Serial Number	In Service Date	Vehicle Mileage	Replacement Cost (PVTA)
Articulated Bus (AB)	7901	NFA—New Flyer of America	Xcelsior XD60	5FYH8YU15DB041960	6/13/2013	123,194	$1,098,068.33
Articulated Bus (AB)	7902	NFA—New Flyer of America	Xcelsior XD60	5FYH8YU17DB041961	6/13/2013	137,312	$1,098,068.33
Minivan (MV)	5639	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL4EDA34318	6/30/2014	111,358	$59,594.00
Minivan (MV)	5640	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL6EDA34319	6/30/2014	98,514	$59,594.00
Minivan (MV)	5641	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL2EDA34320	6/30/2014	96,131	$59,594.00
Minivan (MV)	5642	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL4EDA34321	6/30/2014	174,261	$59,594.00
Minivan (MV)	5643	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL6EDA34322	6/30/2014	115,366	$59,594.00
Minivan (MV)	5645	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FLXEDA34324	6/30/2014	128,282	$59,594.00
Minivan (MV)	5647	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL3EDA34326	6/30/2014	131,439	$59,594.00
Minivan (MV)	5648	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL5EDA34327	6/30/2014	140,162	$59,594.00
Minivan (MV)	5649	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL7EDA34328	6/30/2014	123,507	$59,594.00
Minivan (MV)	5650	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL9EDA34329	6/30/2014	133,221	$59,594.00
Bus (BU)	3311	NFA—New Flyer of America	Xcelsior XD35	5FYD8KV16EB045124	8/28/2014	111,783	$434,503.00
Bus (BU)	3312	NFA—New Flyer of America	Xcelsior XD35	5FYD8KV18EB045125	8/28/2014	108,208	$434,503.00
Bus (BU)	3313	NFA—New Flyer of America	Xcelsior XD35	5FYD8KV1XEB045126	9/9/2014	100,416	$434,503.00
Bus (BU)	3314	NFA—New Flyer of America	Xcelsior XD35	5FYD8KV11EB045127	9/9/2014	101,920	$434,503.00
Bus (BU)	3315	NFA—New Flyer of America	Xcelsior XD35	5FYD8KV13EB045128	9/9/2014	104,925	$434,503.00
Bus (BU)	1830	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV15EB044988	7/28/2014	166,110	$440,492.00
Bus (BU)	1831	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV17EB044989	7/28/2014	67,066	$440,492.00

Asset class	Asset Name	Make	Model	ID/Serial Number	In Service Date	Vehicle Mileage	Replacement Cost (PVTA)
Bus (BU)	1832	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV13EB044990	8/21/2014	128,333	$440,492.00
Bus (BU)	1833	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV15EB044991	8/21/2014	150,042	$440,492.00
Bus (BU)	1834	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV17EB044992	8/21/2014	158,013	$440,492.00
Bus (BU)	1835	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV19EB044993	8/21/2014	145,987	$440,492.00
Bus (BU)	1836	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV10EB044994	8/21/2014	140,745	$440,492.00
Bus (BU)	1837	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV12EB044995	8/21/2014	156,241	$440,492.00
Minivan (MV)	5651	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL7FDA34783	6/30/2015	82,240	$59,594.00
Minivan (MV)	5652	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL3FDA34781	6/30/2015	63,183	$59,594.00
Minivan (MV)	5653	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL5FDA34779	6/30/2015	62,209	$59,594.00
Minivan (MV)	5654	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL5FDA34782	6/30/2015	64,482	$59,594.00
Minivan (MV)	5655	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL1FDA34777	6/30/2015	68,079	$59,594.00
Minivan (MV)	5656	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FLXFDA34793	6/30/2015	69,247	$59,594.00
Minivan (MV)	5657	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL5FDA34796	6/30/2015	85,289	$59,594.00
Minivan (MV)	5658	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL1FDA34780	6/30/2015	64,775	$59,594.00
Minivan (MV)	5659	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL3FDA34778	6/30/2015	92,668	$59,594.00
Minivan (MV)	5660	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL2FDA34786	6/30/2015	71,970	$59,594.00
Minivan (MV)	5661	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL4FDA34787	6/30/2015	85,301	$59,594.00
Minivan (MV)	5662	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL6FDA34788	6/30/2015	79,520	$59,594.00

Asset class	Asset Name	Make	Model	ID/Serial Number	In Service Date	Vehicle Mileage	Replacement Cost (PVTA)
Minivan (MV)	5663	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL8FDA34789	6/30/2015	76,992	$59,594.00
Minivan (MV)	5664	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL4FDA34790	6/30/2015	75,170	$59,594.00
Minivan (MV)	5666	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL8FDA34792	6/30/2015	71,562	$59,594.00
Minivan (MV)	5667	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL9FDA34784	6/30/2015	61,837	$59,594.00
Minivan (MV)	5668	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL1FDA34794	6/30/2015	64,390	$59,594.00
Minivan (MV)	5669	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL3FDA34795	6/30/2015	64,913	$59,594.00
Minivan (MV)	5670	EBC—ElDorado Bus (EBC Inc.)	Aerolite	1FDEE3FL0FDA34785	6/30/2015	76,223	$59,594.00
Bus (BU)	1840	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV13FF046443	7/16/2015	124,122	$440,492.00
Bus (BU)	1841	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV15FF046444	7/16/2015	131,922	$440,492.00
Bus (BU)	1842	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV17FF046445	7/16/2015	123,396	$440,492.00
Bus (BU)	1843	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV19FF046446	7/16/2015	136,602	$440,492.00
Bus (BU)	1844	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV10FF046447	7/16/2015	137,506	$440,492.00
Bus (BU)	1845	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV12FF046448	7/16/2015	131,133	$440,492.00
Bus (BU)	1846	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV14FF046449	7/16/2015	139,018	$440,492.00
Bus (BU)	1847	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV10FF046450	7/16/2015	138,882	$440,492.00
Bus (BU)	1848	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV12FF046451	7/16/2015	138,685	$440,492.00
Bus (BU)	1849	NFA—New Flyer of America	Xcelsior XD40	5FYD8FV14FF046452	7/16/2015	141,813	$440,492.00
Cutaway Bus (CU)	6503 (1204)	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type D	1FDFE4FS3FDA19697	6/30/2015	96,301	$75,941.00
Cutaway Bus (CU)	6504 (1205)	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type D	1FDFE4FS5FDA19698	6/30/2015	29,259	$75,941.00
Bus (BU)	1710	NFA—New Flyer of America	Xcelsior XD35	5FYD8KV14FF046637	8/19/2015	127,042	$434,503.00
Bus (BU)	1711	NFA—New Flyer of America	Xcelsior XD35	5FYD8KV16FF046638	8/19/2015	127,620	$434,503.00

Asset class	Asset Name	Make	Model	ID/Serial Number	In Service Date	Vehicle Mileage	Replacement Cost (PVTA)
Bus (BU)	1712	NFA—New Flyer of America	Xcelsior XD35	5FYD8KV18FF046639	8/19/2015	131,571	$434,503.00
Bus (BU)	1713	NFA—New Flyer of America	Xcelsior XD35	5FYD8KV14FF046640	8/19/2015	132,470	$434,503.00
Bus (BU)	1714	NFA—New Flyer of America	Xcelsior XD35	5FYD8KV16FF046641	8/19/2015	134,011	$434,503.00
Minivan (MV)	5671	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL5GDC05855	8/3/2015	92,247	$59,594.00
Minivan (MV)	5672	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL7GDC05856	8/3/2015	97,976	$59,594.00
Minivan (MV)	5673	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL9GDC05857	8/3/2015	81,042	$59,594.00
Minivan (MV)	5674	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL0GDC05858	8/5/2015	86,009	$59,594.00
Minivan (MV)	5675	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL2GDC05859	8/5/2015	91,575	$59,594.00
Minivan (MV)	5676	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL9GDC05860	8/5/2015	91,415	$59,594.00
Minivan (MV)	5677	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL0GDC05861	8/5/2015	93,000	$59,594.00
Minivan (MV)	5678	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL2GDC05862	8/5/2015	69,475	$59,594.00
Minivan (MV)	5679	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL4GDC05863	8/7/2015	84,350	$59,594.00
Minivan (MV)	5680	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL6GDC05864	8/7/2015	77,590	$59,594.00
Minivan (MV)	5683	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL2GDC18904	6/30/2016	60,138	$59,594.00
Minivan (MV)	5684	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FL4GDC22467	6/30/2016	67,724	$59,594.00
Minivan (MV)	5685	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS6GDC49046	6/30/2016	40,551	$59,594.00
Minivan (MV)	5686	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS4GDC50244	6/30/2016	50,655	$59,594.00

Asset class	Asset Name	Make	Model	ID/Serial Number	In Service Date	Vehicle Mileage	Replacement Cost (PVTA)
Minivan (MV)	5687	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS6GDC50245	6/30/2016	59,143	$59,594.00
Minivan (MV)	5688	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS8GDC50246	6/30/2016	60,966	$59,594.00
Minivan (MV)	5689	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FSXGDC50247	6/30/2016	52,447	$59,594.00
Minivan (MV)	5690	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS1GDC50248	6/30/2016	63,224	$59,594.00
Minivan (MV)	5691	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS4GDC54973	6/30/2016	67,759	$59,594.00
Minivan (MV)	5700	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS5GDC54982	6/30/2016	66,909	$59,594.00
Minivan (MV)	5701	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS7GDC54983	6/30/2016	68,930	$59,594.00
Minivan (MV)	5702	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS9GDC54984	6/30/2016	68,634	$59,594.00
Minivan (MV)	5892 (5692)	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS6GDC54974	6/30/2016	62,750	$59,594.00
Minivan (MV)	5893 (5693)	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS8GDC54975	6/30/2016	63,051	$59,594.00
Minivan (MV)	5895 (5695)	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS1GDC54977	6/30/2016	60,252	$59,594.00
Minivan (MV)	5896 (5696)	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS3GDC54978	6/30/2016	63,752	$59,594.00
Minivan (MV)	5897 (5697)	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS5GDC54979	6/30/2016	58,768	$59,594.00
Minivan (MV)	5898 (5698)	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS1GDC54980	6/30/2016	65,421	$59,594.00
Minivan (MV)	5899 (5699)	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS3GDC54981	6/30/2016	73,578	$59,594.00
Cutaway Bus (CU)	1206	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type D	1FDFE4FS2GDC02784	6/30/2015	133,250	$75,941.00

Asset class	Asset Name	Make	Model	ID/Serial Number	In Service Date	Vehicle Mileage	Replacement Cost (PVTA)
Cutaway Bus (CU)	1207	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type D	1FDFE4FS4GDC02785	6/30/2015	137,304	$75,941.00
Bus (BU)	1410	PRO—Proterra Inc.	BE40	1M9TH16J3GS816109	6/30/2016	26,290	$739,000.00
Bus (BU)	1411	PRO—Proterra Inc.	BE40	1M9TH16JXGS816110	6/30/2016	32,358	$739,000.00
Bus (BU)	1412	PRO—Proterra Inc.	BE40	1M9TH16J1GS816111	6/30/2016	28,872	$739,000.00
Minivan (MV)	5703	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS2HDC29247	6/30/2017	39,572	$59,594.00
Minivan (MV)	5704	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS4HDC29248	6/30/2017	29,092	$59,594.00
Minivan (MV)	5705	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS6HDC29249	6/30/2017	29,224	$59,594.00
Minivan (MV)	5706	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS2HDC29250	6/30/2017	38,340	$59,594.00
Minivan (MV)	5707	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS4HDC29251	6/30/2017	27,363	$59,594.00
Minivan (MV)	5708	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS6HDC29252	6/30/2017	36,449	$59,594.00
Minivan (MV)	5709	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS8HDC29253	6/30/2017	37,496	$59,594.00
Minivan (MV)	5710	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FSXHDC29254	6/30/2017	29,131	$59,594.00
Minivan (MV)	5711	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS1HDC29255	6/30/2017	35,148	$59,594.00
Minivan (MV)	5712	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS3HDC29256	6/30/2017	31,961	$59,594.00
Minivan (MV)	5713	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS5HDC29257	6/30/2017	30,125	$59,594.00
Minivan (MV)	5714	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS7HDC29258	6/30/2017	36,785	$59,594.00
Minivan (MV)	5715	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS9HDC29259	6/30/2017	31,773	$59,594.00

Asset class	Asset Name	Make	Model	ID/Serial Number	In Service Date	Vehicle Mileage	Replacement Cost (PVTA)
Minivan (MV)	5716	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS5HDC29260	6/30/2017	30,164	$59,594.00
Minivan (MV)	5717	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS6HDC28389	6/30/2017	41,366	$59,594.00
Minivan (MV)	5718	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS4HDC33445	6/30/2017	41,641	$59,594.00
Minivan (MV)	5719	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS6HDC33446	6/30/2017	35,576	$59,594.00
Minivan (MV)	5720	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS8HDC33447	6/30/2017	24,347	$59,594.00
Minivan (MV)	5721	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FSXHDC33448	6/30/2017	28,866	$59,594.00
Minivan (MV)	5722	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS1HDC33449	6/30/2017	31,502	$59,594.00
Minivan (MV)	5723	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS8HDC33450	6/30/2017	37,311	$59,594.00
Minivan (MV)	5724	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FSXHDC33451	6/30/2017	31,061	$59,594.00
Minivan (MV)	5726	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS3HDC33453	6/30/2017	27,893	$59,594.00
Minivan (MV)	5727	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS5HDC33454	6/30/2017	24,454	$59,594.00
Minivan (MV)	5728	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS7HDC33455	6/30/2017	22,073	$59,594.00
Minivan (MV)	5729	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS9HDC33456	6/30/2017	28,581	$59,594.00
Minivan (MV)	5730	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS0HDC33457	6/30/2017	27,358	$59,594.00
Minivan (MV)	5731	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS2HDC33458	6/30/2017	24,976	$59,594.00
Minivan (MV)	5732	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS4HDC33459	6/30/2017	33,360	$59,594.00

Asset class	Asset Name	Make	Model	ID/Serial Number	In Service Date	Vehicle Mileage	Replacement Cost (PVTA)
Cutaway Bus (CU)	1208	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type D	1FDFE4FS5JDC04021	3/10/2018	11,634	$75,941.00
Cutaway Bus (CU)	1209	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type D	1FDFE4FS7JDC04022	3/10/2018	21,489	$75,941.00
Bus (BU)	1670	GIL—Gillig Corporation	Low Floor Bus	15GGD2714J3191296	5/25/2018	5,008	$440,492.00
Bus (BU)	1671	GIL—Gillig Corporation	Low Floor Bus	15GGD271XJ3191299	5/25/2018	7,507	$440,492.00
Bus (BU)	1672	GIL—Gillig Corporation	Low Floor Bus	15GGD2718J3191298	5/25/2018	6,518	$440,492.00
Bus (BU)	1673	GIL—Gillig Corporation	Low Floor Bus	15GGD2716J3191297	5/25/2018	7,708	$440,492.00
Minivan (MV)	5735	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F69JDC18545	5/7/2018	5,145	$59,594.00
Minivan (MV)	5736	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F60JDC18546	4/29/2018	2,844	$59,594.00
Minivan (MV)	5737	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F62JDC18547	4/29/2018	3,551	$59,594.00
Minivan (MV)	5738	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F63JDC17276	4/29/2018	3,243	$59,594.00
Minivan (MV)	5739	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F64JDC18548	5/7/2018	6,562	$59,594.00
Minivan (MV)	5740	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F66JDC18549	5/7/2018	5,282	$59,594.00
Minivan (MV)	5741	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F62JDC18550	5/7/2018	5,004	$59,594.00
Minivan (MV)	5742	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F64JDC18551	5/7/2018	5,152	$59,594.00
Minivan (MV)	5743	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F66JDC18552	5/7/2018	6,455	$59,594.00
Minivan (MV)	5744	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F68JDC18553	5/7/2018	6,593	$59,594.00
Minivan (MV)	5745	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F65JDC17277	5/7/2018	7,634	$59,594.00
Minivan (MV)	5746	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F6XJDC18554	6/5/2018	3,883	$59,594.00

Asset class	Asset Name	Make	Model	ID/Serial Number	In Service Date	Vehicle Mileage	Replacement Cost (PVTA)
Minivan (MV)	5747	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F61JDC18555	6/5/2018	3,633	$59,594.00
Minivan (MV)	5748	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F63JDC18556	6/5/2018	3,045	$59,594.00
Minivan (MV)	5749	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F67JDC17278	6/20/2018	2,457	$59,594.00
Minivan (MV)	5750	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F60JDC20751	6/20/2018	2,123	$59,594.00
Minivan (MV)	5751	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F62JDC20752	6/20/2018	3,298	$59,594.00
Minivan (MV)	5752	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F64JDC20753	6/20/2018	1,321	$59,594.00
Minivan (MV)	5753	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F66JDC20754	6/20/2018	1,007	$59,594.00
Minivan (MV)	5754	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F68JDC20755	6/20/2018	1,006	$59,594.00
Minivan (MV)	5755	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F6XJDC20756	6/20/2018	1,293	$59,594.00
Minivan (MV)	5756	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F61JDC20757	6/27/2018	1,505	$59,594.00
Minivan (MV)	5757	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F63JDC20758	6/20/2018	3,144	$59,594.00
Minivan (MV)	5758	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F65JDC20759	6/20/2018	2,132	$59,594.00
Minivan (MV)	5759	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F61JDC20760	6/5/2018	2,532	$59,594.00
Minivan (MV)	5760	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F63JDC20761	6/5/2018	2,415	$59,594.00
Minivan (MV)	5761	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F65JDC20762	6/5/2018	2,617	$59,594.00
Minivan (MV)	5762	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F67JDC20763	6/20/2018	1,781	$59,594.00

Asset class	Asset Name	Make	Model	ID/Serial Number	In Service Date	Vehicle Mileage	Replacement Cost (PVTA)
Minivan (MV)	5763	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1GDEE3F69JDC20764	6/20/2018	2,610	$59,594.00
Minivan (MV)	5764	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F60JDC20765	6/20/2018	1,516	$59,594.00
Minivan (MV)	5765	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F62JDC20766	6/20/2018	2,998	$59,594.00
Minivan (MV)	5766	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F64JDC20767	6/20/2018	2,467	$59,594.00
Minivan (MV)	5767	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F6XJDC22538	6/20/2018	1,385	$59,594.00
Minivan (MV)	5768	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F66JDC20768	6/20/2018	4,792	$59,594.00
Minivan (MV)	5769	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F68JDC20769	6/20/2018	500	$59,594.00
Minivan (MV)	5770	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F61JDC22539	6/20/2018	751	$59,594.00
Minivan (MV)	5771	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F68JDC22540	6/20/2018	1,802	$59,594.00
Minivan (MV)	5772	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F6JDC20770	6/20/2018	3,493	$59,594.00
Minivan (MV)	5773	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F66JDC20771	6/20/2018	1,800	$59,594.00
Minivan (MV)	5774	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3F68JDC20772	6/20/2018	1,349	$59,594.00
Minivan (MV)	5725	CEQ—Coach and Equipment Manufacturing Company	Phoenix Type E	1FDEE3FS1HDC33452	6/30/2017	40,986	$59,594.00

Table A.2 Facilities

Asset Class	Facility Name	City	Section of a Larger Facility	Year Built (or reconstructed as new)	Direct Capital Responsibility	Replacement Cost/Value
Administration - Administrative Office / Sales Office	Administration Building/Main Street Operations	Springfield	No	1897	Yes	$11,190,680
Maintenance - Maintenance Facility (Service and Inspection)	Cottage Street Fixed-Route Bus Operations & Maintenance Facility	Springfield	No	2018	Yes	$55,700,000
Passenger - Bus Transfer Center	Holyoke ITC Bays	Holyoke	Yes	2010	Yes	$11,440,000
Administration - Administrative Office / Sales Office	Holyoke ITC Info Center	Holyoke	Yes	1911	No	$6,100,000
Maintenance - General Purpose Maintenance Facility/Depot	National Express	Springfield	No	1927	No	
Maintenance - Maintenance Facility (Service and Inspection)	Northampton Bus Maintenance Facility (VATCo)	Northampton	No	1987	Yes	$3,713,426
Maintenance - Maintenance Facility (Service and Inspection)	PVTA Main Street Maintenance Garage (SATCo)	Springfield	Yes	1916	Yes	$8,978,500
Maintenance - Maintenance Facility (Service and Inspection)	PVTA Main Street Maintenance Garage (SATCo) Barn	Springfield	Yes	1983	Yes	$3,600,000
Administration - Administrative Office / Sales Office	Springfield Information Center	Springfield	No	2017	No	
Maintenance - Maintenance Facility (Service and Inspection)	UMass Bus Operations & Maintenance Facility/University Transit Services	Amherst	Yes	1979	Yes	$6,135,600
Maintenance - Maintenance Facility (Service and Inspection)	UMass Bus Operations & Maintenance Facility/University Transit Services - RTIC	Amherst	Yes	2009	Yes	
Passenger - Bus Transfer Center	Union Station Bays	Springfield	Yes	2017	No	N/A

Table A.3 Equipment—Service Vehicles

Type	Asset ID	Manufacturer	Model	VIN	In Service Year	Odometer Reading	Replacement Cost
Automobiles	9217	FRD—Ford Motor Corporation	Ford Taurus SEL AWD	1FAHP2HW2CG140023	2012	26,331	$29,331.00
Trucks and Other Rubber Tire Vehicles	9227	FRD—Ford Motor Corporation	F-550 SuperCab DRW 4WD	1FD0X5HT5GEA75275	2016	7,914	$84,090.00
Trucks and Other Rubber Tire Vehicles	5562	CEQ—Coach and Equipment Manufacturing Company	Econoline	1FDEE3FL1BDA80488	2011	107,985	$54,879.00
Trucks and Other Rubber Tire Vehicles	5561	CEQ—Coach and Equipment Manufacturing Company	Econoline	1FDEE3FL9BDA83445	2011	137,920	$54,879.00
Trucks and Other Rubber Tire Vehicles	9220	FRD—Ford Motor Corporation	F-350 SD XL 4WD	1FDRF3FT1DEB14067	2013	81,101	$37,924.50
Trucks and Other Rubber Tire Vehicles	9221	FRD—Ford Motor Corporation	F-350 SD XL 4WD	1FDRF3FT3DEB14068	2013	43,956	$37,924.50
Trucks and Other Rubber Tire Vehicles	9414	FRD—Ford Motor Corporation	F-350 SD XL DRW 4WD	1FDRF3HT1HEC81113	2017	4,889	$66,943.00
Trucks and Other Rubber Tire Vehicles	9218	FRD—Ford Motor Corporation	F-350 SD XL DRW 4WD	1FDRF3HT2CEC12682	2012	7,852	$66,943.00
Trucks and Other Rubber Tire Vehicles	9415	FRD—Ford Motor Corporation	F-350 SD XL DRW 4WD	1FDRF3HTXHEC81112	2017	6,500	$66,943.00
Trucks and Other Rubber Tire Vehicles	5520	CEQ—Coach and Equipment Manufacturing Company	Econoline	1FDWE35L89DA73442	2009	174,052	$50,895.00
Automobiles	9230	FRD—Ford Motor Corporation	Explorer Police 4WD	1FM5K8AR0GGB89175	2016	19,211	$29,331.00
Automobiles	9229	FRD—Ford Motor Corporation	Explorer Police 4WD	1FM5K8AR1GGB97513	2016	19,848	$29,331.00
Automobiles	9228	FRD—Ford Motor Corporation	Explorer Police 4WD	1FM5K8AR4GGB89177	2016	19,995	$29,331.00
Automobiles	9232	FRD—Ford Motor Corporation	Explorer Police 4WD	1FM5K8AR6GGB97510	2016	25,712	$29,331.00
Automobiles	9231	FRD—Ford Motor Corporation	Explorer Police 4WD	1FM5K8ARXGGB97509	2016	16,591	$29,331.00
Automobiles	9211	FRD—Ford Motor Corporation	Escape Hybrid 4WD	1FMCU59319KC38173	2009	101,281	$29,331.00

Type	Asset ID	Manufacturer	Model	VIN	In Service Year	Odometer Reading	Replacement Cost
Automobiles		FRD—Ford Motor Corporation	Escape Hybrid 4WD	1FMCU59319KC41378	2009	85,719	$29,331.00
Automobiles	9212	FRD—Ford Motor Corporation	Escape Hybrid 4WD	1FMCU59339KC38174	2009	147,304	$29,331.00
Automobiles	9213	FRD—Ford Motor Corporation	Escape Hybrid 4WD	1FMCU59369KC41375	2009	102,391	$29,331.00
Automobiles	9214	FRD—Ford Motor Corporation	Escape Hybrid 4WD	1FMCU59389KC41376	2009	82,653	$29,331.00
Automobiles	9210	FRD—Ford Motor Corporation	Escape Hybrid 4WD	1FMCU593X9KC38172	2009	92,896	$29,331.00
Automobiles	9140	FRD—Ford Motor Corporation	Escape Hybrid 4WD	1FMCU59H08KA15990	2007	156,744	$29,331.00
Automobiles	516	FRD—Ford Motor Corporation	Escape Hybrid 4WD	1FMCU59H28KA15991	2007	32,714	$29,331.00
Automobiles	9215	FRD—Ford Motor Corporation	Escape Hybrid 4WD	1FMCU5K39BKC31116	2011	79,081	$29,331.00
Automobiles	9416	FRD—Ford Motor Corporation	Escape SE 4WD	1FMCU9G92JUC20174	2018	506	$29,331.00
Automobiles	9412	FRD—Ford Motor Corporation	Escape SE 4WD	1FMCU9G98HUD43990	2014	10,105	$29,331.00
Automobiles	9413	FRD—Ford Motor Corporation	Escape SE 4WD	1FMCU9G9XHUD43991	2014	12,981	$29,331.00
Automobiles	9410	FRD—Ford Motor Corporation	Escape SE 4WD	1FMCU9GX0EUD09889	2014	29,411	$29,331.00
Automobiles		FRD—Ford Motor Corporation	Escape SE 4WD	1FMCU9GX1EUD09884	2014	34,287	$29,331.00
Automobiles	9406	FRD—Ford Motor Corporation	Escape SE 4WD	1FMCU9GX3EUD09885	2014	24,371	$29,331.00
Automobiles		FRD—Ford Motor Corporation	Escape SE 4WD	1FMCU9GX4EUD09880	2014	30,021	$29,331.00
Automobiles	9407	FRD—Ford Motor Corporation	Escape SE 4WD	1FMCU9GX5EUD09886	2014	38,280	$29,331.00
Automobiles		FRD—Ford Motor Corporation	Escape SE 4WD	1FMCU9GX6EUD09881	2014	41,565	$29,331.00

Type	Asset ID	Manufacturer	Model	VIN	In Service Year	Odometer Reading	Replacement Cost
Automobiles	9408	FRD—Ford Motor Corporation	Escape SE 4WD	1FMCU9GX7EUD09887	2014	46,827	$29,331.00
Automobiles	9411	FRD—Ford Motor Corporation	Escape SE 4WD	1FMCU9GX7EUD09890	2014	36,253	$29,331.00
Automobiles	9403	FRD—Ford Motor Corporation	Escape SE 4WD	1FMCU9GX8EUD09882	2014	36,795	$29,331.00
Automobiles	9409	FRD—Ford Motor Corporation	Escape SE 4WD	1FMCU9GX9EUD09888	2014	50,195	$29,331.00
Automobiles	9404	FRD—Ford Motor Corporation	Escape SE 4WD	1FMCU9GXXEUD09883	2014	15,057	$29,331.00
Automobiles	9417	FRD—Ford Motor Corporation	Escape SE 4WD	1FMCU9HD7JUA93196	2018	-	$29,331.00
Automobiles	9137	FRD—Ford Motor Corporation	Explorer XLS 4.0L 4WD	1FMZU72K64UB16929	2004	92,899	$29,331.00
Trucks and Other Rubber Tire Vehicles	T-12	FRD—Ford Motor Corporation	F-350 SD XL 4WD	1FTRF3BT5CEB43421	2012	1,458	$63,295.00
Trucks and Other Rubber Tire Vehicles	9216	FRD—Ford Motor Corporation	F-350 SD XL 4WD	1FTRF3BT6BED04504	2011	35,521	$38,535.00
Trucks and Other Rubber Tire Vehicles	9203	FRD—Ford Motor Corporation	F-350 SD XL 4WD	1FTSF31F42EA20799	2002	173,320	$25,080.00
Trucks and Other Rubber Tire Vehicles	9204	FRD—Ford Motor Corporation	F-350 SD XL 4WD	1FTSF31F62EA20836	2002	80,137	$25,080.00
Trucks and Other Rubber Tire Vehicles	9208	CMD—Chevrolet Motor Division—GMC	Silverado 3500HD Regular Cab 2WB	1GBJC34K08E207368	2008	117,421	$32,173.00
Trucks and Other Rubber Tire Vehicles	9207	CMD—Chevrolet Motor Division—GMC	Silverado 2500HD LT1 Long Box 4WD	1GCHK24618E207003	2008	23,103	$31,914.00
Trucks and Other Rubber Tire Vehicles	9386	FRD—Ford Motor Corporation	F-350 XL Reg. Cab 4WD	2FTHF36F6TCA39462	1996	63,308	$27,747.00
Automobiles	9224	TOY—Toyota Motor Corporation	Prius II	JTDKN3DU9C1540826	2013	10,523	$29,331.00
Automobiles	9222	TOY—Toyota Motor Corporation	Prius II	JTDKN3DUXC1541984	2013	14,522	$29,331.00

Table A.4 Bus Shelters

Municipality	Stop Name	Stop ID
Northampton	Meadowbrook	182
Northampton	Florence Center	209
Northampton	Cooley Dickinson	224
Northampton	Day Ave	230
Northampton	HS Inbound	235
Northampton	HS Outbound	234
Northampton	Leeds	143
Northampton	Post Office	244
Northampton	Courthouse	254
Northampton	Academy	261
Northampton	Florence Heights	237
Williamsburg	Main/High	55
Sunderland	Sunderland Plaza	12
Hadley	Hampshire Mall	140
Hadley	Chipotle	NOID
Easthampton	Main/Campus	302
Easthampton	Eastworks	NOID
Easthampton	Union/High	6270
Amherst	Colonial Village	118
Amherst	Across CompSci	49
Amherst	By CompSci	50
Amherst	FAC	71
Amherst	SAB	72
Amherst	OHill Grayson	59
Amherst	OHill Dickinson	62
Amherst	Morrill	63
Amherst	Lederle	58
Amherst	Northeast	56
Amherst	Haigis Mall	73
Amherst	Pray (to Town)	93
Amherst	Pray (to Campus)	94
Amherst	Post Office	96
Amherst	Pleasant/Chestnut	79
Amherst	Aspen Chase	108
Amherst	Town Hall	110

Municipality	Stop Name	Stop ID
Amherst	Common (southbound)	113
Amherst	Amherst College	116
Amherst	Southpointe	153
Holyoke	Hampden/Nonotuck	361
Holyoke	Walnut/Hampden	371
Holyoke	Chestnut/Lyman	372
Holyoke	Appleton/Holy Cross	373
Holyoke	Pleasant/Forestdale	376
Holyoke	Essex/Sycamore	380
Holyoke	HTC	9098
Holyoke	Jarvis/Unnamed	386
Holyoke	City Hall	387
Holyoke	Mosher/West	406
Holyoke	Library	414
Holyoke	Sargeant/Oak	421
Holyoke	Hospital	456
Holyoke	Maple/Franklin	466
Holyoke	Cabot/Canal	483
Holyoke	South Street Plaza	490
Holyoke	South/Harrison	494
Holyoke	HCC Kids Place	509
Holyoke	Holy Family/Devonshire	581
Holyoke	Holyoke Pediatric	584
Holyoke	Holyoke Mall	609
Chicopee	Montgomery	595
Chicopee	Meetinghouse	618
Chicopee	Main/Grove	663
Chicopee	Front/Cyman	738
Ludlow	Stonybrook	418
Ludlow	Prerelease	454
Longmeadow	Ruth House (no longer served?)	NOID
West Springfield	Westfield/Meadowbrook	1433
West Springfield	Westfield/Silver	1438
West Springfield	Memorial/Main	1548
West Springfield	Memorial/Big E	1643
West Springfield	Memorial/Colony	1657
West Springfield	Riverfront Canoe Launch	NOID

Municipality	Stop Name	Stop ID
Westfield	South Lot (1)	913
Westfield	Scanlon Hall	897
Westfield	Walmart Parking Lot	1352
Westfield	UHaul	1258
Westfield	Stop & Shop	6953
Agawam	Feeding Hills	1853
Springfield	Main/Oak (Indian Orchard)	659
Springfield	Oak/Worcester (Indian Orchard)	669
Springfield	Industry/Robbins	795
Springfield	Across Eastfield Mall	797
Springfield	Across Springfield Plaza	830
Springfield	Page/St James	832
Springfield	Berkshire/Dewey (in)	861
Springfield	Berkshire/Bay	931
Springfield	St James/St James	872
Springfield	Springfield/Atwater	916
Springfield	Across Baystate	1077
Springfield	By Baystate	1081
Springfield	Sanderson/Division	1117
Springfield	Duggan MS	1177
Springfield	Wilbraham/Kane (out)	1184
Springfield	Wilbraham/Kane (in)	1178
Springfield	Clyde/M	1195
Springfield	Plainfield/Lowell	1257
Springfield	Carew/Dwight (in)	1270
Springfield	Carew/Dwight (out)	1274
Springfield	Wilbraham/Rochelle	1284
Springfield	State/Catharine	1309
Springfield	West/Riverside	1317
Springfield	State/Hancock	1332
Springfield	State/Thompson (in)	1328
Springfield	State/Federal (Burger King)	1358
Springfield	State/School	1454
Springfield	SBT/Liberty	9002
Springfield	Main/Bridge	1474
Springfield	Harrison In	1475
Springfield	State/Chestnut	1479

Municipality	Stop Name	Stop ID
Springfield	Six Corners	1521
Springfield	Allen/Allen Park	1612
Springfield	Allen/Cooley Stop & Shop	1662
Springfield	Mill & Locust	1670
Springfield	Sumner/Allen	1672
Springfield	Sumner/White	1715
Springfield	Belmont/Oakland	1718
Springfield	Sumner/Forest Park	1758
Springfield	Sumner/Ft Pleasant	1779
Springfield	Dickinson/Biltmore	1788
Springfield	Dwight/Falcons	6009
Springfield	State/Federal (STCC Tech Park)	1350
Springfield	SAAB Court	9005
Springfield	State/Myrtle (STCC)	9014
Springfield	Harrison Out	9040
Springfield	Carew/Main (out)	1334
Springfield	State/Main	1495
Amherst	Colonial Village II (SE Street)	120
Amherst	Gray Street	104
Amherst	UMass Parking Services	61
Sunderland	Sugarloaf Estates	9
Amherst	Townhouse In	30
Amherst	Puffton	34
Amherst	North Village	38
Amherst	Memorial Drive	133
Amherst	Boulders	157
Amherst	Hampshire College	236
Amherst	Jeff Amherst Manor	166
Amherst	Mill Lane	145
Springfield	State/Mapledell (AIC)	1253
Springfield	State/Andrew	1279
Springfield	State/Westminster (in)	1323
Springfield	State/Buckingham (out)	1327
Springfield	State/Spring (in)	1445
Westfield	South Lot (2)	NOID
Westfield	South Lot (3)	NOID
Westfield	Opposite Westfield Shops	1153

Municipality	Stop Name	Stop ID
Northampton	Atwood Drive (Parking Lot)	7481
Northampton	Atwood Drive (Rt 5)	6262
Ludlow	Big Y	616
Springfield	Berkshire/Dewey (out)	859
Springfield	Carew/Main (in)	1335
West Springfield	Park (in)	1396
West Springfield	Westfield/Churchill	1388
West Springfield	Riverdale Road (Friendly's)	881
Holyoke	Tokeneke/Holy Family	564

Appendix B. Asset Condition

Table B.1 Rolling Stock

Asset Class	Asset Name	ID/Serial Number	Age	Vehicle Mileage	Replacement Cost/Value	Useful Life Benchmark	At or Past ULB
Trolleybus (TB)	1192	1C9S2HFS11W535213	17	45,733	$468,841.00	13	Yes
Trolleybus (TB)	1193	1C9S2HFS31W535214	17	48,000	$468,841.00	13	Yes
Bus (BU)	1310	15GGD191951072877	13	195,270	$668,657.00	12	Yes
Bus (BU)	1618	15GGD291461076813	12	297,475	$440,492.00	12	Yes
Bus (BU)	1619	15GGD291661076814	12	326,274	$440,492.00	12	Yes
Bus (BU)	1620	15GGD291861076815	12	332,870	$440,492.00	12	Yes
Bus (BU)	1621	15GGD291X61076816	12	347,669	$440,492.00	12	Yes
Bus (BU)	3201	15GGD291361076818	12	369,392	$440,492.00	12	Yes
Bus (BU)	3202	15GGD291561076819	12	423,230	$440,492.00	12	Yes
Bus (BU)	3203	15GGD291161076820	12	435,784	$440,492.00	12	Yes
Bus (BU)	3204	15GGD291361076821	12	392,481	$440,492.00	12	Yes
Bus (BU)	3205	15GGD291561076822	12	287,266	$440,492.00	12	Yes
Bus (BU)	7604	15GGD291161076817	12	390,993	$440,492.00	12	Yes
Minibus (MB)	1401	15GGE291061091130	12	282,516	$368,231.26	10	Yes
Minibus (MB)	1402	15GGE291261091131	12	296,910	$368,231.26	10	Yes
Minibus (MB)	1403	15GGE291461091132	12	300,824	$368,231.26	10	Yes
Minibus (MB)	1404	15GGE291661091133	12	294,670	$368,231.26	10	Yes
Minibus (MB)	1405	15GGE291861091134	12	301,222	$368,231.26	10	Yes
Minibus (MB)	1406	15GGE291X61091135	12	308,741	$368,231.26	10	Yes
Minibus (MB)	1407	15GGE291161091136	12	300,914	$368,231.26	10	Yes
Minibus (MB)	7401	15GGE291361091137	12	410,570	$368,231.26	10	Yes
Minibus (MB)	7402	15GGE291561091138	12	387,387	$368,231.26	10	Yes
Minibus (MB)	7403	15GGE291761091139	12	427,080	$368,231.26	10	Yes
Bus (BU)	1508	15GGB291461076803	12	381,135	$434,503.00	12	Yes

Asset Class	Asset Name	ID/Serial Number	Age	Vehicle Mileage	Replacement Cost/Value	Useful Life Benchmark	At or Past ULB
Bus (BU)	1509	15GGB291661076804	12	407,536	$434,503.00	12	Yes
Bus (BU)	1510	15GGB291861076805	12	272,719	$434,503.00	12	Yes
Bus (BU)	1511	15GGB291X61076806	12	421,516	$434,503.00	12	Yes
Bus (BU)	1512	15GGB291161076807	12	396,305	$434,503.00	12	Yes
Bus (BU)	1513	15GGB291361076808	12	387,122	$434,503.00	12	Yes
Bus (BU)	1514	15GGB291561076809	12	387,591	$434,503.00	12	Yes
Bus (BU)	1515	15GGB291161076810	12	395,141	$434,503.00	12	Yes
Bus (BU)	1516	15GGB291361076811	12	396,543	$434,503.00	12	Yes
Bus (BU)	1517	15GGB291561076812	12	455,516	$434,503.00	12	Yes
Bus (BU)	1630	15GGD291371077520	11	300,461	$440,492.00	12	Yes
Bus (BU)	1631	15GGD291571077521	11	336,855	$440,492.00	12	Yes
Bus (BU)	1632	15GGD291771077522	11	323,999	$440,492.00	12	Yes
Bus (BU)	1633	15GGD291971077523	11	432,074	$440,492.00	12	Yes
Bus (BU)	1634	15GGD291071077524	11	313,286	$440,492.00	12	Yes
Bus (BU)	1635	15GGD291271077525	11	325,491	$440,492.00	12	Yes
Bus (BU)	1636	15GGD291471077526	11	351,077	$440,492.00	12	Yes
Bus (BU)	3211	15GGD291871077528	11	421,376	$440,492.00	12	Yes
Bus (BU)	3212	15GGD291X71077529	11	383,880	$440,492.00	12	Yes
Bus (BU)	3213	15GGD291671077530	11	395,336	$440,492.00	12	Yes
Bus (BU)	3214	15GGD291871077531	11	409,464	$440,492.00	12	Yes
Bus (BU)	3215	15GGD291X71077532	11	392,103	$440,492.00	12	Yes
Bus (BU)	7610	15GGD291671077527	11	399,932	$440,492.00	12	Yes
Bus (BU)	1640	15GGD271481078700	10	326,212	$440,492.00	12	No
Bus (BU)	1641	15GGD271681078701	10	279,275	$440,492.00	12	No
Bus (BU)	1642	15GGD271881078702	10	296,917	$440,492.00	12	No
Bus (BU)	1643	15GGD271X81078703	10	283,662	$440,492.00	12	No

Asset Class	Asset Name	ID/Serial Number	Age	Vehicle Mileage	Replacement Cost/Value	Useful Life Benchmark	At or Past ULB
Bus (BU)	1644	15GGD271181078704	10	289,480	$440,492.00	12	No
Bus (BU)	1645	15GGD271381078705	10	289,903	$440,492.00	12	No
Bus (BU)	1646	15GGD271581078706	10	300,796	$440,492.00	12	No
Bus (BU)	1647	15GGD271781078707	10	282,815	$440,492.00	12	No
Bus (BU)	1648	15GGD271981078708	10	320,978	$440,492.00	12	No
Bus (BU)	1649	15GGD271081078709	10	234,425	$440,492.00	12	No
Bus (BU)	3221	15GGD271781078710	10	353,999	$440,492.00	12	No
Bus (BU)	3222	15GGD271981078711	10	309,938	$440,492.00	12	No
Bus (BU)	3223	15GGD271081078712	10	342,228	$440,492.00	12	No
Bus (BU)	3224	15GGD271281078713	10	298,958	$440,492.00	12	No
Bus (BU)	3225	15GGD271481078714	10	320,884	$440,492.00	12	No
Bus (BU)	1550	15GGB271981078715	9	407,411	$434,503.00	12	No
Bus (BU)	1551	15GGB271081078716	9	300,948	$434,503.00	12	No
Bus (BU)	1552	15GGB271281078717	9	279,343	$434,503.00	12	No
Bus (BU)	1553	15GGB271481078718	9	339,734	$434,503.00	12	No
Bus (BU)	1554	15GGB271681078719	9	295,799	$434,503.00	12	No
Bus (BU)	1555	15GGB271281078720	9	254,003	$434,503.00	12	No
Bus (BU)	1556	15GGB271481078721	9	315,839	$434,503.00	12	No
Bus (BU)	1557	15GGB271681078722	9	466,506	$434,503.00	12	No
Bus (BU)	1558	15GGB271881078723	9	461,416	$434,503.00	12	No
Bus (BU)	1559	15GGB271X81078724	9	297,726	$434,503.00	12	No
Bus (BU)	1560	15GGB271181078725	9	361,304	$434,503.00	12	No
Bus (BU)	1561	15GGB271381078726	9	345,710	$434,503.00	12	No
Bus (BU)	1562	15GGB271581078727	9	324,004	$434,503.00	12	No
Bus (BU)	7550	15GGB271981078729	9	325,635	$434,503.00	12	No
Bus (BU)	7551	15GGB271781078728	9	306,752	$434,503.00	12	No

Asset Class	Asset Name	ID/Serial Number	Age	Vehicle Mileage	Replacement Cost/Value	Useful Life Benchmark	At or Past ULB
Bus (BU)	1565	15GGB2719A1178268	7	251,730	$434,503.00	12	No
Bus (BU)	3226	15GGD271291176996	9	327,196	$440,492.00	12	No
Bus (BU)	3227	15GGD271491176997	9	302,766	$440,492.00	12	No
Bus (BU)	3228	15GGD271691176998	9	330,892	$440,492.00	12	No
Bus (BU)	7660	15GGD271791176993	9	367,939	$440,492.00	12	No
Bus (BU)	7661	15GGD271991176994	9	354,509	$440,492.00	12	No
Bus (BU)	7662	15GGD271091176995	9	348,903	$440,492.00	12	No
Cutaway Bus (CU)	1202	1FDFE45S99DA26496	9	74,601	$75,941.00	7	Yes
Bus (BU)	1563	15GGB2715A1178266	7	215,684	$434,503.00	12	No
Bus (BU)	1564	15GGB2717A1178267	7	244,666	$434,503.00	12	No
Bus (BU)	1566	15GGB2710A1178269	7	334,581	$434,503.00	12	No
Bus (BU)	1567	15GGB2717A1178270	7	236,619	$434,503.00	12	No
Bus (BU)	1568	15GGB2719A1178271	7	217,939	$434,503.00	12	No
Bus (BU)	1569	15GGB2710A1178272	7	238,643	$434,503.00	12	No
Bus (BU)	1571	15GGB2714A1178274	7	186,677	$434,503.00	12	No
Bus (BU)	1572	15GGB2716A1178275	7	242,129	$434,503.00	12	No
Bus (BU)	1573	15GGB2718A1178276	7	212,275	$434,503.00	12	No
Bus (BU)	1574	15GGB271XA1178277	7	207,655	$434,503.00	12	No
Bus (BU)	1575	15GGB2711A1178278	7	225,021	$434,503.00	12	No
Bus (BU)	1576	15GGB2713A1178279	7	232,875	$434,503.00	12	No
Bus (BU)	1577	15GGB271XA1178280	7	222,553	$434,503.00	12	No
Bus (BU)	1578	15GGB2711A1178281	7	232,911	$434,503.00	12	No
Bus (BU)	1570 (7552)	15GGB2712A1178273	7	253,123	$434,503.00	12	No
Bus (BU)	1650	15GGD2710A1178251	7	203,855	$440,492.00	12	No
Bus (BU)	1651	15GGD2712A1178252	7	200,643	$440,492.00	12	No
Bus (BU)	1652	15GGD2714A1178253	7	219,901	$440,492.00	12	No

Asset Class	Asset Name	ID/Serial Number	Age	Vehicle Mileage	Replacement Cost/Value	Useful Life Benchmark	At or Past ULB
Bus (BU)	1653	15GGD2716A1178254	7	203,192	$440,492.00	12	No
Bus (BU)	1654	15GGD2718A1178255	7	202,154	$440,492.00	12	No
Bus (BU)	1655	15GGD271XA1178256	7	207,746	$440,492.00	12	No
Bus (BU)	1656	15GGD2711A1178257	7	236,644	$440,492.00	12	No
Bus (BU)	1657	15GGD2713A1178258	7	299,383	$440,492.00	12	No
Bus (BU)	1658	15GGD2715A1178259	7	224,151	$440,492.00	12	No
Bus (BU)	1659	15GGD2711A1178260	7	206,709	$440,492.00	12	No
Bus (BU)	1660	15GGD2713A1178261	7	291,962	$440,492.00	12	No
Bus (BU)	1661	15GGD2715A1178262	7	224,264	$440,492.00	12	No
Bus (BU)	1662	15GGD2717A1178263	7	212,310	$440,492.00	12	No
Bus (BU)	1663	15GGD2719A1178264	7	246,032	$440,492.00	12	No
Bus (BU)	1664	15GGD2710A1178265	7	243,131	$440,492.00	12	No
Bus (BU)	1701	5FYD8KV19BB039975	6	231,739	$434,503.00	12	No
Bus (BU)	3306	5FYD8KV1XBB039905	6	159,887	$434,503.00	12	No
Bus (BU)	3307	5FYD8KV11BB039906	6	173,099	$434,503.00	12	No
Bus (BU)	3308	5FYD8KV13BB039907	6	194,416	$434,503.00	12	No
Bus (BU)	3309	5FYD8KV15BB039908	6	177,355	$434,503.00	12	No
Bus (BU)	3310	5FYD8KV17BB039909	6	147,915	$434,503.00	12	No
Bus (BU)	1801	5FYH8FR1XBB039583	6	213,607	$440,492.00	12	No
Bus (BU)	1802	5FYH8FR11BB039584	6	267,563	$440,492.00	12	No
Bus (BU)	1803	5FYH8FR13BB039585	6	242,150	$440,492.00	12	No
Bus (BU)	1804	5FYH8FR15BB039586	6	239,299	$440,492.00	12	No
Bus (BU)	1805	5FYH8FR17BB039587	6	223,759	$440,492.00	12	No
Bus (BU)	3301	5FYH8FR19BB039588	6	216,971	$440,492.00	12	No
Bus (BU)	3302	5FYH8FR10BB039589	6	222,107	$440,492.00	12	No
Bus (BU)	3303	5FYH8FR17BB039590	6	225,511	$440,492.00	12	No

Asset Class	Asset Name	ID/Serial Number	Age	Vehicle Mileage	Replacement Cost/Value	Useful Life Benchmark	At or Past ULB
Bus (BU)	3304	5FYH8FR19BB039591	6	224,389	$440,492.00	12	No
Bus (BU)	3305	5FYH8FR10BB039592	6	229,307	$440,492.00	12	No
Bus (BU)	1810	5FYH8FV12BB039629	6	231,641	$440,492.00	12	No
Bus (BU)	1811	5FYH8FV19BB039630	6	228,710	$440,492.00	12	No
Bus (BU)	1812	5FYD8FV10BB039631	6	236,432	$440,492.00	12	No
Bus (BU)	1813	5FYD8FV12BB039632	7	224,251	$440,492.00	12	No
Bus (BU)	1814	5FYD8FV14BB039633	6	231,052	$440,492.00	12	No
Bus (BU)	1815	5FYD8FV16BB039634	6	232,868	$440,492.00	12	No
Bus (BU)	1816	5FYD8FV18BB039635	6	225,976	$440,492.00	12	No
Bus (BU)	1817	5FYD8FV1XBB039636	6	243,854	$440,492.00	12	No
Bus (BU)	1818	5FYD8FV11BB039637	6	229,007	$440,492.00	12	No
Bus (BU)	1819	5FYD8FV13BB039638	6	187,245	$440,492.00	12	No
Bus (BU)	7801	5FYD8FV10BB039628	6	254,867	$440,492.00	12	No
Bus (BU)	7802	5FYD8FV15BB039639	6	255,311	$440,492.00	12	No
Cutaway Bus (CU)	5574	1FDFE4FSXBDB22738	7	71,609	$75,941.00	7	Yes
Bus (BU)	1821	5FYD8FV19CB040620	6	220,580	$440,492.00	12	No
Bus (BU)	1822	5FYD8FV10CB040621	6	221,101	$440,492.00	12	No
Bus (BU)	1823	5FYD8FV12CB040622	6	219,918	$440,492.00	12	No
Bus (BU)	1824	5FYD8FV14CB040623	6	205,167	$440,492.00	12	No
Bus (BU)	1825	5FYD8FV16CB040624	6	200,026	$440,492.00	12	No
Bus (BU)	1826	5FYD8FV18CB040625	6	218,841	$440,492.00	12	No
Bus (BU)	7811	5FYD8FV15CB040615	6	226,725	$440,492.00	12	No
Bus (BU)	7812	5FYD8FV17CB040616	6	227,521	$440,492.00	12	No
Bus (BU)	7813	5FYD8FV19CB040617	6	217,541	$440,492.00	12	No
Bus (BU)	7814	5FYD8FV10CB040618	6	220,472	$440,492.00	12	No
Bus (BU)	7815	5FYD8FV12CB040619	6	205,989	$440,492.00	12	No

Asset Class	Asset Name	ID/Serial Number	Age	Vehicle Mileage	Replacement Cost/Value	Useful Life Benchmark	At or Past ULB
Minivan (MV)	5605	1FDEE3FL5DDA72638	5	158,533	$59,594.00	4	Yes
Minivan (MV)	5616	1FDEE3FLXDDA93002	4	156,369	$59,594.00	4	Yes
Minivan (MV)	5618	1FDEE3FL1DDB03285	4	130,217	$59,594.00	4	Yes
Minivan (MV)	5621	1FDEE3FL1DDA93003	4	135,149	$59,594.00	4	Yes
Minivan (MV)	5625	1FDEE3FL2DDA93009	4	130,368	$59,594.00	4	Yes
Minivan (MV)	5628	1FDEE3FL5DDB19294	4	135,591	$59,594.00	4	Yes
Minivan (MV)	5629	1FDEE3FL9DDB16060	4	147,734	$59,594.00	4	Yes
Minivan (MV)	5631	1FDEE3FL3DDB19293	4	137,624	$59,594.00	4	Yes
Minivan (MV)	5632	1FDEE3FL8DDB19290	4	141,517	$59,594.00	4	Yes
Minivan (MV)	5633	1FDEE3FL7DDB19295	4	136,953	$59,594.00	4	Yes
Minivan (MV)	5634	1FDEE3FL2DDB16059	4	126,178	$59,594.00	4	Yes
Minivan (MV)	5635	1FDEE3FL9DDB19296	4	137,089	$59,594.00	4	Yes
Minivan (MV)	5637	1FDEE3FL2DDB19298	4	152,060	$59,594.00	4	Yes
Minivan (MV)	5638	1FDEE3FL0DDB19297	4	139,212	$59,594.00	4	Yes
Articulated Bus (AB)	3401	5FYH8YU19DB041962	5	134,885	$1,098,068.33	12	No
Articulated Bus (AB)	3402	5FYH8YU10DB041963	5	139,376	$1,098,068.33	12	No
Articulated Bus (AB)	7901	5FYH8YU15DB041960	5	123,194	$1,098,068.33	12	No
Articulated Bus (AB)	7902	5FYH8YU17DB041961	5	137,312	$1,098,068.33	12	No
Minivan (MV)	5639	1FDEE3FL4EDA34318	4	111,358	$59,594.00	4	Yes
Minivan (MV)	5640	1FDEE3FL6EDA34319	4	98,514	$59,594.00	4	Yes
Minivan (MV)	5641	1FDEE3FL2EDA34320	4	96,131	$59,594.00	4	Yes
Minivan (MV)	5642	1FDEE3FL4EDA34321	4	174,261	$59,594.00	4	Yes
Minivan (MV)	5643	1FDEE3FL6EDA34322	4	115,366	$59,594.00	4	Yes
Minivan (MV)	5645	1FDEE3FLXEDA34324	4	128,282	$59,594.00	4	Yes
Minivan (MV)	5647	1FDEE3FL3EDA34326	4	131,439	$59,594.00	4	Yes
Minivan (MV)	5648	1FDEE3FL5EDA34327	4	140,162	$59,594.00	4	Yes

Asset Class	Asset Name	ID/Serial Number	Age	Vehicle Mileage	Replacement Cost/Value	Useful Life Benchmark	At or Past ULB
Minivan (MV)	5649	1FDEE3FL7EDA34328	4	123,507	$59,594.00	4	Yes
Minivan (MV)	5650	1FDEE3FL9EDA34329	4	133,221	$59,594.00	4	Yes
Bus (BU)	3311	5FYD8KV16EB045124	3	111,783	$434,503.00	12	No
Bus (BU)	3312	5FYD8KV18EB045125	3	108,208	$434,503.00	12	No
Bus (BU)	3313	5FYD8KV1XEB045126	3	100,416	$434,503.00	12	No
Bus (BU)	3314	5FYD8KV11EB045127	3	101,920	$434,503.00	12	No
Bus (BU)	3315	5FYD8KV13EB045128	3	104,925	$434,503.00	12	No
Bus (BU)	1830	5FYD8FV15EB044988	3	166,110	$440,492.00	12	No
Bus (BU)	1831	5FYD8FV17EB044989	3	67,066	$440,492.00	12	No
Bus (BU)	1832	5FYD8FV13EB044990	3	128,333	$440,492.00	12	No
Bus (BU)	1833	5FYD8FV15EB044991	3	150,042	$440,492.00	12	No
Bus (BU)	1834	5FYD8FV17EB044992	3	158,013	$440,492.00	12	No
Bus (BU)	1835	5FYD8FV19EB044993	3	145,987	$440,492.00	12	No
Bus (BU)	1836	5FYD8FV10EB044994	3	140,745	$440,492.00	12	No
Bus (BU)	1837	5FYD8FV12EB044995	3	156,241	$440,492.00	12	No
Minivan (MV)	5651	1FDEE3FL7FDA34783	3	82,240	$59,594.00	4	Yes
Minivan (MV)	5652	1FDEE3FL3FDA34781	3	63,183	$59,594.00	4	Yes
Minivan (MV)	5653	1FDEE3FL5FDA34779	3	62,209	$59,594.00	4	Yes
Minivan (MV)	5654	1FDEE3FL5FDA34782	3	64,482	$59,594.00	4	Yes
Minivan (MV)	5655	1FDEE3FL1FDA34777	3	68,079	$59,594.00	4	Yes
Minivan (MV)	5656	1FDEE3FLXFDA34793	3	69,247	$59,594.00	4	Yes
Minivan (MV)	5657	1FDEE3FL5FDA34796	3	85,289	$59,594.00	4	Yes
Minivan (MV)	5658	1FDEE3FL1FDA34780	3	64,775	$59,594.00	4	Yes
Minivan (MV)	5659	1FDEE3FL3FDA34778	3	92,668	$59,594.00	4	Yes
Minivan (MV)	5660	1FDEE3FL2FDA34786	3	71,970	$59,594.00	4	Yes
Minivan (MV)	5661	1FDEE3FL4FDA34787	3	85,301	$59,594.00	4	Yes

Asset Class	Asset Name	ID/Serial Number	Age	Vehicle Mileage	Replacement Cost/Value	Useful Life Benchmark	At or Past ULB
Minivan (MV)	5662	1FDEE3FL6FDA34788	3	79,520	$59,594.00	4	Yes
Minivan (MV)	5663	1FDEE3FL8FDA34789	3	76,992	$59,594.00	4	Yes
Minivan (MV)	5664	1FDEE3FL4FDA34790	3	75,170	$59,594.00	4	Yes
Minivan (MV)	5666	1FDEE3FL8FDA34792	3	71,562	$59,594.00	4	Yes
Minivan (MV)	5667	1FDEE3FL9FDA34784	3	61,837	$59,594.00	4	Yes
Minivan (MV)	5668	1FDEE3FL1FDA34794	3	64,390	$59,594.00	4	Yes
Minivan (MV)	5669	1FDEE3FL3FDA34795	3	64,913	$59,594.00	4	Yes
Minivan (MV)	5670	1FDEE3FL0FDA34785	3	76,223	$59,594.00	4	Yes
Bus (BU)	1840	5FYD8FV13FF046443	2	124,122	$440,492.00	12	No
Bus (BU)	1841	5FYD8FV15FF046444	2	131,922	$440,492.00	12	No
Bus (BU)	1842	5FYD8FV17FF046445	2	123,396	$440,492.00	12	No
Bus (BU)	1843	5FYD8FV19FF046446	2	136,602	$440,492.00	12	No
Bus (BU)	1844	5FYD8FV10FF046447	2	137,506	$440,492.00	12	No
Bus (BU)	1845	5FYD8FV12FF046448	2	131,133	$440,492.00	12	No
Bus (BU)	1846	5FYD8FV14FF046449	2	139,018	$440,492.00	12	No
Bus (BU)	1847	5FYD8FV10FF046450	2	138,882	$440,492.00	12	No
Bus (BU)	1848	5FYD8FV12FF046451	2	138,685	$440,492.00	12	No
Bus (BU)	1849	5FYD8FV14FF046452	2	141,813	$440,492.00	12	No
Cutaway Bus (CU)	6503 (1204)	1FDFE4FS3FDA19697	3	96,301	$75,941.00	7	No
Cutaway Bus (CU)	6504 (1205)	1FDFE4FS5FDA19698	3	29,259	$75,941.00	7	No
Bus (BU)	1710	5FYD8KV14FF046637	2	127,042	$434,503.00	12	No
Bus (BU)	1711	5FYD8KV16FF046638	2	127,620	$434,503.00	12	No
Bus (BU)	1712	5FYD8KV18FF046639	2	131,571	$434,503.00	12	No
Bus (BU)	1713	5FYD8KV14FF046640	2	132,470	$434,503.00	12	No
Bus (BU)	1714	5FYD8KV16FF046641	2	134,011	$434,503.00	12	No
Minivan (MV)	5671	1FDEE3FL5GDC05855	2	92,247	$59,594.00	4	No

Asset Class	Asset Name	ID/Serial Number	Age	Vehicle Mileage	Replacement Cost/Value	Useful Life Benchmark	At or Past ULB
Minivan (MV)	5672	1FDEE3FL7GDC05856	2	97,976	$59,594.00	4	No
Minivan (MV)	5673	1FDEE3FL9GDC05857	2	81,042	$59,594.00	4	No
Minivan (MV)	5674	1FDEE3FL0GDC05858	2	86,009	$59,594.00	4	No
Minivan (MV)	5675	1FDEE3FL2GDC05859	2	91,575	$59,594.00	4	No
Minivan (MV)	5676	1FDEE3FL9GDC05860	2	91,415	$59,594.00	4	No
Minivan (MV)	5677	1FDEE3FL0GDC05861	2	93,000	$59,594.00	4	No
Minivan (MV)	5678	1FDEE3FL2GDC05862	2	69,475	$59,594.00	4	No
Minivan (MV)	5679	1FDEE3FL4GDC05863	2	84,350	$59,594.00	4	No
Minivan (MV)	5680	1FDEE3FL6GDC05864	2	77,590	$59,594.00	4	No
Minivan (MV)	5683	1FDEE3FL2GDC18904	2	60,138	$59,594.00	4	No
Minivan (MV)	5684	1FDEE3FL4GDC22467	2	67,724	$59,594.00	4	No
Minivan (MV)	5685	1FDEE3FS6GDC49046	2	40,551	$59,594.00	4	No
Minivan (MV)	5686	1FDEE3FS4GDC50244	2	50,655	$59,594.00	4	No
Minivan (MV)	5687	1FDEE3FS6GDC50245	2	59,143	$59,594.00	4	No
Minivan (MV)	5688	1FDEE3FS8GDC50246	2	60,966	$59,594.00	4	No
Minivan (MV)	5689	1FDEE3FSXGDC50247	2	52,447	$59,594.00	4	No
Minivan (MV)	5690	1FDEE3FS1GDC50248	2	63,224	$59,594.00	4	No
Minivan (MV)	5691	1FDEE3FS4GDC54973	2	67,759	$59,594.00	4	No
Minivan (MV)	5700	1FDEE3FS5GDC54982	2	66,909	$59,594.00	4	No
Minivan (MV)	5701	1FDEE3FS7GDC54983	2	68,930	$59,594.00	4	No
Minivan (MV)	5702	1FDEE3FS9GDC54984	2	68,634	$59,594.00	4	No
Minivan (MV)	5892 (5692)	1FDEE3FS6GDC54974	2	62,750	$59,594.00	4	No
Minivan (MV)	5893 (5693)	1FDEE3FS8GDC54975	2	63,051	$59,594.00	4	No
Minivan (MV)	5895 (5695)	1FDEE3FS1GDC54977	2	60,252	$59,594.00	4	No
Minivan (MV)	5896 (5696)	1FDEE3FS3GDC54978	2	63,752	$59,594.00	4	No
Minivan (MV)	5897 (5697)	1FDEE3FS5GDC54979	2	58,768	$59,594.00	4	No

Asset Class	Asset Name	ID/Serial Number	Age	Vehicle Mileage	Replacement Cost/Value	Useful Life Benchmark	At or Past ULB
Minivan (MV)	5898 (5698)	1FDEE3FS1GDC54980	2	65,421	$59,594.00	4	No
Minivan (MV)	5899 (5699)	1FDEE3FS3GDC54981	2	73,578	$59,594.00	4	No
Cutaway Bus (CU)	1206	1FDFE4FS2GDC02784	3	133,250	$75,941.00	7	No
Cutaway Bus (CU)	1207	1FDFE4FS4GDC02785	3	137,304	$75,941.00	7	No
Bus (BU)	1410	1M9TH16J3GS816109	2	26,290	$739,000.00	12	No
Bus (BU)	1411	1M9TH16JXGS816110	2	32,358	$739,000.00	12	No
Bus (BU)	1412	1M9TH16J1GS816111	2	28,872	$739,000.00	12	No
Minivan (MV)	5703	1FDEE3FS2HDC29247	1	39,572	$59,594.00	4	No
Minivan (MV)	5704	1FDEE3FS4HDC29248	1	29,092	$59,594.00	4	No
Minivan (MV)	5705	1FDEE3FS6HDC29249	1	29,224	$59,594.00	4	No
Minivan (MV)	5706	1FDEE3FS2HDC29250	1	38,340	$59,594.00	4	No
Minivan (MV)	5707	1FDEE3FS4HDC29251	1	27,363	$59,594.00	4	No
Minivan (MV)	5708	1FDEE3FS6HDC29252	1	36,449	$59,594.00	4	No
Minivan (MV)	5709	1FDEE3FS8HDC29253	1	37,496	$59,594.00	4	No
Minivan (MV)	5710	1FDEE3FSXHDC29254	1	29,131	$59,594.00	4	No
Minivan (MV)	5711	1FDEE3FS1HDC29255	1	35,148	$59,594.00	4	No
Minivan (MV)	5712	1FDEE3FS3HDC29256	1	31,961	$59,594.00	4	No
Minivan (MV)	5713	1FDEE3FS5HDC29257	1	30,125	$59,594.00	4	No
Minivan (MV)	5714	1FDEE3FS7HDC29258	1	36,785	$59,594.00	4	No
Minivan (MV)	5715	1FDEE3FS9HDC29259	1	31,773	$59,594.00	4	No
Minivan (MV)	5716	1FDEE3FS5HDC29260	1	30,164	$59,594.00	4	No
Minivan (MV)	5717	1FDEE3FS6HDC28389	1	41,366	$59,594.00	4	No
Minivan (MV)	5718	1FDEE3FS4HDC33445	1	41,641	$59,594.00	4	No
Minivan (MV)	5719	1FDEE3FS6HDC33446	1	35,576	$59,594.00	4	No
Minivan (MV)	5720	1FDEE3FS8HDC33447	1	24,347	$59,594.00	4	No
Minivan (MV)	5721	1FDEE3FSXHDC33448	1	28,866	$59,594.00	4	No

Asset Class	Asset Name	ID/Serial Number	Age	Vehicle Mileage	Replacement Cost/Value	Useful Life Benchmark	At or Past ULB
Minivan (MV)	5722	1FDEE3FS1HDC33449	1	31,502	$59,594.00	4	No
Minivan (MV)	5723	1FDEE3FS8HDC33450	1	37,311	$59,594.00	4	No
Minivan (MV)	5724	1FDEE3FSXHDC33451	1	31,061	$59,594.00	4	No
Minivan (MV)	5726	1FDEE3FS3HDC33453	1	27,893	$59,594.00	4	No
Minivan (MV)	5727	1FDEE3FS5HDC33454	1	24,454	$59,594.00	4	No
Minivan (MV)	5728	1FDEE3FS7HDC33455	1	22,073	$59,594.00	4	No
Minivan (MV)	5729	1FDEE3FS9HDC33456	1	28,581	$59,594.00	4	No
Minivan (MV)	5730	1FDEE3FS0HDC33457	1	27,358	$59,594.00	4	No
Minivan (MV)	5731	1FDEE3FS2HDC33458	1	24,976	$59,594.00	4	No
Minivan (MV)	5732	1FDEE3FS4HDC33459	1	33,360	$59,594.00	4	No
Cutaway Bus (CU)	1208	1FDFE4FS5JDC04021	0	11,634	$75,941.00	7	No
Cutaway Bus (CU)	1209	1FDFE4FS7JDC04022	0	21,489	$75,941.00	7	No
Bus (BU)	1670	15GGD2714J3191296	0	5,008	$440,492.00	12	No
Bus (BU)	1671	15GGD271XJ3191299	0	7,507	$440,492.00	12	No
Bus (BU)	1672	15GGD2718J3191298	0	6,518	$440,492.00	12	No
Bus (BU)	1673	15GGD2716J3191297	0	7,708	$440,492.00	12	No
Minivan (MV)	5735	1FDEE3F69JDC18545	0	5,145	$59,594.00	4	No
Minivan (MV)	5736	1FDEE3F60JDC18546	0	2,844	$59,594.00	4	No
Minivan (MV)	5737	1FDEE3F62JDC18547	0	3,551	$59,594.00	4	No
Minivan (MV)	5738	1FDEE3F63JDC17276	0	3,243	$59,594.00	4	No
Minivan (MV)	5739	1FDEE3F64JDC18548	0	6,562	$59,594.00	4	No
Minivan (MV)	5740	1FDEE3F66JDC18549	0	5,282	$59,594.00	4	No
Minivan (MV)	5741	1FDEE3F62JDC18550	0	5,004	$59,594.00	4	No
Minivan (MV)	5742	1FDEE3F64JDC18551	0	5,152	$59,594.00	4	No
Minivan (MV)	5743	1FDEE3F66JDC18552	0	6,455	$59,594.00	4	No
Minivan (MV)	5744	1FDEE3F68JDC18553	0	6,593	$59,594.00	4	No

Asset Class	Asset Name	ID/Serial Number	Age	Vehicle Mileage	Replacement Cost/Value	Useful Life Benchmark	At or Past ULB
Minivan (MV)	5745	1FDEE3F65JDC17277	0	7,634	$59,594.00	4	No
Minivan (MV)	5746	1FDEE3F6XJDC18554	0	3,883	$59,594.00	4	No
Minivan (MV)	5747	1FDEE3F61JDC18555	0	3,633	$59,594.00	4	No
Minivan (MV)	5748	1FDEE3F63JDC18556	0	3,045	$59,594.00	4	No
Minivan (MV)	5749	1FDEE3F67JDC17278	0	2,457	$59,594.00	4	No
Minivan (MV)	5750	1FDEE3F60JDC20751	0	2,123	$59,594.00	4	No
Minivan (MV)	5751	1FDEE3F62JDC20752	0	3,298	$59,594.00	4	No
Minivan (MV)	5752	1FDEE3F64JDC20753	0	1,321	$59,594.00	4	No
Minivan (MV)	5753	1FDEE3F66JDC20754	0	1,007	$59,594.00	4	No
Minivan (MV)	5754	1FDEE3F68JDC20755	0	1,006	$59,594.00	4	No
Minivan (MV)	5755	1FDEE3F6XJDC20756	0	1,293	$59,594.00	4	No
Minivan (MV)	5756	1FDEE3F61JDC20757	0	1,505	$59,594.00	4	No
Minivan (MV)	5757	1FDEE3F63JDC20758	0	3,144	$59,594.00	4	No
Minivan (MV)	5758	1FDEE3F65JDC20759	0	2,132	$59,594.00	4	No
Minivan (MV)	5759	1FDEE3F61JDC20760	0	2,532	$59,594.00	4	No
Minivan (MV)	5760	1FDEE3F63JDC20761	0	2,415	$59,594.00	4	No
Minivan (MV)	5761	1FDEE3F65JDC20762	0	2,617	$59,594.00	4	No
Minivan (MV)	5762	1FDEE3F67JDC20763	0	1,781	$59,594.00	4	No
Minivan (MV)	5763	1GDEE3F69JDC20764	0	2,610	$59,594.00	4	No
Minivan (MV)	5764	1FDEE3F60JDC20765	0	1,516	$59,594.00	4	No
Minivan (MV)	5765	1FDEE3F62JDC20766	0	2,998	$59,594.00	4	No
Minivan (MV)	5766	1FDEE3F64JDC20767	0	2,467	$59,594.00	4	No
Minivan (MV)	5767	1FDEE3F6XJDC22538	0	1,385	$59,594.00	4	No
Minivan (MV)	5768	1FDEE3F66JDC20768	0	4,792	$59,594.00	4	No
Minivan (MV)	5769	1FDEE3F68JDC20769	0	500	$59,594.00	4	No
Minivan (MV)	5770	1FDEE3F61JDC22539	0	751	$59,594.00	4	No

Asset Class	Asset Name	ID/Serial Number	Age	Vehicle Mileage	Replacement Cost/Value	Useful Life Benchmark	At or Past ULB
Minivan (MV)	5771	1FDEE3F68JDC22540	0	1,802	$59,594.00	4	No
Minivan (MV)	5772	1FDEE3F6JDC20770	0	3,493	$59,594.00	4	No
Minivan (MV)	5773	1FDEE3F66JDC20771	0	1,800	$59,594.00	4	No
Minivan (MV)	5774	1FDEE3F68JDC20772	0	1,349	$59,594.00	4	No
Minivan (MV)	5725	1FDEE3FS1HDC33452	1	40,986	$59,594.00	4	No

Table B.2 Facilities

Asset Class	Facility Name	Year Built or Reconstructed as New	Direct Capital Responsibility	TERM Scale Condition	Replacement Cost/Value
Administration—Administrative Office/Sales Office	Administration Building/Main Street Operations	1897, rebuilt in 1991	Yes	3	$11,190,680
Passenger—Bus Transfer Center	Holyoke ITC Bays	2010	Yes	4	$10,440,000
Maintenance—Maintenance Facility (Service and Inspection)	Northampton Bus Maintenance Facility (VATCo)	1987	Yes	4	$3,713,426
Maintenance—Maintenance Facility (Service and Inspection)	PVTA Main Street Maintenance Garage (SATCo)	1916	Yes	2	$8,978,500
Maintenance—Maintenance Facility (Service and Inspection)	PVTA Main Street Maintenance Garage (SATCo) Barn	1983	Yes	2	$3,600,000
Maintenance—Maintenance Facility (Service and Inspection)	UMass Bus Operations & Maintenance Facility/University Transit Services	1979	Yes	3	$6,135,600
Maintenance—Maintenance Facility (Service and Inspection)	UMass Bus Operations & Maintenance Facility/University Transit Services—RTIC	2009	Yes	4	
Passenger - Bus Transfer Center	Union Station Bays	2017	No		N/A
Passenger—Bus Transfer Center	Westfield Olver Transit Pavilion	2016	Yes	5	$4,000,000

Table B.3 Equipment—Service Vehicles

Asset Class	Asset Name	ID/Serial Number	Age	Vehicle Mileage	Replacement Cost/Value	Useful Life Benchmark	At or Past ULB
Automobiles	9217	1FAHP2HW2CG140023	6	26,331	$29,331.00	8	No
Trucks and Other Rubber Tire Vehicles	9227	1FD0X5HT5GEA75275	2	7,914	$84,090.00	10	No
Trucks and Other Rubber Tire Vehicles	5562	1FDEE3FL1BDA80488	7	107,985	$54,879.00	10	No
Trucks and Other Rubber Tire Vehicles	5561	1FDEE3FL9BDA83445	7	137,920	$54,879.00	10	No
Trucks and Other Rubber Tire Vehicles	9220	1FDRF3FT1DEB14067	5	81,101	$37,924.50	10	No
Trucks and Other Rubber Tire Vehicles	9221	1FDRF3FT3DEB14068	5	43,956	$37,924.50	10	No
Trucks and Other Rubber Tire Vehicles	9414	1FDRF3HT1HEC81113	1	4,889	$66,943.00	10	No
Trucks and Other Rubber Tire Vehicles	9218	1FDRF3HT2CEC12682	6	7,852	$66,943.00	10	No
Trucks and Other Rubber Tire Vehicles	9415	1FDRF3HTXHEC81112	1	6,500	$66,943.00	10	No
Trucks and Other Rubber Tire Vehicles	5520	1FDWE35L89DA73442	8	174,052	$50,895.00	10	No
Automobiles	9230	1FM5K8AR0GGB89175	2	19,211	$29,331.00	8	No
Automobiles	9229	1FM5K8AR1GGB97513	2	19,848	$29,331.00	8	No
Automobiles	9228	1FM5K8AR4GGB89177	2	19,995	$29,331.00	8	No
Automobiles	9232	1FM5K8AR6GGB97510	2	25,712	$29,331.00	8	No
Automobiles	9231	1FM5K8ARXGGB97509	2	16,591	$29,331.00	8	No
Automobiles	9211	1FMCU59319KC38173	9	101,281	$29,331.00	8	Yes
Automobiles		1FMCU59319KC41378	9	85,719	$29,331.00	8	Yes
Automobiles	9212	1FMCU59339KC38174	9	147,304	$29,331.00	8	Yes
Automobiles	9213	1FMCU59369KC41375	9	102,391	$29,331.00	8	Yes
Automobiles	9214	1FMCU59389KC41376	9	82,653	$29,331.00	8	Yes
Automobiles	9210	1FMCU593X9KC38172	9	92,896	$29,331.00	8	Yes
Automobiles	9140	1FMCU59H08KA15990	11	156,744	$29,331.00	8	Yes
Automobiles	516	1FMCU59H28KA15991	11	32,714	$29,331.00	8	Yes
Automobiles	9215	1FMCU5K39BKC31116	7	79,081	$29,331.00	8	Yes

Asset Class	Asset Name	ID/Serial Number	Age	Vehicle Mileage	Replacement Cost/Value	Useful Life Benchmark	At or Past ULB
Automobiles	9416	1FMCU9G92JUC20174	0	506	$29,331.00	8	No
Automobiles	9412	1FMCU9G98HUD43990	4	10,105	$29,331.00	8	No
Automobiles	9413	1FMCU9G9XHUD43991	4	12,981	$29,331.00	8	No
Automobiles	9410	1FMCU9GX0EUD09889	4	29,411	$29,331.00	8	No
Automobiles		1FMCU9GX1EUD09884	4	34,287	$29,331.00	8	No
Automobiles	9406	1FMCU9GX3EUD09885	4	24,371	$29,331.00	8	No
Automobiles		1FMCU9GX4EUD09880	4	30,021	$29,331.00	8	No
Automobiles	9407	1FMCU9GX5EUD09886	4	38,280	$29,331.00	8	No
Automobiles		1FMCU9GX6EUD09881	4	41,565	$29,331.00	8	No
Automobiles	9408	1FMCU9GX7EUD09887	4	46,827	$29,331.00	8	No
Automobiles	9411	1FMCU9GX7EUD09890	4	36,253	$29,331.00	8	No
Automobiles	9403	1FMCU9GX8EUD09882	4	36,795	$29,331.00	8	No
Automobiles	9409	1FMCU9GX9EUD09888	4	50,195	$29,331.00	8	No
Automobiles	9404	1FMCU9GXXEUD09883	4	15,057	$29,331.00	8	No
Automobiles	9417	1FMCU9HD7JUA93196	0	-	$29,331.00	8	No
Automobiles	9137	1FMZU72K64UB16929	14	92,899	$29,331.00	8	Yes
Trucks and Other Rubber Tire Vehicles	T-12	1FTRF3BT5CEB43421	6	1,458	$63,295.00	10	No
Trucks and Other Rubber Tire Vehicles	9216	1FTRF3BT6BED04504	7	35,521	$38,535.00	10	No
Trucks and Other Rubber Tire Vehicles	9203	1FTSF31F42EA20799	16	173,320	$25,080.00	10	Yes
Trucks and Other Rubber Tire Vehicles	9204	1FTSF31F62EA20836	16	80,137	$25,080.00	10	Yes
Trucks and Other Rubber Tire Vehicles	9208	1GBJC34K08E207368	9	117,421	$32,173.00	10	No
Trucks and Other Rubber Tire Vehicles	9207	1GCHK24618E207003	9	23,103	$31,914.00	10	No
Trucks and Other Rubber Tire Vehicles	9386	2FTHF36F6TCA39462	22	63,308	$27,747.00	10	Yes
Automobiles	9224	JTDKN3DU9C1540826	5	10,523	$29,331.00	8	No
Automobiles	9222	JTDKN3DUXC1541984	5	14,522	$29,331.00	8	No

Appendix C. Facility Condition Assessments

Table C.1 Northampton

ID	Main Component	Sub-Component	Task	Currently included in PVTA's Northampton Inspection Reports	Tasks Currently included in inspection reports	Weighting Factor (Number of Units, % of Area, % of Value)	Condition Rank/ Rating Score	Notes	Main Component Median	Facility Median
A	Substructure	Foundations: Walls, columns, pilings, etc	Foundations: Inspect walls, columns, pilings, other structural elements for signs of decay.				4	not new but no cracking	4	4
		Basement: Materials, insulation, slab, floor underpinnings	Basement: Inspect non-foundation and structural elements such as facing materials, insulation, slab, floor underpinnings, crawl spaces, etc.				N/A	no basement		
B	Shell	Superstructure / structural frame: Columns, pillars, walls	Inspect superstructure / structural frame, including columns, pillars, and walls.				4	more than 5 years old but no issues aside from minor caulking that needs replacing because dried out	4	
		Roof: Roof surface, gutters, eaves, skylights, chimney surrounds	Inspect roof, including roof surface (tiles, membrane, shingles, gravel etc.), gutters, eaves, skylights, flashing, chimney surrounds, and sealants, hardware and painted or coated surfaces. Note evidence of ponding, or roof leaks, significant age – and				5	replaced 11/16		

ID	Main Component	Sub-Component	Task	Currently included in PVTA's Northampton Inspection Reports	Tasks Currently included in inspection reports	Weighting Factor (Number of Units, % of Area, % of Value)	Condition Rank/ Rating Score	Notes	Main Component Median	Facility Median
			other indicators that repair may be necessary. Note age of roof(s) and whether warranty is still in effect.							
		Exterior: Windows, doors, and all finishes (paint, masonry)	Inspect windows, doors, and all finishes (paint, masonry).				4	most of the windows are new as well as about 1/2 the doors (not include bay doors)		
		Shell appurtenances: Balconies, fire escapes, gutters, downspouts	Inspect façade, curtain wall system, glazing system, exterior sealants, exterior balconies, doors, stairways, parapets, fire escapes, gutters, downspouts.				4	not new but no visible issues. No balcony or fire escapes. Gutters and downsouts are connected to city waster water		
C	Interior (All interior spaces, regardless of use)	Partitions: Walls, interior doors, fittings and signage	Inspect soundness and finish of drywall, partitions, interior doors, fittings, ceiling tiles, and signage.				5	redone as part of the building rehab in 2014 for office area.	5	
		Stairs: Interior stairs and landings	Inspect stairs including fire and access issues.				4	only one set of stairs to mezzanie for Maintenance and no issues		
		Finishes: Materials used on walls, floors, and ceilings	Inspect interior finishes, including materials used on				5	new		

ID	Main Component	Sub-Component	Task	Currently included in PVTA's Northampton Inspection Reports	Tasks Currently included in inspection reports	Weighting Factor (Number of Units, % of Area, % of Value)	Condition Rank/ Rating Score	Notes	Main Component Median	Facility Median
			walls, floors, and ceilings, such as tile, paint, and other coatings. Look for roughness and damage.							
C.1	Interior: Body Shop, Maintenance Shop, Bus Storage Area, Wash Rack Area			Body Shop	Check oil level in the lift tank, grease lift motor, check sandblaster for sand and check all lights.		N/A		4	
				Maintenance Shop	Check all oil, ATF, gear oil, guns are in good working order and readable, all drop lights are in good order, check all tanks for leakage, check all lights, check all fans, check all exhaust fans.		4	good but old		
				Bus Storage Area	Check all lights, check all doors for damage, clean all water channels/drai		3	minor cracking on the floor		

ID	Main Component	Sub-Component	Task	Currently included in PVTA's Northampton Inspection Reports	Tasks Currently included in inspection reports	Weighting Factor (Number of Units, % of Area, % of Value)	Condition Rank/ Rating Score	Notes	Main Component Median	Facility Median
					ns, check fuel dispensers for leaks.					
				Wash Rack Area	Check walls for cleanliness, check all grease traps, check oil-water separator to see if it needs cleaning, check fuel dispenser for leaks.		4	good but old		
D	Conveyance	Elevators	Inspect condition, function, and code compliance of elevators, escalators, lifts, and any other fixed apparatuses for the movement of goods or people.				N/A			
		Escalators					N/A			
		Lifts: Any other such fixed apparatusess for the movement of goods or people		Check Lifts	Are lifts operating correctly, are locks clean and operating, check for leaks.		N/A			
E	Plumbing	Fixtures	Inspect fixtures and pipes for water distribution, sanitary				4	not new but no issues	4	

ID	Main Component	Sub-Component	Task	Currently included in PVTA's Northampton Inspection Reports	Tasks Currently included in inspection reports	Weighting Factor (Number of Units, % of Area, % of Value)	Condition Rank/ Rating Score	Notes	Main Component Median	Facility Median
			waste, rainwater drainage, and any leaks.							
		Water Distribution					4	no issues with water pressure		
		Sanitary Waste					3	admin side is great 5 but the bus wash bay is an issue. The air recirculator broke and instead of fixing or replacing ran piping to roof to collect rainwater so when it rains it agitates the water adding air preventing bacteria from growing. issue when no rain and it becoems smelly		
		Rain water drainage					4	no issue all water drains away from building to grass or catch basin. On roof it goes directly into city sewer		
F	HVAC (Heating, ventilation,	Energy supply	Inspect systems and their elements for energy supply,				5		5	

ID	Main Component	Sub-Component	Task	Currently included in PVTA's Northampton Inspection Reports	Tasks Currently included in inspection reports	Weighting Factor (Number of Units, % of Area, % of Value)	Condition Rank/ Rating Score	Notes	Main Component Median	Facility Median
	and air conditioning)		heating and cooling systems, distribution systems, terminal and package units, controls and instrumentation including testing and balancing, and chimneys. Specifically, inspect coils, housing, drains, and wiring and evaluate overall performance of the system.							
		Heat generation and distribution sytems	Note apparent or reported age of the equipment, past material element replacements/ upgrades, and the apparent level of maintenance exercised. If heating equipment is shut down or not operational at the time of the walk-through survey, provide an opinion of the condition to the extent observed. Note refrigerants and fuels used and their suitability or need for improvement / upgrade.	Boiler Room	Start emergency generator - run ten minutes, check batts for water and voltage, check air dryer for air leaks, check air compressor - check hours and record and check boiler for leaks.		5			

ID	Main Component	Sub-Component	Task	Currently included in PVTA's Northampton Inspection Reports	Tasks Currently included in inspection reports	Weighting Factor (Number of Units, % of Area, % of Value)	Condition Rank/ Rating Score	Notes	Main Component Median	Facility Median
		Cooling generation and distribution systems					5			
		Testing, balancing, controls and instrumentation.					5			
		Chimneys and vents					4	it's all roof mounted. There is one unit in manintance that is not but it was disconnected		
G	Fire Protection	Sprinklers	Inspect sprinklers, standpipes, hydrants, fire alarms, emergency lighting, smoke evacuation, stairwell pressurization, and any other specialized elements relating to overall protection system and compliance.	UST Monitoring Panel/Alarm History	Monitoring system is powered on and in proper operating mode, system is not currently showing any alarms or warnings, alarm history report/log for the previous month is available, and has been reviewd by the designated UST operator, each alarm for the previous month has been		4	new system installed in 2009. dry system that replaced wet	4	

ID	Main Component	Sub-Component	Task	Currently included in PVTA's Northampton Inspection Reports	Tasks Currently included in inspection reports	Weighting Factor (Number of Units, % of Area, % of Value)	Condition Rank/ Rating Score	Notes	Main Component Median	Facility Median
					responded to appropriately, senors located in tank-top containment sumps have not alarmed in the past month.					
		Standpipes					4	not new but no issues		
		Hydrants and other fire protection specialities					N/A			
H	Electrical	Electrical service and distribution	Inspect electrical service & distribution, noting deficiencies or needed / recommended upgrades				2	electrical boxes and such are in good condition but are at capacity. Not enough power being drawn from street to add anyting else	3.5	
		Lighting and branch wiring (interior and exterior)	Inspect lighting and branch wiring (interior and exterior), communications and security, noting deficiencies or needed / recommended upgrades				5	2012 lighting upgrade		
		Communications and security	Examine other electrical system-related pieces such as				4	no solar. New camera. Generator is old		

ID	Main Component	Sub-Component	Task	Currently included in PVTA's Northampton Inspection Reports	Tasks Currently included in inspection reports	Weighting Factor (Number of Units, % of Area, % of Value)	Condition Rank/ Rating Score	Notes	Main Component Median	Facility Median
			lightning protection, generators, emergency lighting, and elements related to electrical service and distribution such as conduit, boxes, solar panels and mountings for any damage wire chaffing or loose or corroded connections. Evaluate overall performance of the system.					but works, energency lighting good		
		Other electrical system-related pieces such as lightning protection, generators, and emergency lighting.					3	generator is original to building. Maintained well but not efficient		
I	Equipment*	Equipment related to the function of the facility, including maintenance or vehicle service equipment (does not include supplies).	Inspect equipment, noting age, condition, and functional deficiencies.	Underground Storage Tank - Monitoring Panel/Alarm History, System Inspection, Paperwork inspection and Facility Employee Training	Monitoring system is powered on and in proper operating mode, system is not currently showing any alarms or warnings, alarm history report/log for the previous month is available, and has been reviewd by		3	some equipment like air compressor has been upgraded but a lot is original to building and needs upgrade such as lifts, welding tools and bus washer	3	

ID	Main Component	Sub-Component	Task	Currently included in PVTA's Northampton Inspection Reports	Tasks Currently included in inspection reports	Weighting Factor (Number of Units, % of Area, % of Value)	Condition Rank/ Rating Score	Notes	Main Component Median	Facility Median
					the designated UST operator, each alarm for the previous month has been responded to appropriately, senors located in tank-top containment sumps have not alarmed in the past month. Additional inspections detail included in report.					
			For Maintenance Facilities, this is focused on major pieces of equipment integral to the function of the facility.			I don't know what to look for here				
			For Passenger Facilities, this item is focused on the fare collection system and any associated elements.				N/A			
J	Site	Roadways/driveways and associated signage,	Inspect roadways/driveways and associated signage, markings,				3	this I am considering the driveway bit from the bay	3.5	

ID	Main Component	Sub-Component	Task	Currently included in PVTA's Northampton Inspection Reports	Tasks Currently included in inspection reports	Weighting Factor (Number of Units, % of Area, % of Value)	Condition Rank/ Rating Score	Notes	Main Component Median	Facility Median
		markings, and equipment	and equipment. Look for cracking or settling of the concrete or asphalt.					doors out to the road. It has cracking		
		Parking lots and associated signage, markings, and equipment	Inspect parking lots and associated signage, markings, and equipment. Look for cracking or settling of the concrete or asphalt				4	parking area was repaved in 14 as part of building rehab = 5. but concrete pad going into bus wash and where fuel is delivered is detoriating and crack = 2 small percent of overall area though hence the 4		
		Pedestrian areas and associated signage, markings, and equipment.	Inspect pedestrian areas and associated signage, markings, and equipment. Inspect the curbing and ramps for cracking, settling, holes, uneven surfaces and trip hazards. Pay special attention to wheelchair ramp areas and other ADA / access considerations.				4	ADA ramp missing detectable warning		
		Site development such as fences, walls, and	Site development such as fences, walls, and miscellaneous structures. Look for	Overhead crane	Functions well, inspect lose wires or bolts, wires		1	includes the guardrail in the northeast corner which is		

ID	Main Component	Sub-Component	Task	Currently included in PVTA's Northampton Inspection Reports	Tasks Currently included in inspection reports	Weighting Factor (Number of Units, % of Area, % of Value)	Condition Rank/ Rating Score	Notes	Main Component Median	Facility Median
		miscellaneous structures.	corrosion, structural integrity and condition of paint.		chafing or obstructed, chains in good condition?			complaetely on the ground. Also include wall by bus bay exit. Slab wall and where meets for 90 degrees one wall is beignning to lean and there is a 1.5 inch gap and caulking is no good. wall in good condition otherwise.		
		Landscaping and irrigation.	Landscaping, Site Utilities: Look for signs of drainage problems such as flooded areas, eroded soil and water damage to the asphalt and clogged storm drain inlets. Visually inspect the irrigation system, if installed. Look for signs of leaks, such as sagging areas in grass and/or pooling water. Look for dead spots in the grass indicating lack of water possibly caused by a mechanical failure.				4	no irrigation. Is lighting. Trees are blockign the ligh shed		

ID	Main Component	Sub-Component	Task	Currently included in PVTA's Northampton Inspection Reports	Tasks Currently included in inspection reports	Weighting Factor (Number of Units, % of Area, % of Value)	Condition Rank/ Rating Score	Notes	Main Component Median	Facility Median
		Site utilities	Inspect passenger huts and benches for corrosion, paint condition, glass condition and damage.				3	old shelter used as smoking shelter not for passenger use though only employee		

Table C.2 Westfield

ID #	Primary Level	Secondary Level (Description)	Value	TERM Rating	Value
A	Substructure	• Foundations: Walls, columns, pilings, etc. • Basement: Materials, insulation, slab, floor underpinnings	$344,771.71	5	9.5%
B	Shell	• Superstructure/structural frame: Columns, pillars, walls • Roof: Roof surface, gutters, eaves, skylights, chimney surrounds • Exterior: Windows, doors, and all finishes (paint, masonry) • Shell appurtenances: Balconies, fire escapes, gutters,downspouts	$1,478,866.34	5	40.8%
C	Interiors	• Partitions: Walls, interior doors, fittings and signage • Stairs: Interior stairs and landings • Finishes: Materials used on walls, floors, and ceilings • Covers all interior spaces, regardless of use.	$341,260.02	5	9.4%
D	Conveyance	• Elevators • Escalators • Lifts: Any other such fixed apparatuses for the movement of goods or people	$ –	5	0.0%
E	Plumbing	• Fixtures • Water distribution • Sanitary waste • Rain water drainage	$104,060.04	5	2.9%

ID #	Primary Level	Secondary Level (Description)	Value	TERM Rating	Value
F	HVAC	• Energy supply • Heat generation and distribution systems • Cooling generation and distribution systems • Testing, balancing, controls, and instrumentation • Chimneys and vents	$359,858.07	5	9.9%
G	Fire Protection	• Sprinklers • Standpipes • Hydrants and other fire protection specialties	$13,681.96	5	0.4%
H	Electrical	• Electrical service & distribution • Lighting & branch wiring (interior and exterior) • Communications & security • Other electrical system-related pieces such as lightning protection, generators, and emergency lighting	$422,686.08	5	11.6%
I	Equipment	• Equipment related to the function of the facility, including maintenance or vehicle service equipment – does not include supplies	$32,132.24	5	0.9%
J	Site	• Roadways/driveways and associated signage, markings, and equipment • Parking lots and associated signage, markings, and equipment • Pedestrian areas and associated signage, markings, and equipment • Site development such as fences, walls, and miscellaneous structures • Landscaping and irrigation • Site utilities	$531,149.90	5	14.6%

Appendix D. Maintenance Policies and Plans

VEHICLE MAINTENANCE PLAN

Springfield Area Transit Company
Valley Area Transit Company

Edited 1-15-18

Maintenance Plan

Fleet Maintenance Policy

The highest degree of success in the maintenance function and improvements in vehicle, performance and reliability are a direct result of the development of highly trained and motivated personnel, and comprehensive and continually improving preventive maintenance programs.

The SATCo/VATCo Maintenance Policy is as follows:

> SATCo/VATCo, Inc. will provide safe and mechanically sound vehicles, equipment and facilities to support the transit requirements of the Pioneer Valley Transit Authority (PVTA.) SATCo/VATCo will plan, schedule and control all maintenance to vehicles, equipment and facilities assigned by the PVTA. This includes close coordination and a partnership between the PVTA and SATCo/VATCo including maintenance policy and planning. SATCo/VATCo is responsible for controlling the individual expenditures of labor and materials within the maintenance function, under the annual approved operating and capital budgets, and specific directives from the PVTA. Maintenance performance reviews will be conducted as required to ensure peak overall performance of the Maintenance operation and as otherwise required.

It is the objective of SATCo/VATCo to meet, and, if beneficial and practical, to exceed all requirements of this maintenance policy and procedures plan, manufacturers' preventive maintenance schedules, and all specifications and warranty conditions.

Shop and Yard Safety Policy

The SATCo/VATCo Maintenance Safety Program is ongoing, comprehensive and rigorous throughout the department, and consists of daily, persistent assessment and attention to safety issues, and regular safety inspections and reviews to ensure that all protective measures are in use and that work safety procedures are being carefully and consistently followed, as well as complying with Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) and Massachusetts Department of Environmental Protection (DEP) rules and work practices.

Maintenance Training Policy

Beyond attendance of maintenance employees at various relevant workshops and seminars, SATCo/VATCo is proud of its in-house culture of sharing knowledge and skills, as well as its Maintenance Department Pay for Knowledge Program which now focuses on ASC certification testing for advancement in the skilled job classifications. With the implementation of these systems, organizational gains include: improved communications and consistency of procedures; cost-effectively trained, more highly

skilled mechanics; and increased motivation and productivity in the maintenance department.

SATCo has developed a training partnership with the Amalgamated Transit Union. Working closely with Union representatives locally and at times the national level, the goal of this partnership is to identify unmet training needs and secure funding and training resources to meet current and future training needs.

With this in mind a maintenance training needs survey was conducted in 2011. All Mechanics and Technicians completed a detailed survey to determine the priority for technical training which led to submission of an application for funds for skills training.

The Union and the Company have also jointly reviewed and revised the Pay for Knowledge Program in an effort to both standardize and formalize testing requirements and ensure that the program meets the needs of changing skill levels required to maintain newer transit bus designs.

Vehicle Maintenance Program Details

Following are performance highlights of the current SATCo/VATCo Fleet Maintenance Plan:

1. Vehicle Performance - The performance of the bus fleet maintained by SATCo/VATCo is regularly monitored through a number of monthly reports including fuel economy, fuel use and the mean distance between failures (MDBF). Fuel economy is of special importance given the increasing cost of diesel fuel and the interest in tracking hybrid diesel electric bus performance.

   In addition, SATCo-VATCo has worked with PVTA to simplify vehicle tracking by assigning road numbers that designate buses by garage location, size and age groups beginning with buses purchased in 2006.

2. Preventative Maintenance Program - All PVTA vehicles are subject to a comprehensive scheduled preventive maintenance (PM) program and safety inspection at regular mileage intervals. In addition, SATCo/VATCo uses a series of internal PM programs for specific systems.

   Special attention is paid to vehicle features and equipment required by the Federal Transit Administration for compliance with the Americans with Disabilities Act (ADA). This includes wheelchair lifts and ramps; exterior lighting; securement belts, retractors and other equipment; kneeling features; dual STOP REQUEST driver notification; folding passenger seating; public address system, including automatic stop announcement; safety interlocks and related equipment.

   Federal Transit Administration Triennial Review - Once every three (3) years, officials from the Federal Transit Administration review this Maintenance Plan,

vehicle records, PM programs, maintenance practices and the vehicles themselves as part of their triennial review. A monthly report using the same criteria as the Federal Transit Administration Triennial Review for preventative maintenance inspections of all vehicles is generated and reviewed by the Director of Maintenance and the General Manager each month.

3. In-House Maintenance Capability - Evidence of SATCo/VATCo technical capabilities is also reflected by the fact that virtually100% of all fleet maintenance requirements are performed in-house, including all major overhauls. The only exceptions are certain types of repairs that are not cost beneficial to perform in-house due to the technical nature (e.g., certain two-way radio repairs and service), or because of the cost of providing specialized equipment (e.g., frame straightening, bus towing, etc.)

4. Troubleshooting Resource – Vehicle and component manufacturers who supply buses and vans to the PVTA and other transit systems have relied on the technical expertise available at SATCo/VATCo repeatedly for help in improving their products and troubleshooting problems encountered in other parts of the country.

5. Warranty – Any vehicle that develops a problem while under warranty is referred to the vendors field representative to order parts and repair the vehicle at no cost to the PVTA. A PVTA maintenance person shall then reinspect to ensure the issue has been resolved.

Fleet maintenance activities are accomplished by organizing the shop and service facilities and employees into functional areas as described below:

Scheduled Preventive Maintenance Inspections

The goal of the Preventive Maintenance Program is to reduce failures and to preserve and extend the efficient vehicle life of the PVTA's fleet to the practical maximum. Persistent problems are researched and analyzed using the maintenance computer system, technical library, internet sources, manufactures representatives and peer group networking to prevent breakdowns and solve maintenance and operational problems of specific buses, subfleets, and the fleet as a whole. This process helps reduce the frequency of road calls, cost of replacement parts and labor needed to provide fleet maintenance and repair services.

Scheduled preventative maintenance is implemented in two separate categories:

PVTA Paratransit Vehicles and Non-Revenue Vehicles – The PVTA operates Ford Type E vans for their paratransit service. There are a small number of Ford Transit Connects in the fleet also. These vehicles are inspected and serviced at 5,000 mile intervals with a goal of performing each inspection within +/- 10% of the established interval. The 5,000 mile inspection and service includes fifty (50) different procedures for paratransit vans, and thirty-eight (38) different procedures

for non-revenue vehicles. Engine oil and filter are changed each time. Additional items are inspected and serviced quarterly, semi-annually, and annually as appropriate.

Mileage readings are taken daily as each vehicle is fueled. The automated vehicle maintenance management system provides information on vehicles that are due for inspection based on the accumulated mileage and the 5,000 mile preventative maintenance inspection threshold.

The specific procedure is as follows:

1. Vehicle drives into the work stall. The inspector checks brakes, hydraulic lines and fittings, horn, defroster and heat or air conditioning, and all ADA related features and equipment. Wheelchair lift is exercised and serviced at this time.

2. The inspector checks all safety equipment and features including fire extinguisher condition and door and window exits.

3. The inspector cleans and tests the batteries. If the batteries or the rack are extremely dirty, a baking soda solution is used to clean them and then they are rinsed with water. The inspector checks all the interior and exterior lights; and oil, water and other trouble light indicators.

4. The inspector checks tire pressure, tread wear (replace at 3/32 of tread) and lug nuts; and checks the interior seating and lighting. Heater screens are removed and cleaned on vans, so equipped. The inspector then checks the exterior of the vehicle for damage or defects. The engine compartment is checked with special attention paid to fluid leaks or unusual noises; and the transmission fluid and other fluid levels are checked.

5. The vehicle is then raised on a hoist. The undercarriage is inspected and greased. Engine oil and filter are changed. All four (4) wheels are pulled and the condition of the brakes (front and rear) is checked.

6. Each item on the inspection cards is initialed as it is completed and any defects are noted. All minor defects uncovered are repaired by the inspection crew, at this time. Any major problems found are repaired by the mechanics on duty or held for a later shift.

7. When the inspection is completed, the brake system is tested. If the test is found OK, the vehicle is parked and ready for service.

8.

PVTA Heavy Duty Fixed Route Buses – The PVTA primarily operates New Flyer and Gillig diesel buses. Seven (7) of the New Flyer buses are BAE hybrid style. Additionally, PVTA operates three (3) Proterra Catalyst, all-electric buses. They also have a small group D-Series Ford cutaway buses in service on heavy duty fixed routes. These vehicles have a preventative maintenance schedule interval of 6,000 miles with a goal of performing each inspection within +/- 10% of the established interval. Engine oil, engine filters, and fuel filters are changed each inspection while the water filters and power steering filters are changed every 12,000 miles. Additional items are inspected and serviced quarterly, semi-annually, and annually as appropriate.

Two inspection forms, titled "6,000" and "12,000", are used for most heavy duty fixed route buses. The electric buses have a special form with special inspections tailed to the vehicle. The D-Series Ford cutaways are inspected using the paratransit vehicle form.

Mileage readings are collected electronically by the maintenance computer system as each vehicle is fueled. The computer system selects the buses that are due for inspection based on the accumulated mileage and the preventative maintenance inspection mileage threshold.

The specific procedure is as follows:

1. Bus drives on the pit. Inspector checks the air system pressure, brakes, air lines and fittings, horn, defroster, heat or air conditioning and overhead signs and all ADA related features and equipment. Wheelchair ramp is exercised and inspected at this time.

2. Inspector cleans and tests the batteries located on the left side of the bus. If the batteries or the tray are extremely dirty, a baking soda solution is used to clean them and then they are rinsed with water. The bus is then driven to the hoist. One inspector checks all exterior lights. Another inspector checks all interior lights and the oil, water, air pressure and other trouble lights and gauges.

3. Inspector checks the tire pressure and lug nuts and checks the aisle, seating and other interior features. HVAC screens are removed and cleaned in buses, so equipped. The inspector then checks the exterior of the bus for damage or defects. The engine compartment is checked and then, with the engine running, special attention is paid to fluid leaks or unusual noises.

4. The bus is then raised on a hoist. The undercarriage is inspected and greased, air tanks are drained and the air dryer is checked. Engine oil and filter is changed. Other filters are changed according to the mileage/schedule.

5. Each item on the inspection card is initialed as it is completed and any defects are noted. All minor defects uncovered are repaired by the inspection crew at this time. Any major problems found are recorded for repair by the mechanics on duty or held for a later shift.

6. When the inspection is complete, the bus braking system is road-tested. If the test is found OK, the bus is parked and ready for service.

Defects

Bus and van defect cards are issued to bus and van operators each day and stay with the vehicle until it returns to the appropriate garage for the night. If, during the course of the day, the operator finds any operational problems, he/she makes a note on the defect card. This card is then collected at the end of the shift or turned in to a Maintenance Foreman if a bus change is required. For buses, the service/fuel lane ("wash rack") employees determine the type of problem and, after fueling and cleaning the bus, park it in one of several locations, depending on the problem.

Buses with mechanical problems of a major nature are parked in an area limited to buses needing immediate attention or placed in a shop work area to correct the problem. Buses with minor problems, such as a broken mirror, etc. are parked in the lot in a designated location for later repair. Buses with no problems noted and buses with defects that have been repaired are parked in the vehicle storage area, ready for pullout the following day.

For other types of vehicles and at other times of the day, defects are reported directly to the maintenance department and repairs are scheduled taking into account the normal use of the vehicle.

Service/Fuel Lane

Procedures performed daily in the service and wash areas are designed to prepare each vehicle for the following day's operation by:

1. Checking to see that all windows are closed; emptying trash containers; removing debris and sweeping the bus floor. The floors are also mopped as needed.
2. Cleaning seats, step wells and wheel wells, and other dirt and debris catching areas.
3. Refueling the vehicle.
4. Checking and topping off all fluid levels, including engine oil, transmission fluid, coolant, windshield washer, and power steering fluid.
5. Removing farebox revenue and data.
6. Driving the bus through the bus wash (weather permitting).
7. Reporting vehicle defects (if such exist.)
8. Parking the bus.

Cleaning

In additional to the nightly cleaning detailed above, a more thorough interior and exterior detail cleaning is completed with a target average of no more than once every four (4) weeks.

Body and Paint Shop

The Body Shop handles accident repairs and estimates the repair cost. This department also does body work; whole bus, partial bus and spot painting; glass replacement; upholstery; cosmetic repairs; custom signs; and decal application.

All maintenance performed in the Body/Paint Shop is based on a specific work order prepared by the Foreman or Director of Maintenance.

- Accident repairs are estimated as requested by the PVTA or is completed by a third party.

- All parts required to initiate accident repairs are ordered upon completion of the repair estimate.

- Body, glass replacement, upholstery, paint/cosmetics tasks are completed by the body shop personnel who are assigned the work order.

Component Rebuilding and Change Outs

Shop rebuild capability includes: complete and partial engine rebuilding, including all subassemblies; transmission rebuilding and repairs, including all subassemblies; steering gear assemblies; differential carrier; drive lines; brake components; electrical components, including starters, generators, motors, alternators, lights, relays, horns and regulators; pneumatic/hydraulic system, including lines and fittings; heaters; radiators; compressors; pumps; valves; blowers; defrosters; switches; etc.

All component changes and rebuilds are per manufacturer recommendation, unless experience provides otherwise. In cases of campaigns and to reduce vehicle down time, components are built up ahead of time and stored until needed.

Electronics Shop

Employees in this department service technical and electronic systems and components on vehicles including two-way radios; fareboxes; destination signs; and the ITS system that includes GPS tracking, automatic stop announcement, passenger counters, Operator control heads, audio/video cameras and recorders, and other components. Technicians perform a wide range of work tasks from correcting routine defects to firmware upgrades, component programming, troubleshooting, component and subcomponent repair, preventative maintenance, campaigns and special projects.

Fluids Use Tracking and Testing

Bus performance is constantly monitored in an effort to provide peak efficiency of operation. Miles per quart and miles per gallon of diesel fuel are tracked and reported monthly.

Similarly, van and non-revenue vehicle miles per quart of motor oil used and miles per gallon of fuel usage are tracked to spot any unusual patterns and potentially serious problems that could develop.

Excessive oil or fuel use in any vehicle is brought to the attention of the Foreman or Director of Maintenance immediately and appropriate corrective action is taken.

Similarly, testing is performed on samples of fluids for special situations requiring such testing. This includes sampling where appropriate of early detection of potentially serious mechanical or fluids quality problems.

Life Expectancy PM Program

Where possible, SATCo/VATCo use a "Replace before Fail" process for the fleet. The program is designed to anticipate and replace components (based on known failure and life expectancy rates) before they fail in a cost effective manner, thus avoiding an in-service failure and unnecessary road service. This program is indicative of a proactive approach to fleet maintenance.

Emergency Road Calls

The goal of any service call is to repair the vehicle safely and to return it to service as quickly as possible.

If a vehicle breaks down in service or deadheading, the driver of the disabled vehicle calls the Dispatcher. Once contact is made, the Dispatcher will instruct the Operator by radio of possible methods of getting the vehicle operational without the need for maintenance road service.

If this procedure is not successful, the Dispatcher will, depending on the severity of the problem, change the vehicle with a similar vehicle or call maintenance immediately and notify the Foreman on duty of the problem. If a vehicle change is not practical, the Foreman will then send a mechanic to the disabled vehicle to allow the mechanic to determine the extent of the problem and make repairs, if possible. The mechanic will bring adequate tools for the job and any parts and supplies the mechanic believes are likely to be necessary. After assessing the problem, if the repair is relatively simple, and can be made safely in the field, the repair will be made. If the mechanic feels the repair cannot be safely or practically made, the mechanic will call the Foreman to request that

the vehicle be towed. All bus towing is done by a contracted towing company to tow the bus back to the property. Vans are towed using PVTA equipment and trained SATCo employees.

Working with the maintenance department, Bus Operator, and any Transit Supervisors sent to the scene, the Dispatcher will determine how best to provide the least interruption of service to the customers.

Spill Control Procedures

In accordance with the PVTA Spill Prevention Control and Countermeasures Plan (SPCCP), the following procedures are in effect:

- All service trucks and Transit Supervisors' vehicles are equipped with spill control kits. Kits include socks and pads. Spill kits are also provided for the yards, shops and storage buildings. Maintenance and operations employees responding to vehicle service calls, building and yard spills are trained to properly use these kits.

- In the event of a spill (i.e. fuel oil or motor oil), the employee is to call the Dispatcher or Foreman, as appropriate, and report the incident in detail. This will allow a Foreman to identify the proper method of cleaning up the spill and whether or not the spill is to be reported to the Director of Maintenance, General Manager or Assistant Director of Maintenance.

- For each reported spill, the Director of Maintenance, General Manager or Assistant Director of Maintenance will determine the response and action based on the information reported, a field check if necessary, and the PVTA SPCCP guidelines and applicable government regulations.

Maintenance Computer System

The maintenance computer system is a comprehensive fleet management software program that is used to track and report vehicle mileage, fuel and fluids use, processing of work orders, vehicle histories, fleet and vehicle information, parts use and inventory.

The system currently produces maintenance related reports for management and employee use, with the capability for expansion. The computer-generated reports are used as management, scheduling and inventory control tools within and outside the maintenance department. The following are examples of available reports:

1. Inventory stock status report
    a. By part number
    b. By bin / location
2. Receiving edit report
3. Receiving report
4. Mileage reports
    a. By vehicle
        1. Current odometer mileage
        2. Actual vehicle mileage
    b. By subfleet
        1. Total fleet mileage
        2. Average vehicle mileage
5. Report generator for fuel and oil usage
6. Vehicle history report.
7. Preventative maintenance scheduling
8. Work order tracking.

PREVENTATIVE MAINTENANCE INSPECTION WORKSHEET

PARATRANSIT VAN

UNIT INSPECTION SERVICE-ORDER

DATE COMPLETED_____

SPECIAL INSTRUCTIONS:

5000 MILE INSPECTION

CURRENT MILEAGE_____	VAN #	DATE:_____
WORK ORDER NO:		PREVIOUS MILES:

INSPECTIONS:	BADGE#
GROUP 1 - FRONT AXLE	
Check wheel nuts	
Check tires & tire pressure	
Check steering parts	
Complete chassis lube	
Check shock absorbers	
Check idler arm drag link	
GROUP 2 - REAR AXLE	
Check wheel nuts	
Check tires & tire pressure	
Check suspension parts	
GROUP 3 - DRIVE LINE	
Check & lube U-joints	
Check emergency brake / Parking Brake	
Check differential oil	
GROUP 4 - ENGINE	
Check water pump play	
Check all fluids	
ATF	
Power steering fluid & belt	
Water	
Test antifreeze level °F	
Battery	
Check air filter condition	
Brake fluid	
Road test van	
GROUP 5 - ELECTRICAL	
Check all lights (interior & exterior)	
Check electric accessories	
Battery clean terminals	

	BADGE#
GROUP 6 - COOLING/HEATING	
Check all hoses & fittings	
Check A/C function	
Check defroster & heaters	
Inspect exhaust system	
Check cable for chaffing above catalytic-converter	
Check Coolant Inhibitor	
GROUP 7 - WHEELCHAIR	
Check lift & lube all life wear points	
Check functions of tie downs	
Check seat condition	
Check speed of lift	
Check lift hinges	
Inspect stress points for wear	
GROUP 8 - SAFETY EQUIPMENT	
Verify installation & condition of	
Seat belts & Lift Belt	
Fire extinguisher	
First Aid kit	
Chock blocks	
Reflectors	
Change engine oil & oil filter	
Check front & rear brake linings	
CHECK INSPECTION STICKER	
SEMI-ANNUAL ADDITONS:	
Check A/C pressure with gauges	
Tune engine - adjust carburetor	
ANNUAL ADDITIONS	
CHECK ALL OF ABOVE, PLUS	
Drain cooling system	
Drain transmission & replace filter	
Lubricate door hinges & rear exit door	
Lubricate hood release	

ADDITIONAL WORK PERFORMED

Entered on vehicle field_____ Date_____

FUTURE WORK REQUIRED

Foreman"s Signature

DATE:

Life Miles @ last PM:

Life Miles @ Flagging:

Meter @ Flagging:

PREVENTATIVE MAINTENANCE INSPECTION WORKSHEET

NON-REVENUE VEHICLE

5000 Mile Inspection			
Work Order #:_____		Currant Mileage:_____	
Date:_____ Vehicle #:_____		Previous Mileage:_____	
	Badge #		Badge #
Group 1 - Front Axle		**Group 5 - Electrical**	
Check wheel nuts		Check interior lights	
Check tires and tire pressure (3/32)		Check exterior lights	
Check tie rods		Check strobe lights	
Check idler arm & drag link		Check battery	
Check wheel bearings		Check horn	
Check ball joints			
Complete chassis lube		**Group 6 - Cooling and Heating**	
Check shock absorbers		Check A/C function	
Check brakes		Clean condenser and radiator	
Check differential fluid		Check Blower motors	
		Check all hoses and fittings	
Group 2 - Rear Axle		Check heater	
Check wheel nuts			
Check tires and tire pressure (3/32)		**Group 7 - Misc. Equipment**	
Check Springs		Check seat belts	
Check Shock Absorbers		Check hydraulics	
Check brakes		Check air compressor and lines	
Check parking/emergency brake		Lubricate door hinges	
Check differential fluid		Lubricate hood release	
		Reset oil life monitor	
Group 3 - Drive Line		Check inspection sticker	
Check and lube U-joints			
Check transmission mount		Road test vehicle	
Check transfer case fluid			
Check linkages		**Additional Work Performed**	
Group 4 - Engine			
Change engine oil			
Check water pump play			
Check ATF			
Check power steering fluid level			
Check brake fluid			
Check coolant level			
Check air filter			
Check exhaust system		Foreman's Signature:	
Check drive belts			

PREVENTATIVE MAINTENANCE INSPECTION WORKSHEET

HEAVY DUTY FIXED ROUTE BUS 6,000

UNIT INSPECTION SERVICE- ORDER
6000 MILE INSPECTION SCHEDULE

CURRENT MILEAGE_____ GILLIG BUS #_____ **date completed**_____
DATE_____

WORK ORDER#_____ PREVIOUS MILES_____ MILES_____

ENTERED ON FILE_____ DATE_____ FOREMANS SIGNATURE_____

	BADGE#
GROUP 1 LUBRICATION	
LUBRICATE CHASSIS & DRIVE LINE	
CHANGE ENGINE OIL & FILTERS	
ADD QTS. OIL	
INSPECT ENGINE FOR OIL LEAKS & REPAIR	
GROUP 2 FRONT SUSPENSION	
INSPECT AIR BAGS, MOUNTING , LINES	
RADIUS RODS & BUSHINGS	
INSPECT SHOCK ABSORBERS	
CHECK HEIGHT CONTROL VALVE & ADJ.	
CHECK KNEELER OPERATION ADJ.	
GROUP 3 FRONT WHEELS & BRAKES	
INSPECT BRAKE DIAPHRAMS	
CHECK BRAKE LININGS , DRUMS & ROTORS	
CHECK BRAKE ADJ.	
CHECK BRAKE FUNCTION	
CHECK BRAKE VALVES	
CHECK WHEEL BEARING ADJUSTMENT	
INSPECT TIRES & AIR PRESSURE	
TIGHTEN ALL WHEEL NUTS	
GROUP 4 REAR SUSPENSION	
INSPECT AIR BAGS MOUNTING, LINES	
INSPECT RADIUS RODS & BUSHINGS	
INSPECT SHOCKS ABSORBERS	
CHECK HEIGHT CONTROL VALVE & ADJ.	
GROUP 5 REAR BRAKES & WHEELS	
INSP. BRAKE CHAMBERS & MOUNTING	
CHECK BRAKE DIAPHRAMS	
INSPECT BRAKE LININGS , DRUMS & ROTORS	
CHECK BRAKE ADJ.	
CHECK BRAKE FUNCTION	
INSPECT TIRES & PRESSURE	
TIGHTEN ALL WHEEL NUTS	
CHECK PARKING BRAKE VALVE	
CHECK EMG. BRAKE RELEASE VALVE	
CHECK RELAY BRAKE VALVE	

	BADGE#
GROUP 6 STEERING	
CHECK TIE RODS, DRAGLINKS & KING PINS	
INSPECT STEERING GEAR & SEAL	
INSPECT STEERING SHAFT & U JOINTS	
CHECK STEERING MITER GEAR	
CHECK STEERING COLUMN TEL,LOCK	
INSPECT STEERING COLUMN U- JOINTS	
INSPECT STEERING PUMP & LINES	
REPLACE STEERING FLUID & FILTER	
GROUP 7 DIFFERENTIAL & DRIVE LINE	
CHECK FLUID LEVEL	
INSPECT DRIVELINE BOLTS & U-JOINTS	
INSPECT PINION SEAL & AXLE GASKETS	
GROUP 8 AIR COMPRESSOR SYSTEM	
INSPECT AIR COMPRESSOR UNIT & LINES	
CHANGE AIR DRYER AS NEEDED	
CHECK DRYER HEATER COIL	
DRAIN ALL AIR TANKS	
INSPECT SAFETY VALVES	
CHECK LOW AIR INDICATOR & GAUGES	
LUBRICATE DOOR HINGES	
GROUP 9 FUEL SYSTEM	
INSPECT FUEL PUMP & LINES	
INSPECT FUEL PUMP MOUNTING BOLTS AND NUTS	
CHANGE FUEL FILTERS AS NEEDED	
INSPECT FUEL TANK & CAP GASKET	
GROUP 10 TRANSMISSION	
INSPECT TRANS. FOR LEAKS	
CHANGE OIL & FILTER EVERY 100,000 MILES	
CHECK SHIFTER OPERATION	
CHECK MOUNTING BOLTS	
DO FRONT OF THE PAGE	
FIRST	

GROUP 11 WHEEL CHAIR RAMP	
CHECK FOR PROPER OPERATION	
INSP. MECHANICAL COMP. FOR BINDING	
INSPECT ELECTRICAL HARNESS	
CLEAN RAMP, SENSORS,ETC.	
GROUP 12 BODY	
CHECK BIKE RACK FOR DAMAGE & CONDITION	
INSPECT FLOOR & STEPS	
INSPECT SEATS	
CHECK ALL LIGHTS INT. & EXT.	
MIRRORS OPERATION / TIGHTEN	
CHECK SUN VISOR	
INSPECT ROOF HATCH OPERATION	
CHECK PANELS INT. / EXT. CRACKS ETC.	
INSP. DOOR OPERATION & INTERLOCK	
CHECK WIPER OPERATION & CONDITION	
FILL WASHER RESERVOIR	
INSP. WINDOWS FOR CRACKS PITS ETC.	
GROUP 13 COOLING & EXHAUST	
INSP. MUFFLER, CAT, TAILPIPE / MOUNTS	
INSPECT ALL PIPE CLAMPS	
CLEAN RADIATOR & AFTER COOLER	
CHECK RADIATOR , COOLER FOR LEAKS	
INSPECT ALL HOSES & PIPES, CLAMPS	
CHECK SURGE TANK LEVEL & CAP SEAL	
CHANGE WATER FILTER IN NEEDED	
CHECK HOT ENGINE LIGHT	
GROUP 14 SAFETY	
CHECK CHOCK BLOCK, FIRST AID KIT	
FIRE EXT. FLARES ,DRIVERS SEAT BELT	
INSPECT FIRE DETECTION SYSTEM	
CHECK W/ CHAIR STRAPS	

GROUP 15 A/C HEATING	
CHECK SYSTEM OPERATION	
CHECK DEFROSTER HIGH AND LOW SPEED	
CHECK BOOSTER BLOWER	
CLEAN EVAP. & DEFROSTER FILTERS	
INSPECT CONDENSER & BLOWER MOTORS	
INSP. LINES, VALVES, PIPING FOR LEAKS.	
SECURE LINES VALVES , PIPING IF NEEDED	
CHECK COMP. FOR LEAKS &OIL LEVEL	
TIGHTEN COMPRESSOR MOUNTING BOLTS	
CHECK COMPRESSOR BELT TENSION&PLAY	
CHECK FREON LEVEL	
INSP DIVERSION PUMP OPERATION / LEAKS	
INSPECT UNDER SEAT BLOWER MOTORS	
GROUP 16 ELECTRICAL	
CHECK W/C BUZZER & STOP REQUEST	
CHECK BACK UP ALARM	
CHECK ALT. BELT TENSION & PULLEY	
INSPECT ALT. WIRES FOR CHAFING ETC.	
INSP. BATTERY & CABLES	
CHECK CHARGING SYSTEM	
INSPECT ALL TELL TALE LIGHTS & GAUGES	
TEST P/A ; CHECK CAMERA	
TEST FARE BOX CAL MAXIMUS	
CHECK DEST SIGN AND ROUTE SIGN	
CHECK FAST IDLE	
CLEAR AND REPAIR DDEC CODES	
GROUP 17 ENGINE	
CHECK COOLING FAN, CRACKS PLAY, ETC.	
CHECK AIR INDICATOR, PIPING ,CLAMPS	
INSPECT HOSES & CLAMPS	
CLEAN AIR INLET & FILTER	
CHECK ENGINE AND CRADLE MOUNTS	
CHECK ENGINE OIL PRESSURE	
CHECK LOW OIL INDICATOR	
STEAM CLEAN ENGINE	
ROAD TEST & CHECK SHIFT POINTS	
1/2 2/L L/3	
CHECK INSPECTION STICKER	

PREVENTATIVE MAINTENANCE INSPECTION WORKSHEET

HEAVY DUTY FIXED ROUTE BUS 12,000

12000 MILE B INSPECTION

BUS#_____ DATE_____

WORK ORDER#_____ MILES_____ PREVIOUS MILES_____

ENTERED ON FILE_____ DATED COMPLETED_____ FORMANS SIGNATURE_____

GROUP 1 FRONT SUSPENSION	BADGE	COMMENTS	GROUP 9 FUEL SYSTEM	BADGE
INSPECT FOR MAJOR AIR LEAKS			REPLACE FUEL FILTERS	
INSPECT AIRBAGS			INSPECT FUEL SYSTEM FOR LEAKS	
INSPECT KNEELER FUNCTION				
GROUP 2 BRAKES & WHEELS			GROUP 11	
PERFORM BRAKE FUNCTION TEST			INSPECT WHEEL CHAIR LIFT FUNCTION	
ADJ. ALL BRAKES			LUBRICATE W/C LIFT/RAMP	
INSPECT ALL BRAKE LININGS			INSPECT W/C SECUREMENT DEVICES	
INSPECT ALL TIRES				
INSPECT OR TIGHTEN LUG NUTS			GROUP 12 BODY	
INSPECT SLACK ADJUSTERS.			INSPECT FLOOR FOR OBVIOUS DEFECTS	
			ALL LIGHTS INTERIOR & EXTERIOR	
GROUP 3 REAR SUSPENSION			CHECK WINSHIELD FOR CRACKS	
INSPECT FOR MAJOR AIR LEAKS			INSPECT WIPER BLADES	
INSPECT AIR BAGS			FILL WASHER RESERVOIR	
INSPECT PARKING BRAKE			CHECK FRONT&REAR DOOR FUNCTION	
CHECK EMERGENCY RELEASE VALVE			INSPECT MIRRORS	
GROUP 10				
INSPECT TRANNY FOR LEAKS			GROUP 13 COOLING AND EXHAUST	
			INSPECT FOR LEAKS	
GROUP 5 STEERING			CHECK SURGE TANK LEVEL	
INSPECT ALL STEERING COMPONENTS			INSPECT RADIATOR	
GROUP 7 AIR COMPRESSOR			GROUP 15 ELECTRICAL	
DRAIN ALL AIR TANKS			CHECK STOP REQUEST	
PERFORM AIR COMP, TEST			CHECK BACK UP ALARM	
INSPECT AIR GAUGES			INSPECT CHARGING SYSTEM	
			INSPECT BATTERYS AND CABLES	
GROUP 8 LUBRICATION			CHECK ANNUNCIATOR OPERATIONS	
LUBRICATE CHASSIS & DRIVELINE				
CHANGE ENGINE OIL AND FILTER				
			GROUP 16 ENGINE	
			INSPECT FOR LEAKS	
			INSPECT BELTS	
			CHECK FAULT CODES.	

PREVENTATIVE MAINTENANCE INSPECTION WORKSHEET

HEAVY DUTY FIXED ROUTE BUS ELECTRIC BUS

UNIT INSPECTION SERVICE- ORDER
6000 MILE INSPECTION SCHEDULE

CURRENT MILEAGE_____ ELEC BUS #_____ **date completed**_____
DATE_____

WORK ORDER#_____ PREVIOUS MILES_____ MILES_____

ENTERED ON FILE_____ DATE_____ FOREMANS SIGNATURE_____

	BADGE#
GROUP 1 FRONT SUSPENSION	
INSPECT AIR BAGS, MOUNTING , LINES	
INSP. STABILIZER BAR BUSHINGS,LINKS	
RADIUS RODS & BUSHINGS	
INSPECT SHOCK ABSORBERS	
CHECK HEIGHT CONTROL VALVE & ADJ.	
CHECK KNEELER OPERATION ADJ.	
GROUP 2 FRONT WHEELS & BRAKES	
INSPECT BRAKE DIAPHRAMS	
CHECK BRAKE LININGS AND ROT0RS	
CHECK BRAKE ADJ.	
CHECK BRAKE FUNCTION	
CHECK BRAKE VALVES	
CHECK WHEEL BEARING ADJUSTMENT	
INSPECT TIRES & AIR PRESSURE	
TIGHTEN ALL WHEEL NUTS	
GROUP 3 REAR SUSPENSION	
INSPECT AIR BAGS MOUNTING, LINES	
INSPECT RADIUS RODS & BUSHINGS	
INSPECT SHOCKS ABSORBERS	
CHECK HEIGHT CONTROL VALVE & ADJ.	
GROUP 4 REAR BRAKES & WHEELS	
INSP. BRAKE CHAMBERS & MOUNTING	
CHECK BRAKE DIAPHRAMS	
INSPECT BRAKE LININGS AND ROTORS	
CHECK BRAKE ADJ.	
CHECK BRAKE FUNCTION	
INSPECT TIRES & PRESSURE	
TIGHTEN ALL WHEEL NUTS	
CHECK PARKING BRAKE VALVE	
CHECK EMG. BRAKE RELEASE VALVE	
CHECK RELAY BRAKE VALVE	
GROUP 9 LUBRICATION	
LUBRICATE CHASSIS & DRIVE LINE	
LUBRICATE DOOR HINGE	
LUBREICATE BATTERY RAILS	

	BADGE#
GROUP 6 STEERING	
CHECK TIE RODS, DRAGLINKS & KING PINS	
INSPECT STEERING GEAR & SEAL	
INSPECT STEERING SHAFT & U JOINTS	
CHECK STEERING MITER GEAR	
CHECK STEERING COLUMN TEL,LOCK	
INSPECT STEERING COLUMN U- JOINTS	
INSPECT STEERING PUMP & LINES	
CHECK FLUID LEVEL	
GROUP 7 DIFFERENTIAL & DRIVE LINE	
CHECK FLUID LEVEL	
INSPECT DRIVELINE BOLTS & U-JOINTS	
INSPECT PINION SEAL & AXLE GASKETS	
GROUP 8 AIR COMPRESSOR SYSTEM	
INSPECT AIR COMPRESSOR UNIT & LINES	
CHECK AIR COMPRESSOR OIL & FILTERS	
CHANGE AIR DRYER AS NEEDED	
CHECK DRYER HEATER COIL	
DRAIN ALL AIR TANKS	
INSPECT SAFETY VALVES	
CHECK LOW AIR INDICATOR & GAUGES	
GROUP 5 TRANSMISSION	
INSPECT TRANS CHECK FOR OIL LEAKS	
CHECK MOUNTING BOLTS	
CHANGE OIL EVERY 100K MILES	
CHECK TRANS BREATHER	
GROUP 10 ELECTRICAL	
CHECK W/C BUZZER & STOP REQUEST	
CHECK BACK UP ALARM	
CHECK ALL ACCESSORIES	
CHECK. BATTERY & CABLES	
CHECK CHARGING SYSTEM	
INSPECT ALL TELL TALE LIGHTS & GAUGES	

GROUP 11 WHEEL CHAIR RAMP	
CHECK FOR PROPER OPERATION	
INSP. MECHANICAL COMP. FOR BINDING	
INSPECT ELECTRICAL HARNESS	
CLEAN RAMP, SENSORS,ETC.	
GROUP 12 BODY	
INSPECT FLOOR & STEPS	
INSPECT SEATS	
CHECK ALL LIGHTS INT. & EXT.	
MIRRORS OPERATION / TIGHTEN	
CHECK SUN VISOR	
INSPECT ROOF HATCH OPERATION	
CHECK PANELS INT. / EXT. CRACKS ETC.	
INSP. DOOR OPERATION & INTERLOCK	
CHECK WIPER OPERATION & CONDITION	
FILL WASHER RESERVOIR	
INSP. WINDOWS FOR CRACKS PITS ETC.	
GROUP 13 COOLING	
INSPECT ALL PIPE CLAMPS	
COOLER FOR LEAKS	
INSPECT ALL HOSES & PIPES, CLAMPS	
CHECK TANK LEVEL & CAP SEAL	
CHANGE WATER FILTER AS NEEDED	
GROUP 14 A /C HEATING	
CHECK SYSTEM OPERATION	
CHECK DEFROSTER	
CLEAN EVAP. & DEFROSTER FILTERS	
INSPECT CONDENSER & BLOWER MOTORS	
INSP. LINES, VALVES, PIPING FOR LEAKS.	
CHECK COMP. FOR LEAKS &OIL LEVEL	
CHECK COMPRESSOR	
CHECK FREON LEVEL	

****WARNING****	
MUST USE	
LOCK OUT TAG OUT PROCEDURES	
AND ALL SAFETY EQUIPMENT TO INCLUDE	
GLOVES, FACE SHIELD, LONG SLEEVE SAFETY	
JACKET. SEE FOREMAN FOR INFORMATION	
TECHNICIANS ACKNOWLEDGMENT #	
GROUP 15 HIGH VOLTAGE SYSTEM	
CHECK ALL HIGH VOLTAGE (ORANGE) CABLES FOR CHAFING AND CONDITION	
CHECK ALL HV BATTERY PACK ELECTRICAL CONNECTIONS FOR PROPER CONDITION	
CHECK HV BATTERY PACK MOUNTING FASTENERS	
CHECK HV BATTERY PACK MOUNTING ISOLATORS	
CHECK CONDITION OF HV BATTERY BOX	
INSPECT DC TO DC CONVERTER FOR C0RROSION	
INSPECT GROUND BAR FOR CORROSSION	
GROUP 16 ROOFTOP	
INSPECT ROOFTOP BLADE CONDITION	
CHECK ALL HV CONNECTION AT THE BLADE	
CHECK HV (ORANGE) CABLE CONDITION	
CHECK ROOFTOP HEATER OPERATION	
GROUP 17 HV SYSTEM IN MOTOR COMPARMENT	
CHECK ALL HV CABLES CHAFING AND CONDITION	
CHECK ALL HV CABLE ROUTING CLAMPS	
CHECK HV CONNECTION TO TRACTION MOTOR	
CHECK HV CONNECTION TO INVERTER	
OPEN HV DISTRIBUTION BOX CHECK CONNECTIONS	
CHECK CONDITION OF MANUAL CHARGING PORTS	
GROUP 18 SAFETY	
CHECK CHOCK BLOCK, FIRST AID KIT	
FIRE EXT. FLARES ,DRIVERS SEAT BELT	
INSPECT FIRE DETECTION SYSTEM	
CHECK W/ CHAIR STRAPS	
CHECK INSPECTION STICKER	

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UMass Transit Services
Vehicle Maintenance Plan

Updated January 05, 2018

The goal of the UMass Transit Services maintenance plan is to provide clean, safe, and efficient transit equipment for the riding public on behalf of the Pioneer Valley Transit Authority (PVTA). UMass Transit Services' present PVTA fleet is made up of Gillig and New Flyer model coaches. Inspection requirements are similar for all coaches and specific items that are unique are noted in each vehicle inspection checklist (copies attached).

The following mission critical objectives have been established to successfully meet these goals:

1. Preventative maintenance service is performed at manufacturer required 6,000 mile intervals on all PVTA buses. Engine oil and oil filters (along with oil analysis) are changed, vehicle systems are inspected and all items included on the attached checklists are inspected for proper function. ADA required equipment is inspected, including the proper functioning of wheelchair ramps/securement devices and automated stop announcement devices. Bus camera systems are also fully inspected during these inspections. Items that fail inspection are repaired or replaced as part of the 6,000 mile Preventive Maintenance inspection. Fleet Anywhere software is used to select buses for preventive maintenance inspections based on the attached checklists and scheduling reports are run daily identifying buses that have approached the 6,000 mile threshold.

   The preventative maintenance program allows the inspection team to identify components for scheduled maintenance and/or overhaul, and replace worn items prior to failure in order to minimize major repair expense, prevent repair comebacks, prevent major component damage from service failure, and minimize road calls. Completing these inspections every 6,000 miles (within 10%) ensures that all components remain fully functional for the life of the vehicles.

2. Major component inspections take place annually. "Major components" include: checking and lubricating the door operating mechanism; checking the a/c system compressor, clutch and blower motor bearings; fire suppression systems are checked; wheelchair ramp chains are cleaned; window emergency releases / cables are checked and cleaned; on a hybrid, the battery tub is checked and filters cleaned; on the 60-footers, the articulating joint is checked, cleaned and lubed; and air dryer desiccant cartridges are changed; all fluids and filters are changed out. "All fluids and filters" include engine oil, hydraulic oil, ATF and the differential gear lube. On non-hybrid buses the differential gear lube is changed annually, and on hybrids the traction motor lube is changed every 50,000 miles. Filters include: oil, air, fuel, power steering, coolant and, if the timing coincides with the 50,000-mile ATF change interval, transmission filters. All of this is included in the annual major component inspection along with the routine 6,000 mile maintenance procedure. Major component cleaning is performed in order to maximize component life, eliminate road debris, identify leaks and broken materials, and perform major campaigns that have been identified by vehicle repair history.

3. As part of the preventative maintenance program, all revenue buses used each day are cleaned inside and out on a daily basis. Pre-trip inspections are required, performed and documented by all drivers each time they begin driving a shift and the information provided by them on the vehicle defect sheets is recorded daily by the dispatchers into our online vehicle runsheet database. The runsheet database provides updated information daily about the status of each bus and is readily available to the maintenance supervisor at all times. This system ensures that when buses have a defect it can be passed along quickly to the maintenance department and repairs can be scheduled to ensure the vehicle is repaired as soon as possible.

These inspection intervals allow UMass Transit Services to meet the above listed goal, maintain an established road call average of 25,000 miles between calls, minimize system failures, and extend the life of the Authority's vehicles beyond the 12 year life cycle.

Warranty Work

Buses are sent to a Cummins dealer for Engine-related (two years of coverage) warranty repair. For chassis-related repairs either the bus manufacturers send someone to do the repairs or we do it ourselves, after receiving replacement parts and reimbursement for labor through bus manufacturers' warranty programs. All warranty work must be pre-approved by the manufacturer regardless of the cause. All warranty issues are documented and kept on site for the length of time the bus is in service.

Failed Components

Parts and components that may have failed prematurely are retained. The Superintendent of Maintenance researches the original installation date, miles of usage on the failed component and the vendor from whom it was originally purchased. If the part or component is covered by warranty, it is returned to the vendor.

Springfield Area Transit Company
Valley Area Transit Company

Facilities &
Equipment
Maintenance Plan

Table of Contents

SATCo/VATCo Facilities and Equipment Preventative Maintenance (PM) Program

Maintenance Overview - Section 1

The facilities maintenance plan of SATCo/VATCo focuses on a comprehensive preventive maintenance program for facilities and equipment of the Pioneer Valley Transit Authority (PVTA). SATCo /VATCo operate transit services and maintain buildings and facilities under contract to PVTA. The goal is to provide safe, clean, reliable facility and equipment for our employees and the public served. SATCo/VATCo is committed to maintaining PVTA facilities and equipment in the most efficient manner possible.

1. Goals and Objectives

The purpose of a Preventative Maintenance (PM) Program is to minimize down time; improve the safety and the overall condition of the facilities; improve productivity and efficiency of the Maintenance department; and simultaneously reduce costs. The best way to accomplish these objectives is through an aggressive preventative maintenance program to detect and prevent potential problems and take corrective actions.

SATCo/VATCo's objective is to provide safe, clean and reliable facilities as well as equipment through an efficient and effective maintenance program that meets our mission statement and supporting precepts:

2. Plan of Action

In order to accomplish the goals and objectives, the Maintenance Department has implemented a plan of action that provides the necessary tools and resources, while avoiding waste to accomplish the goal. Five basic resources are available including:

- Development of specifications that will address our needs.
- Secure vendors that adhere to our specifications.
- Development of an in-house staff that can address a number facility/equipment issues.
- Implementation of methods and processes during service calls.
- Keep accurate records to maintain goal.
- Maximize the life expectancy of the facilities and equipment.

Proper management of these will maximize the department's effectiveness and positively impact the ability to meet the level of service expected by the public.

2A. MISSION CRITICAL

PVTA has identified 4 (four) areas as mission critical ; Electrical power outage, HVAC, fueling of vehicles, and fire.

A. Electrical power outage: PVTA's operation relies on electricity as a vital part of its operation. In the event of a power outage, PVTA maintains an emergency generator at each facility in good working condition by performing a check monthly. Also local utility companies are contacted to repair any issues to assure normal operation is resumed in a timely manner.
B. HVAC: Any loss of HVAC in either extreme hot or cold conditions can create an unhealthy working condition for employees and put the facility and equipment in danger of freezing. In a case where this occurs, PVTA has internal staff that can work on the problem and also maintains a maintenance contract with a certified mechanical repair company which does seasonal inspections and who can be brought in on any emergency.
C. Fueling: Having buses fueled daily is critical to transit operation. In the event the fuel pumps go out of service, SATCO and VATCO have internal staff trained to repair most issues. Any major or complex repairs to Veederoot monitoring system and/or underground systems are done by a subcontractor . SATCO maintains two separate fueling systems so any failure by one system is covered by the ability to use the other. VATCO has arrangements to bring in a fuel truck from a local business in the event we cannot repair system on the same day. All fuel systems are inspected by a third party for operation and compliance with all applicable law.
D. Fire;: In the event of fire, SATCO/VATCO maintains a dry sprinkler system and an automatic fire department alarm system. Inspections are conducted quarterly by an outside contractor and a maintenance contract is in place should any problem arise.

3. Program of Inspections and Preventative Maintenance

The Facility and Maintenance program is a dynamic system driven by the Maintenance Director, the selected vendors, original equipment manufacturer (OEM) recommendation; subcontractor evaluation; and statistical evaluation based on work orders. As issues are identified by these reports they are systematically evaluated to make the necessary correction to the deficiency. In addition we utilize technological improvements and recommendations; and implement training to increase efficiency of equipment.

The PM schedule is contained within the PM inspection records for facilities and equipment. This information is gathered from the contractor's annual/weekly etc. inspections as identified in the manual and checked off in the record book. The reports/work order/ deficiencies are filed separately.

Timeliness of preventative maintenance is important. The following standards are used to gauge the on-time performance of the PM system:

- **Monthly Inspections.** These are considered on time if completed between the date issued and 15 days after the due date.
- **Quarterly Inspections.** These are considered on time if completed between the date issued and 30 days after the due date.
- **Semi-annual Inspections.** These are considered on time if completed between the date issued and 30 days after the due date.
- **Annual Inspections.** These are considered on time if completed between the date issued and 30 days after the due date.

Inspection checklists are developed for particular inspections as a guide to insure that contracted services these important aspects. A detailed equipment list is contained in the maintenance manual for each individual equipment item with the respected time line for completion.

4. Facilities and Equipment Contract Maintenance

SATCo/VATCo have agreements with outside contractors to provide certain aspects of facility and equipment maintenance. This method is used in most cases because of the expertise and specialization necessary to complete such tasks. In some cases special training and certification is required to perform maintenance and it is not cost effective for the agency to retain qualified staff. In addition, SATCo/VATCo have assigned utility staff that are responsible for some aspects facility preventive maintenance and repair.

- **Janitorial Maintenance:** Janitorial maintenance and cleaning at the SATCo, VATCo, PVTA Administration, and Olver Transit facilities are contracted to private providers. The contract specifies detailed tasks and frequencies. Discrepancies are followed up through repeat visits until corrected.

- **Landscaping Maintenance:** Landscaping and yard maintenance are performed by utility maintenance staff at almost all locations. Given the urban location of the Holyoke Transit Center, SATCo and its adjoining PVTA facility, there is very little landscaping to maintain. Small areas of grass cutting combined with trees and shrubs are the responsibility of a utility maintenance employee at SATCo. The VATCo facility has grass, trees and shrubs that are the responsibility of utility maintenance as well. Both facilities use in-house utility maintenance for snow removal. Private contractors provide landscaping and snow removal services at the Olver Transit Pavilion.

- **Elevator Maintenance:** The elevators at the PVTA administration building and at SATCO are maintained under contract. State law requires certification of individuals performing work on these systems and it is a specialized knowledge that is not readily maintained in-house. All elevators are required by state law to be inspected annually by Mass state inspector. Building maintainers do a monthly performance check.

5. ADA Accessibility

All public entrances, bathrooms and hallways are ADA compliant. Most facilities are outfitted with handicap door openers at select entrances, with VATCo being the exception, which are exercised regularly and repaired as needed.

6. Warranty Procedures

Completed PM inspections are reviewed by the Maintenance Director to determine if repairs would be covered under warranty. For equipment items, determination is made by reviewing the warranty conditions in the equipment maintenance manual if it applies. The local authorized representative of the equipment manufacturer is contacted to obtain warranty repairs. Any new construction warranty information is submitted with the project close out documents.

7. Record Keeping System

All PM schedules and information on completed work orders are maintained in a manual and in the finance records. Work orders for preventative maintenance and unscheduled repairs are also included.

8. Organization and Responsibilities

The following are duty titles and brief duty descriptions of facility maintenance positions. See the organization chart to identify reporting relationships.

- **Maintenance Director** Responsible for the daily function of facilities maintenance. Develops processes and technical procedures. Manages all projects, develops material and project specifications, communicates with subcontractors/ vendors, employees and evaluates bids with procurement personnel. Establishes priorities and manages personnel resources.
- **Purchasing Manager** Coordinates with vendors and procures services of outside vendors under contract.
- **Foreman:** Assigns work to maintenance employees. Provides training, evaluation and feedback to employees.
- **Building Maintainers:** Perform daily tasks of keeping facility clean, emptying trash, minor repairs, and ongoing maintenance to keep facility safe and in a state of good repair. Perform monthly inspections for performance and safety and maintain records.

Facilities - Section 2

SATCo Main Street Facility

The SATCo operating facility whose origins date back over 100 years to a street railway trolley car barn is located at 2840 Main Street on 4.5 acres just east of I-91 in the northern area of downtown Springfield, Massachusetts. This facility currently stores and maintains 125 full sized fixed route vehicles. It also maintains 127 paratransit vehicles, but these units are stored and dispatched at Hulmes Transportation at another location. Hulmes Transportation is under contract to PVTA to operate ADA complementary paratransit service.

The bus maintenance area is comprised of 36,000 square feet and is used for preventative and routine maintenance on both fixed route and paratransit vehicles. Included is a body shop, rebuild room, parts storage and inventory There are 27 service bays with 11 in ground lifts and 4 portable lifts The SATCo facility also contains an 27,848 square foot bus storage area. Included in the storage facility is an area where buses are fueled, washed and vacuumed.

The SATCo administrative and operations area adjoins the maintenance facility and consists of 5140 square feet.

VATCo Operating Facility

The Valley Area Transit Company (VATCo) is located on a 2.5 acre parcel of land at 54 Industrial Drive in Northampton, Massachusetts.

VATCo currently maintains 21 full sized fixed route vehicles and 35 paratransit vans. All functions including maintenance, parts room/inventory, servicing/washing, vehicle storage and administration and operations exist in the facility of 24,000 square feet. The facility constructed in 1985 was recently renovated in 2013.

PVTA Administration Building

The administration building of the Pioneer Valley Transit Authority (PVTA) is on a ¼ acre parcel of land at 2808 Main Street adjacent to the SATCo operating facility. The building, 3 stories tall was a former Springfield fire station which was purchased by PVTA and renovated for administrative office use. The building contains the office area for the PVTA Administrator and support staff including operations and planning, finance, procurement, information technology, claims, and capital project development.

The facility is three floors with a total gross building area16,812 square feet.

The third floor of the building contains a large conference room which is used by PVTA Advisory Board which makes policy decisions for the Authority.

The building has an elevator system, fire protection system and an HVAC system appropriate for an office environment.

Holyoke Transit Center

The Holyoke Transit Center (HTC) is located at 206 Maple Street in downtown Holyoke, MA. Located 8 miles from downtown Springfield, HTC is a major transfer point for services in the northern part of the PVTA service area in Hampshire County. Constructed in 2010 it has 7 bays and an adjoining waiting/customer service area. PVTA purchased the building for waiting and customer service and went through an adaptive use process to modify the building for transit use. In addition the second and third floors house a child care center and classrooms for Holyoke Community College. The building is maintained by a third party contractor.

The outdoor pull in area consists of seven (7) bus bay under a canopy with real time information display equipment in. SATCo is responsible for trash and snow removal as well as minor landscaping. HTC also operates an electric charger for PVTA's electric buses which is maintained by SATCo.

Union Station

The major transfer point for SATCo buses in downtown Springfield is currently at Union Station located at 55 Frank B Murray StSpringfield MA. SATCo is a tenant at Union Station which is owned by the Springfield Redevelopment Authority (SRA). The facility and equipment maintenance is minimal as the SRA contracted a property manager for these services. Union Station also operates an electric charger for PVTA's electric buses which is maintained by SATCo.

Olver Transit Pavilion

PVTA operates the Olver Transit Pavilion, located at 10 Arnold St, Westfield Mass. This transfer center has four (4) loading bays and a 2800 sq ft building with a public waiting/ customer service area. The facility is in its first year of operation so the majority of the building system's maintenance is the responsibility of the installer.

Planned Future Facilities

- **Cottage Street Transit Facility—**The new Cottage Street Facility at 649 Cottage Street in Springfield is currently under construction and will have 20 service bays and storage space for over 130 buses to house SATCo's fixed route operation. It is expected to be open in 2019. The facility will provide space currently needed at the crowded SATCo Main Street facility.

Preventative Maintenance Schedule Section - 3

SATCo Main Street
Facility

MANUFACTURER/DESCRIPTION	MODEL/SERIAL #	DAILY	WEEKLY	BIWEEKLY	MONTHLY	BIMONTHLY	QUARTERLY	SEMIANNUALLY	ANNUALLY	REFERENCE	LOCATION
BUS WASHER SYSTEM											
Westmatic #1	Transit-Master							X			S
Westmatic #2	Transit-Master							X			S
COMPRESSORS											
Sullair	1500E II							X			M
Speedaire	3FMU8							X			M
FIRE SUPPRESSION											
(5) 10 lb ABC (wood, paper, fuel, electric)	Sentry				x						O
(15) 10 lb. ABC (wood,paper,fuel,electric)	Badger				X						O
(2) Sprinklers	Star Sprinkler							X			O
(2) Fire alarm systems	Fire Alarm							X			O
GENERATORS											
Kohler Consolidated Power	50.D-8						X				O
HOISTS/ LIFTS											
(9) 2 Post In-Ground	Rotary								X		M
(2) 4 Post Non- Mobile	Rotary								X		M
(4) Mobile	Rotary								X		M
HVAC EQUIPMENT											
Boiler-Furnace	Lachivar KBN801								X		M

Air Conditioning	Carrier 15 ton 50CD0018930								X		R
Air Conditioning	Carrier 4 ton OCD005030								X		R

OVERHEAD CRANES											
Lo-Hed	2 ton capacity							X			M
Sala								X			M
Fuel and Lubricants											
(1) 500 gallon Waste oil/ used oil	Above Ground						X				G
(1)1,000 gallon (Antifreeze)	Above Ground						X				G
(1)1000 gallon ATF	Above ground						X				G
(2) 500 gallon 10W40 oil	Above Ground						X				G
(1) 500 gallon 5W40	Above ground						X				G
(2) 15,0000 Gallon Diesel	Underground						X				G
(1) 10,000 gallon Diesel	Underground						X				G

F=floor R=roof M=maintenance shop G=underground and above ground fluid storage O=throughout S= bus storage facility R= Roof

VATCO Facility

MANUFACTURER/DESCRIPTION	MODEL/SERIAL #	DAILY	WEEKLY	BIWEEKLY	MONTHLY	BIMONTHLY	QUARTERLY	SEMIANNUALLY	ANNUALLY	REFERENCE	LOCATION
BUS WASHER SYSTEM											
NS Corporation								X			S
								X			
COMPRESSORS											
Baver								X			M
								X			
								X			
								X			
								X			
FIRE SUPPRESSION											
Gamewell Alarm/Sprinkler	Flex 410								X		O
(5) 10 lb. ABC (wood, paper, fuel, electric)	Buckeye								X		O
(15) 10 lb ABC (wood, paper, fuel, electric)	Sentry								X		O
GENERATORS											
Kohler	Fast Response II						X				M
HOISTS/ LIFTS											
(3) In Ground Two Post	Rotary								X		M
(4) Portable Lifts	Rotary								X		M
HVAC EQUIPMENT											
Boiler	Lachivar KB 211								X		M
HVAC system	Lennox Energenz Model No. CGH120H4BS1Y								X		R
OVERHEAD CRANES											
CM Lodestar	Model L 1 ton							X			M

ROOF											
Metal										X	R
Fuel and Lubricant Storage											
ATF 250 gallons	Above Ground										**G**
Antifreeze 250 gallons	Above Ground										G
Oil 15 W 40	Above Ground										G
Diesel 10,000 gallons	Underground										G
Waste Oil 480 gallons	Above Ground										G

F=floor R=roof M=maintenance shop G=underground and above ground fluid storage O=throughout
S= bus storage facility R= Roof

Inspection Forms- Section 4

SATCO

MONTHLY PLANT INSPECTION AND PM SCHEDULE

MONTH OF _____

Equipment Location & Procedure	Assigned to:	Performed by: (Initial)	Date:
Boiler Room			
1. Start emergency generator – run ten minutes.			
2. Check batts for water and voltage			
3. Check Air Dryer for air leaks.			
4. Check main air tank for water and test pump system.			
5. Grease all heater pumps.			
6. Check Air Compressor – check hours and record.			
7. Check boilers for leaks.			
Body Shop			
1. Check oil level in lift tank.			
2. Grease lift motor.			
3. Air handler filter (replace as needed).			
4. Check sandblaster for sand.			
5. Check all lights.			
Maintenance Shop			
1. Check all oil, ATF, gear oil, guns are in good working order and readable.			
2. All drop lights are in good order.			
3. All lift tanks – check oil level and record if oil added or not.			
4. Clean and check Oberg oil filter press.			
5. Check all lights.			
6. Check all fans.			
7. Check all exhaust fans.			
Bus Storage Area			
1. Check all lights.			
2. Check all doors for damage.			
3. Clean all water channels/drains.			
Wash Rack Area			
1. Clean walls.			
2. Clean all grease traps.			
3. Check oil-water separator (3 areas) to see if it needs cleaning.			
4. Check water re-circulating valve.			
Elevators 1. **Check operation of elevators**			

MONTHLY SHOP EQUIPMENT INSPECTION AND PREVENTTIVE MAINTENANCE SCHEDULE FOR _____

Equipment & Procedure	Assigned to:	Performed by: (Initial)	Date
1. **Steam Jenny** - Check hoses.			
2. **Cooker** – Cleaned and greased.			
3. **Hydraulic Floor Jacks** – No leaks, works good.			
4. **Fork Truck** – Oil, water, etc. clean.			
5. **Air Hoses** – Check.			
6. **Grease, Oil, Water Guns** – Working and can read nos.			
7. **Floor Sweeper** – Check system.			
8. **Grinders** – Check wheels.			
9. **Transmission Jacks** – Clean and grease.			
10. **Lathe** – Clean and check oil level.			
11. **Big Joe's** – Clean and grease.			
12. **Oberg Oil Filter Press** – Clean.			
13. **Drill Press** – Oil; clean.			
14. **Floor Scrubber** – Check system.			

VATCO MONTHLY PLANT INSPECTION AND PM SCHEDULE

MONTH OF _____

Equipment Location & Procedure	Assigned to:	Performed by: (Initial)	Date:
Boiler Room			
1. Start emergency generator – run ten minutes.			
2. Check batts for water and voltage			
3. Check Air Dryer for air leaks.			
4. Check main air tank for water and test pump system.			
5. Grease all heater pumps.			
6. Check Air Compressor – check hours and record.			
7. Check boilers for leaks.			
Body Shop			
1. Check oil level in lift tank.			
2. Grease lift motor.			
3. Air handler filter (replace as needed).			
4. Check sandblaster for sand.			
5. Check all lights.			
Maintenance Shop			
1. Check all oil, ATF, gear oil, guns are in good working order and readable.			
2. All drop lights are in good order.			
3. Check all tanks for leakage			
4. Clean and check Oberg oil filter press.			
5. Check all lights.			
6. Check all fans.			
7. Check all exhaust fans.			
Bus Storage Area			
1. Check all lights.			
2. Check all doors for damage.			
3. Clean all water channels/drains. 4. Check fuel dispensers for leaks			
Wash Rack Area			
1. Clean walls.			
2. Clean all grease traps.			
3. Check oil-water separator (3 areas) to see if it needs cleaning.			
4. Check water re-circulating valve. 5. Check fuel dispenser for leaks			
Elevators 1. Check operation of elevators			

MONTHLY FACILITY INSPECTION

PVTA ADMINISTRATION BUILDILNG

Office/Floor	Assigned to	Initial	Date
Basement			
Test Safety Light in Entry to Basement			
Check Stair Tread			
Check Timer for Outside Lights			
Tighten all Door Knobs			
Check Fire Extinguisher			
Building Entrances			
Inspect all Lights			
Tighten all Door Knobs			
Test Motion Detector			
Check Stair Treads 1st – 3rd Floor			
Inspect all Exit Signs			
1st Floor			
Inspect all Lights			
Tighten all Door Knobs			
Check all Heat Vents			
Check Fire Extinguisher			
Inspect all Exit Signs			
Inspect all Emergency and Safety Door Lights			
2nd Floor			
Inspect all Lights			
Tighten all Door Knobs			
Clean all Heat Vents			
Check Fire Extinguisher			
Inspect all Exit Signs			
Inspect all Emergency and Safety Door Lights			
3rd Floor			
Inspect all Lights			
Tighten all Door Knobs			
Check all Heat Vents			
Check Fire Extinguisher			
Inspect all Exit Signs			
Inspect all Emergency and Safety Door Lights			
Check elevator operation			
Check outside perimeter security			
Check bulkhead/hatchway			
Check grounds			

Comments: **Note any safety issues noticed.**

SEMI-ANNUAL

INSPECTION OF LIFTS AND CRANES

Date_____

Tech_____

Check overhead crane:

Functions well Y__ N__

Loose wires or bolts Y__ N—

Wires chafing or obstructed Y__ N__

Chains in good condition Y__ N__

Check Lifts

Are lifts operating correctly Y__N__

Are locks clean and operating Y__N__

Check for leaks Y-__N__

Any safety concerns_____

SATCO SELF-INSPECTION WORKSHEET MONTHLY AUDIT

Location:_____ Date:_____ Inspector:_____

NO	YES	NA	Walking/Working Surfaces
			1. Are aisles and working areas clean and free of hazards?
			2. Are floors clean, dry, sanitary and free of slop hazards?
			3. Are there doormats for the rainy season?
			4. Are mezzanine storage areas and floor over-ways guarded by toprail, midrail, and toe boards?
			5. Are stairs equipped with standard stair railings?
			6. Where necessary, are nonskid surfaces applied to stair treads?
			7. Are ladders sturdy, free of defects, equipped with safety feet and used properly?
			8. Are metal ladders kept away from electrical exposures and marked to say so?
			9. Check stair tread surfaces for protruding screws – tighten where necessary.
NO	YES	NA	Means of Egress
			1. Are there enough exits for an emergency?
			2. Are exit routes marked, not obstructed and doors unlocked?
			3. Are there visible "EXIT" signs with six inch letters at all exits?
			4. Do exit doors swing outward?
NO	YES	NA	Flammable Materials
			1. Are flammable liquids stored in fire resistive enclosures?
			2. Are flammable liquids kept for use in approved safety cans and contents labeled?
			3. Are approved booths used for spraying materials?
			4. Are "NO SMOKING" signs posted/enforced?
NO	YES	NA	Fire Protection
			1. Are telephone numbers to the fire department conspicuously posted?
			2. Are portable fire extinguishers:
			a. Fully charged, accessible, conspicuously marked and mounted no higher than five feet if under forty pounds or three and a half feet if over forty pounds?
			b. Adequate amount with proper ratings – within seventy-five feet of any area or one for every 3000 square feet?
			c. Inspected monthly and serviced as needed (at least annually)?
			d. Are employees trained in their use?
			3. Are all standpipes and hoses usable?
			4. Are sprinkler valves locked open and heads unobstructed?
			5. If local fire alarm signaling systems are used, are they approved and properly maintained (tested annually)?
			6. Are covered containers provided for collection and separation of flammable waste?

NO	YES	NA	Fire Protection continued
			7. Is combustible scrap/waste and debris removed from the work area at regular intervals?
			8. Are cigarette butts from ash trays properly disposed of daily?
			9. Are proper sized fuses and circuit breakers being used?
			10. Are extension cords used within prescribed limits? (i.e. for demonstrations, and none over ten feet in length)
			11. Are fire doors in good working condition?
			12. Are exits clearly marked and lighted?
			13. Are all aisles clear of obstructions?
			14. Is all trash removed regularly?
			15. Are approved metal waste cans used for collection of waste materials, floor sweeping and oily waste?
			16. When was your last safety inspection by the Fire Department?_____
			17. Are extra sprinkler heads and sprinkler wrench maintained in a cabinet near the control valves? Number of extra sprinkler heads_____
			18. Are the outside fire department connections readily accessible? (i.e. no pallets, trash containers, vehicle parking, etc. blocking access)
NO	YES	NA	Machinery and Machine Guarding
			1. Are drive belts, chain drives, etc. completely enclosed?
			2. Are machine gears kept in place and regularly inspected?
			3. Are inspection and maintenance records kept on file?
			4. Are shaft ends, nip points, moving parts, etc. guarded?
			5. Do fixed power tools have disconnect switches which can be closed and tagged off?
NO	YES	NA	Electrical
			1. Is all electrical equipment grounded?
			2. Are electrical control panels posted and marked to ensure at least three feet of clearance?
			3. Is the purpose of each switch or sideconnect on the panel identified?
			4. Are extension cords prohibited were permanent wiring should be used?
			5. Are cord plugs and receptacles non-interchangeable in circuits of different voltages?
			6. Are high-voltage signs displayed where needed?
			7. Are outlets restricted to the number of cords the outlet was designed for?
NO	YES	NA	Medical and First Aid
			1. Are properly maintained first aid supplies available? (ALL MEDICATIONS removed from cabinets)
			2. Are there quick eye and body washing equipments available?
NO	YES	NA	Miscellaneous
			1. Identify any safety issues that need to be addressed.

SATCO MONTHLY AUDIT BY SUPERVISOR

Location:_____ Date:_____ Inspector:_____

NO	YES	NA	Personal Protective Equipment
			1. Are employees required to use personal protective equipment?
			2. Is appropriate foot protective required where there is risk of foot injuries? Are they provided for employees?
			3. Is protective outerwear provided to employees where necessary?
			4. Are employees trained in the proper use of all personal protective equipment?
			5. Is personal protective equipment regularly inspected, maintained and sanitized?
			6. Are disciplinary sanctions used to enforce protective equipment requirements (hearing, safety shoes, etc.)?
NO	**YES**	**NA**	**Color Coding**
			1. Are colors used to identify hazards as follows:
			a. RED: Danger, fire equipment, flammable liquid container, exits?
			b. ORANGE: Dangerous parts of machinery which may cut, shock, or injure when guards are removed?
			c. YELLOW: Caution, to mark physical hazards, tripping, obstructions? (use yellow and black to highlight hazards)
NO	**YES**	**NA**	**Medical and First Aid**
			1. Are medical personnel available for consultation?
			2. Are there medical clinics nearby?
			3. Are employees trained in first aid and/or CPR?
			4. Are employees available on each shift?
			5. Are emergency telephone numbers and addresses (doctors, clinics, hospitals, ambulance, etc.) posted?
NO	**YES**	**NA**	**Hazardous Communication Standard**
			1. Are you and your staff familiar with the "Written Standard"?
			2. Has an inventory of all Hazardous Chemicals been conducted?
			3. Have MSDS's been requested for all chemicals for which you do not have MSDS's?
			4. Have MSDS's been divided into work areas; placed in a loose leaf binder; and placed where readily available?
			5. Are ALL employees aware of the location of the MSDS binder?
			6. Are all Hazardous Materials inventoried properly labeled with: Chemical name; Identify of hazards; MFRG name, address, phone number; Precautions to take; and First Aid?
			7. Have all employees been informed of the requirements of the Hazard Communication Standard?
			8. Are employees aware of the procedure for requesting a copy of a MSDS?

NO	YES	NA	Hazardous Communication Standard continued
			9. Are employees aware of the Significance of each section of MSDS and how to read it and what it means?
			10. Are employees trained PRIOR to the handling of the hazardous chemical, including those employees who may only temporarily do this work?
			11. Is training conducted when an employee has transferred jobs or departments?
			12. Is updated training conducted when significant changes in chemicals or operations has occurred?
			13. Are the requirements of the Hazardous Communication Standard explained to ALL temporary and contractor personnel who will work in areas containing Hazardous Chemicals?
			14. Are contractors who bring chemicals onto SATCO premises providing MDSD's to Safety Officer/Management?
NO	YES	NA	General Procedures
			1. Are Passageways marked, unobstructed and adequately lighted?
			2. Are lift trucks provided?
			3. Are MONTHLY safety committee meetings being held?
			4. Are provisions in effect which provide for outdoor clean-up (sweepers, etc.)?
NO	YES	NA	Miscellaneous
			1. Identify any safety issues that need to be addressed.

VATCO MONTHLY AUDIT BY SUPERVISOR

Location:_____ Date:_____ Inspector:_____

NO	YES	NA	Personal Protective Equipment
			1. Are employees required to use personal protective equipment?
			2. Is appropriate foot protective required where there is risk of foot injuries? Are they provided for employees?
			3. Is protective outerwear provided to employees where necessary?
			4. Are employees trained in the proper use of all personal protective equipment?
			5. Is personal protective equipment regularly inspected, maintained and sanitized?
			6. Are disciplinary sanctions used to enforce protective equipment requirements (hearing, safety shoes, etc.)?
NO	YES	NA	Color Coding
			1. Are colors used to identify hazards as follows:
			a. RED: Danger, fire equipment, flammable liquid container, exits?
			b. ORANGE: Dangerous parts of machinery which may cut, shock, or injure when guards are removed?
			c. YELLOW: Caution, to mark physical hazards, tripping, obstructions? (use yellow and black to highlight hazards)
NO	YES	NA	Medical and First Aid
			1. Are medical personnel available for consultation?
			2. Are there medical clinics nearby?
			3. Are employees trained in first aid and/or CPR?
			4. Are employees available on each shift?
			5. Are emergency telephone numbers and addresses (doctors, clinics, hospitals, ambulance, etc.) posted?
NO	YES	NA	Hazardous Communication Standard
			1. Are you and your staff familiar with the "Written Standard"?
			2. Has an inventory of all Hazardous Chemicals been conducted?
			3. Have MSDS's been requested for all chemicals for which you do not have MSDS's?
			4. Have MSDS's been divided into work areas; placed in a loose leaf binder; and placed where readily available?
			5. Are ALL employees aware of the location of the MSDS binder?
			6. Are all Hazardous Materials inventoried properly labeled with: Chemical name; Identify of hazards; MFRG name, address, phone number; Precautions to take; and First Aid?
			7. Have all employees been informed of the requirements of the Hazard Communication Standard?
			8. Are employees aware of the procedure for requesting a copy of a MSDS?

Proterra On-Route Charge Station Preventive Maintenance

WARNING: Always be aware of the possibility of live circuits. Follow the shop maintenance high voltage safety procedures.

Unit Number: _____ **Location:** _____

PM Type: _____ **Date:** _____ **Mileage:** _____

Use only these marks to fill in the tables below:
/ = Checks OK for service
X = Needs repair
O = If repaired
N/A = Not applicable

PMI Period
A – 1200 Cycles or 1 month
B – 3600 Cycles or 3 months
C – 7200 Cycles or 6 months

☐ = Line item must be completed at the scheduled interval

■ = Line item not required to be completed at scheduled interval

= Customer-specific inspection

Inspect the following items on a monthly basis, and check the appropriate boxes to indicate completion.

HIGH-VOLTAGE SYSTEM					NOTES
A	B	C	INT	**High-Voltage Distribution Box or Backplane**	
☐	■	■	■	Check cables and look for discoloration or chaffing of visible cables	
☐	■	■	■	Inspect lugs and look for indications that any lugs are loose. Note: Torque putty on lugs will provide an indicator.	
☐	■	■	■	Contactor Inspection - Perform a visual inspection and look for deformations or discoloring in contactors	
☐	■	■	■	Control Wiring - Perform a visual inspection and ensure that the control wiring to the high-voltage contactors is not in contact with high-voltage buss bars or high-voltage wiring	
☐	☐	☐	☐	**Charge Head**	
☐	■	■	■	Cable Inspection - Perform a visual inspection and look for discoloration or chaffing of visible high-voltage cables	
☐	■	■	■	Control Wiring - Perform a visual inspection and ensure that the control wiring is allowed to move freely with actuation and that wires are not chaffing	
PNEUMATIC SYSTEM					**NOTES**
A	**B**	**C**	**INT**	**Air Compressor**	
☐	■	■	■	Follow all air compressor manufacturer guidelines for monthly checks.	
☐	■	■	■	Ensure that the safety valve operates freely.	
☐	■	■	■	Drain air tank. Look for moisture	
☐	■	■	■	Verify output of compressor is 120 psi	
☐	■	■	■	Verify upstream neutral brush regulator operation at 90 psi, downstream regulator at 40 psi and charge brush regulator at 60 psi	
☐	■	■	■	Inspect and clean air filter, change if necessary	
☐	■	■	■	Test operation of auto drain	
☐	■	■	■	Check the pump oil level indication	
■	☐	■	■	Change air compressor oil. Reference Dewalt Instruction Manual (Model D55151 Type 3) for specific procedures for draining and refilling the Compressor Pump Oil.	
☐	☐	☐	☐	**Air Lines**	
☐	■	■	■	Visually and audibly check lower air lines from the compressor through the distribution box(es) and ensure there is no chaffing or kinks. Spray soapy water on lines and fitting to check for leaks.	
☐	■	■	■	Visually and audibly check upper air lines from the control box to the charge head and ensure there is no chaffing or kinks. Spray soapy water on lines and fitting to check for leaks.	
☐	☐	☐	☐	**Air Dryer**	
☐	■	■	■	Follow all manufacturer guidelines for monthly checks. Change when the color changes (DFD-10).	
☐	■	■	■	Monitor desiccant discoloration. Record percent consumption of the desiccant to the nearest 10%. Replace desiccant at 80% consumption or greater.	
MECHANICAL SYSTEM					**NOTES**
A	**B**	**C**	**INT**	**Arm Up/Down Actuation (using Test Tag)**	
☐	■	■	■	Ensure that the charge head resting position is correct.	
☐	■	■	■	Using test tag, verify smooth reasonable speed during the downward motion. Give deploy time of 3 seconds.	
☐	■	■	■	Using test tag, verify quick upward motion: <3 sec. return.	
☐	■	■	■	Verify that the charge head returns home.	
☐	■	■	■	Lubricate all joints and pivot points.	
☐	☐	☐	☐	**Arm Sway**	
☐	■	■	■	Verify the charge arm has free sway movement.	
☐	■	■	■	Verify the charge arm will return to center.	
☐	■	■	■	Lubricate all joints and pivot points.	
☐	☐	☐	☐	**Head Twist**	
☐	■	■	■	Verify the charge head has free twist movement.	
☐	■	■	■	Verify the charge head will return to center.	
☐	■	■	■	Inspect all cables and security of cable terminations while static and in motion.	
☐	■	■	■	Lubricate all joints and pivot points.	
☐	☐	☐	☐	**Head Roll**	
☐	■	■	■	Verify the charge head has free roll movement.	
☐	■	■	■	Verify the charge head will return to flat (horizontal) position.	
☐	■	■	■	Inspect the guide pins to ensure sturdiness.	
☐	■	■	■	Lubricate all joints and pivot points.	

				Head Return	
				Verify the Charge Head spring return feature works. NOTE: It should return to its home position even without air pressure.	
				Brush Actuation and Condition:	
				Check neutral brush for wear with test tag.	
				Verify neutral brush actuation distance. Record brush measurement while extended.	
				Verify charge brushes actuation distance of at least 1" with test tag. Record shortest three brush measurements on each side of the Charge Head. Replace with new or rebuilt charger boats when two or more brushes on the same side fail to extend further than ¾" from brush housing.	
				Verify charge brushes freedom of movement.	
				Check pilot brush travel. Record brush measurement.	
				Replace pilot brush.	
				Head Condition:	
				Check for gouges or cracks on bottom or sides. Contact the manufacturer regarding any large gouges.	
				Check for distortion. Contact the manufacturer if distortion exists.	
				Check for loose fasteners and tighten them as necessary.	
				Inspect and confirm that all cotter pins and snap rings are in place.	
SENSORS					NOTES
A	B	C	INT	**Head Land Detent Sensors**	
				Ensure free movement.	
				Ensure arms are not bent.	
				Ensure proper clocking of 75 degrees using a protractor.	
				Ultrasonic Sensor	
				Clean bottom surface of sensor.	
				Ensure wiring is not pinched or chaffed.	
CHARGER					NOTES
A	B	C	INT	*Follow all Manufacturer's Guidelines for monthly checks.*	
				Inspect air filters.	
				Replace air filters.	
				Listen for any abnormal sounds, such as fans failing or debris in fans.	
				Using HMI screen activate fans, verify they are running and listen for abnormal operation.	
				Using HMI screen verify phase measurements for each PMF are within +/- 5v.	
				Using HMI screen actuate dampers to ensure proper function (dampers can take up to 2 minutes to close).	
				Check for infestation or nests built by birds, bats, bugs, or other animals.	
				Check for the presence of unusual odors or any changes in appearance of the components.	
				Check damper solenoid hardware is present and tight.	
GENERAL					NOTES
A	B	C	INT		
				Verify operation of the docking control box exhaust fan. Listen for any abnormal sounds.	
				Check for moisture inside all enclosures and boxes.	
				Check for infestation or nests built by birds, bats, bugs, or other animals.	
				Verify proper operation of each emergency stop to ensure that it disables the system and prevents docking/charging.	
				Remove, clean, and replace docking control box aluminum air inlet filter elements (2).	
				Remove, clean, and replace docking control box exhaust fan filter element.	
				Check all pneumatic hoses for any wear and listen for air leaks.	
				Check counter-balance spring assemblies on charge arm for correct tension and release movement.	
				Check condition of all electrical cables for cracks.	
				Check condition of all electrical connections for corrosion.	
				Check control box for nests, etc.	
				Check junction box for nests, etc.	
				Charge bus three times successfully.	

PMI FOLLOW-UP NEEDED					EMPLOYEE # & WORK ORDER #

*** Log all issues found during inspection as a Field Incident Report (FIR).**

PRINT INSPECTOR'S NAME: _____ INSPECTOR'S SIGNATURE: _____

PRINT INSPECTOR'S NAME: _____ INSPECTOR'S SIGNATURE: _____

KEEP THE COMPLETED PREVENTIVE MAINTENANCE CHECKLIST FOR YOUR RECORDS.

University of Massachusetts Amherst
University Bus Garage
255 Governors Drive
Amherst, MA 01003

Transportation Services

voice: (413) 545-0056
fax: (413) 545-1930

UMass Transit Services
Facility Maintenance Plan

Updated January 22, 2018

The goal of the UMass Transit Services facility maintenance plan is to provide a clean, safe, and efficient transit facility for the operation, storage, and maintenance of the Pioneer Valley Transit Authority (PVTA) buses and equipment.

The following mission critical objectives have been established to successfully meet these goals:

1. Seasonal service and inspection are completed on HVAC systems, overhead doors, boilers, and lift hydraulic systems. Repairs are made as necessary. The facility also has oil-water separators that are evacuated on a yearly basis (Triumvirate), automatic fuel system monitoring (Veeder-root), recycling, and weekly cleaning of the floors in the bus storage area. Floor drains are cleared on a monthly basis or as needed during inclement weather months. The roof is inspected on a monthly basis for debris accumulating around drains and, on a semiannual basis for physical damage. Facility lighting indoors and out is monitored on an ongoing basis and lights are replaced as necessary. Emergency lights are checked by Physical Plant personnel on an annual basis and repaired/replaced as needed.

2. Custodial services are provided by the UMass Physical Plant on a daily basis to ensure restrooms, offices and dispatch/drivers lounge areas remain clean. Carpeted areas are cleaned twice per year by physical Plant custodial personnel.

3. UMass Transit Service personnel maintain grounds on a regular basis to ensure lawns are cut and landscaping remains trimmed during the summertime, Snow/ice is cleared from all entryways and sidewalks, and the yard is plowed frequently during and after each winter storm.

4. Spill Prevention, Control and Countermeasure Plans (SPCC). There is standard operating procedure in place for spill prevention and the SPCC is backed up by the UMass Environmental Health and Safety (EH&S) department. Weekly inspections are completed in our satellite accumulation area and on the waste oil tank. Monthly inspections are completed on our hydraulic fluid storage tank, coolant storage tank, oil storage tank and diesel storage tanks/fueling systems. Monthly and weekly compliance inspection data is sent to EH&S and stored electronically (also stored on site and in servers at UMass IT). Annual inspections of our fueling system and underground diesel storage tanks are performed by an outside agency through EH&S. Task-alerts are set up through Outlook calendar to maintenance personnel on a weekly and monthly basis reminding them to perform inspections. Spill kits are available throughout the facility, and in vehicles of road supervisors/staff. Spill containment materials are located throughout the facility storage area as well.

5. Facility emergency generators are operated weekly and inspected annually by campus physical plant personnel.

6. Fire suppression systems and emergency lighting are inspected and tested annually by campus EH&S department.

7. Facility Security. Facility security lock and camera systems are inspected annually by transit's IT department. The facility is fenced in and lockable security gates are in place at the front entrance, east side entrance, and CDL training course. Electronic entry doors to the facility are secured using the UMass campus C*Cure building access system that requires a valid employee's UCard to access.

8. ADA accessibility. The facility has no elevators or escalators as it is single level. There is one entry door at our dispatch entrance that has a push button door opener for ADA entry. The door opener is exercised regularly, inspected monthly, and repaired as needed. All public entrances, bathrooms and hallways are ADA compliant.

Facility Video Maintenance Plan

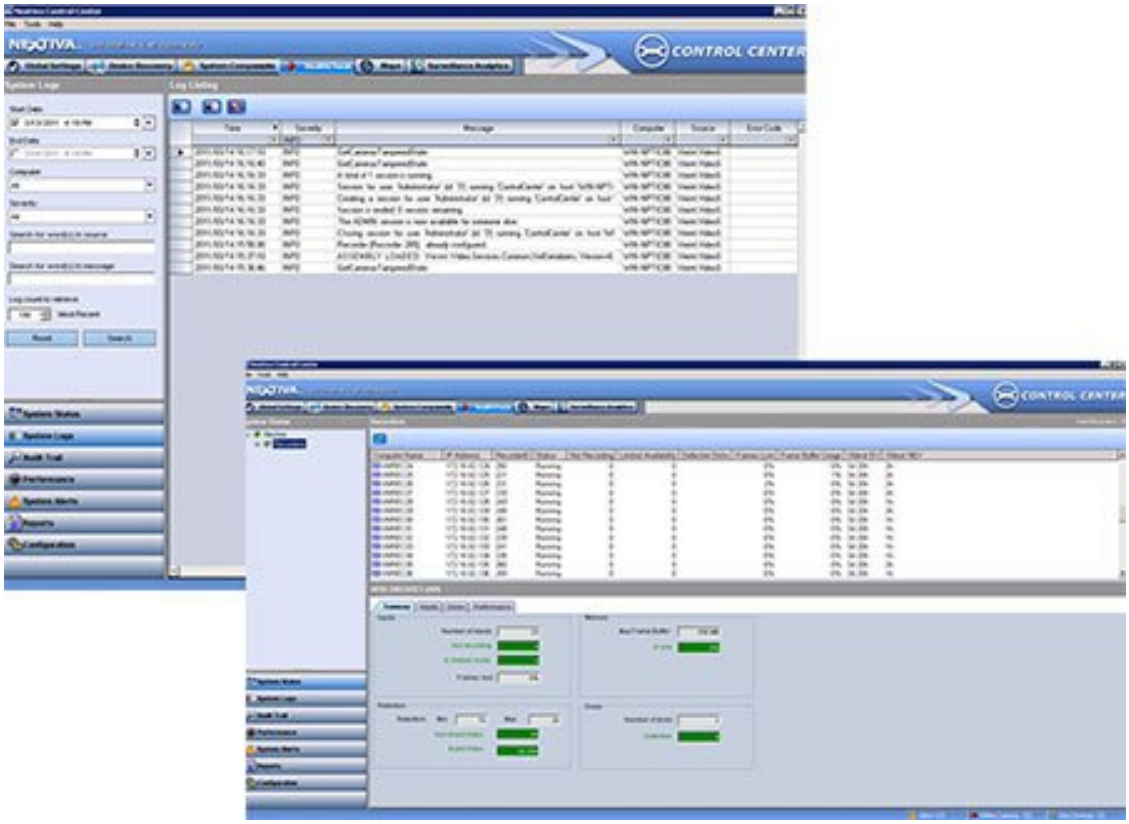
The PVTA Facility Video maintenance plan is based on proactive notification of health status information received by the Facility Video system on a component level. The Nextiva Video Management System has incorporated automated video system health monitoring and diagnostics. This centralized management interface is called Verint HealthCheck. With the HealthCheck, administrators monitor all video system components from a single console in Verint Control Center. HealthCheck helps diagnose potential problems and identify system issues quickly.

Because HealthCheck is fully integrated with the PVTA IP video network, it delivers system diagnostics and performance information via email alerts regarding configurable events. When HealthCheck detects a problem, it automatically issues an alert with such pertinent details as the malfunctioning component, problem severity and status, and a description of the problem. For example if communication is lost to a camera, an email alert is generated and sent to the PVTA helpdesk.

The PVTA helpdesk troubleshoots what has occurred and responds accordingly. In the event of camera failure, a spare camera will be deployed and the non-functional unit either repaired or replaced for use as a future spare.

Alerts from the facility video system warrant a priority response from the PVTA IT team.

A screenshot of the Verint HealthCheck management console:



PVTA facility video camera system maintenance checklist:

Camera & Housing:

1. Camera / lens focus and auto iris adjusted properly.

2. Camera field of view is adjusted to customer's requirements.

3. Camera / housing viewing window is clean, inside and out.

4. Camera lens is dust free.

5. Interior of camera enclosure is clean and dry.

6. Check operation of pan tilt, and zoom focus. Use controller in control room to check all these operations.

Wire & Cable:

7. Check wiring and cable harnesses for wear and fray.

8. Check to make sure cable is dressed properly.

9. Check connectors and cable entry points for loose wiring.

10. Coaxial cable is transmitting an adequate video signal to control room. Signal should be free of distortion,

tearing, hum-bars, EMI, and rolling, etc.

11. Make sure all coaxial connectors are insulated from conduit and pull boxes.

Control Equipment:

12. Monitors are free from picture burn-in, and distortion.

13. Monitors have proper contrast and brightness.

14. VCR's are functioning properly and provided distortion free recording.

15. VCR's should be sent out for professional cleaning, and belt changes. This should occur on a regular basis (at least every18 months).

16. All control equipment is operational. Switchers allow proper sequencing and callup. Multiplexers are

properly encoding and decoding. Matrix switcher keyboards are fully operational.

17. Clean all monitor screens, control panels, and keyboards with a diluted cleaning solution.

18. Check all coaxial connectors on the back panels for loose connections.

19. Check all power connections to insure AC plugs are not loose or power cables frayed.

Asset Disposal

PVTA disposes of assets after:

1. Useful life and mileage requirements in accordance with FTA_Circular_9030.1D are met
2. The asset is ready for replacement, or no longer needed
3. The asset being disposed has a fair market value of less than $5,000

Assets are disposed via bids or donation to another agency or non-profit entity.

Process:

a. Assets at the end of their useful life are identified.
b. The Financial Analyst verifies that useful life is met, and the asset is fully depreciated.
c. A spreadsheet containing all assets identified as ready for disposal is compiled along with necessary journal entries and reviewed and approved by the CFO.
d. The approved list is then given to the Grants Manager for final review and disposal in the Fixed Asset software system.
e. An Auction date is set and advertised with coordination of the General Manager or Project Manager where the asset(s) reside.

All Journal Entries pertaining to the disposal is entered the ACCPAC accounting software and the disposal workpaper is updated.