

Date: 06 June 2019

Grant Applicant: Franklin Regional Transit Authority (FRTA)

Project: Proposed FRTA Bus Maintenance and Operations Facility
Sandy Lane, Village of Turners Falls, Montague, MA

**INFORMATION REQUIRED FOR PROBABLE
CATEGORICAL EXCLUSION
(SECTION 771.117(d))**

A. DETAILED PROJECT DESCRIPTION:

The Franklin Regional Transit Authority (FRTA) proposes to construct and operate a Bus Maintenance and Operations Facility at a location on Sandy Lane, in the Village of Turners Falls, Montague, MA consisting of:

- 1) A maintenance and administrative building;
- 2) At-grade parking and navigation lanes;
- 3) Landscaping; and
- 4) Associated utility infrastructure.

The proposed project site is a currently vacant parcel totaling approximately 24 acres, of which just over 5 total acres are proposed to be developed (please see **Figure 1-Site Locus**).

The FRTA provides public transit services in 41 communities throughout Franklin, Hamden, Hampshire, and Worcester counties. It serves a population of over 100,000, including services for the elderly and individuals with disabilities.

Access to the proposed project site will be from Sandy Lane, which is a public way providing access to several existing commercial facilities located on parcels abutting the project site. The existing land use pattern in the site vicinity is generally mixed commercial and residential. There is a ground mounted solar generation facility to the immediate west, the Town of Montague's Animal Shelter and Transfer Station to the immediate south, and loading dock facilities for Judd Wire, a private manufacturing facility, to the east. Access to all these facilities is via Sandy Lane. There are several residences located to the north of the project site on Turnpike Road (please see **Figure 2-Aerial Map**.)

The proposed facility will have a total footprint of approximately 224,994 SF including the building footprint (Administrative space, Maintenance Space, and Service Space) of approximately 20,989 SF, impervious parking surfaces that will be approximately 109,425 SF, and approximately 94,580 SF of landscaped/pervious surfaces (please see attached **Figure 3-FRTA Architectural Plans and Renderings**.)

The FRTA's routes cover the largest and most rural geographical areas of any transit authority in Massachusetts. The proposed Bus Maintenance and Operations facility will address FRTA's current and future operational needs.

The FRTA's existing vehicle operations and maintenance facility and administrative office building is leased from a private party, is limited in size and configuration, and is inadequate. It is located at 382 Deerfield Street in Greenfield, Massachusetts. Considerable renovations and upgrades would be needed at the existing facility to accommodate both current and future transit vehicles used by FRTA, and such renovations are not feasible or economical. Continued use of the existing facility would also restrict sustainability options for the FRTA going forward.

B. LOCATION (INCLUDING ADDRESS): Attach a site map or diagram, which identifies the land uses and resources on the site and the adjacent or nearby land uses and resources. This is used to determine the probability of impact on sensitive receptors (such as schools, hospitals, residences) and on protected resources.

Review of existing land use within .25 miles of the project site confirms that there are no sensitive land uses or sensitive community resources present that would be negatively impacted by the project. There are no wetlands, nor rare, threatened, or endangered (RTE) habitat present on the site (please see **Figure 4-Environmental Resources Map**.) An isolated wetland and vernal pool have been identified on the parcel of land abutting the project site to the south. Project design is being advanced to include structural stormwater management BMPs that will prevent concentration and/or increase in the volume of release of Stormwater in the direction of this wetland resource area.

C. METROPOLITAN PLANNING AND AIR QUALITY CONFORMITY: Is the proposed project "included" in the current adopted MPO plan, either explicitly or in a grouping of projects or activities? What is the conformity status of that plan? Is the proposed project, or are appropriate phases of the project included in the TIP? What is the conformity status of the TIP?

Funding for design and construction of the facility has been included in the Commonwealth of Massachusetts State Transportation Improvement Program (STIP) and was approved by the Massachusetts Department of Transportation.

Emission levels from the Central Massachusetts MPO, part of the Eastern Massachusetts Nonattainment Area, are in conformity with the Massachusetts State Implementation Plan (SIP). Further, the Central Massachusetts Transportation Improvement Program (TIP) is in conformity with the SIP where required and in accordance with EPA's final conformity regulations.

D. ZONING: Description of zoning, if applicable, and consistency with proposed use.

The town of Montague has provided a formal opinion (dated April 9, 2019) "that the proposed FRTA maintenance facility to be constructed on Sandy Lane qualifies as a governmental facility under the Montague Zoning Bylaws section 5.(a)iii. As such, Montague has determined that the project is a permitted use in all zoning districts. Site Plan Review will be required from the Planning Board under Zoning Bylaws Section 9.1.2(a) for construction exceeding 3,000 square feet. The final site plan should be reviewed for conformance with other sections of the zoning bylaws pertaining to dimensional setbacks, parking and signage." (Please see **attached Town of Montague Opinion Letter**).

E. TRAFFIC IMPACTS: Describe potential traffic impacts; including whether the existing roadways have adequate capacity to handle increased bus and other vehicular traffic.

The proposed FRTA Maintenance and Operations facility will be located approximately 3.9 miles from the existing John W. Olver (“JWO”) Transit Center in the commercial center of downtown Greenfield. FRTA anticipates that revenue vehicle traffic between the proposed Maintenance and Operations facility and JWO will generally head west along Turnpike Road then proceed southwesterly along Montague City Road and Cheapside St. FRTA revenue vehicle traffic will then proceed northerly along Route 5 (Deerfield St. to Bank Row) to Olive St. and then to the JWO Transit Center.

Twenty-three (23) revenue vehicles will be stored and thirty-five (35) revenue vehicles will be serviced at the proposed Maintenance and Operations Facility. FRTA operations, which take place only on weekdays, will begin when the first revenue vehicle departs the proposed facility at 4:20 am. FRTA vehicles will then depart the facility at approximately 30- to 60-minute intervals throughout the morning. FRTA revenue vehicles will return to the proposed facility in the afternoon and early evening hours, with the last vehicle returning by 7:45pm. These additional vehicles will only have minor impacts to the streets and intersections between Turnpike St. and Cheapside St.

It is not anticipated that revenue vehicle traffic will increase along Rt. 5 near Deerfield St. and intersections north of the Cheapside St. intersection relative to existing conditions, since there is already FRTA bus traffic in that area associated with the existing FRTA O&M facility located at 382 Deerfield St.

It is similarly not anticipated that revenue vehicle traffic to and from the proposed facility will negatively impact other Deerfield St. intersections or the intersection at Bank Row and Olive St. in the downtown Greenfield Area.

As noted above, FRTA anticipates there will be only small changes in the number of vehicles added to Turnpike Street and surrounding roadways (estimated at 284 total vehicles per day or slightly greater than 7.1% of anticipated total traffic volume on Turnpike Rd. and 1.8% of revenue generating vehicles on Cheapside St. Furthermore, there will be a positive net effect to traffic impacts along Rte. 5 (Deerfield St.) which is gained by replacing the FRTA O&M Facility with the proposed new facility at Sandy Lane. The proposed Maintenance and Operations facility relocation will eliminate the FRTA turning movements across the 2-lane Rte. 5 (Deerfield St.) to access/egress the existing facility at 382 Deerfield St. Based on the above information, STV has determined that there will be only minor shifts in the travel patterns because of the project, which the existing roadways can accommodate. Only minimal impacts to local roadways or intersections are anticipated during non-peak hours as a result of the proposed project.

F. CO HOT SPOTS: If there are serious traffic impacts at any affected intersection, and if the area is nonattainment for CO, demonstrate that CO hot spots will not result.

The proposed project is in the village of Turners Falls in the town of Montague, which is located approximately 45 miles north of Springfield, MA. The City of Springfield is the closest metropolitan area which is identified in the EPA Greenbook for CO Designated Area/State Information. The City of Springfield is designated as a Maintenance Area for CO that is Not Classified (www.epa.gov).

In 2017 MassDEP discontinued the PAMS-related trace CO monitoring at Chicopee (25-013-0008). FRTA revenue vehicles will depart the proposed facility for weekday service intermittently, starting at 4:20am and will the return intermittently ending at 7:45pm. FRTA revenue vehicles will add only slightly to traffic volumes on Turnpike Road and intersections to the east and west of the proposed facility, resulting in only minor changes in bus, mini-bus and paratransit van traffic levels at affected intersections. Most of the subject intersections are not signalized, and FRTA's engineer STV has determined that no CO hot spots will occur because of this project.

___ G. HISTORIC RESOURCES: Describe any cultural, historic, or archaeological resource that is located in the immediate vicinity of the proposed project and the impact of the project on the resource.

Review of available data has confirmed that there are no previously identified cultural, historic, or archeological resource areas in the immediate vicinity of the proposed project site, (Please see **Figure 5-Historical Resources.**)

___ H. NOISE: Compare the distance between the center of the proposed project and the nearest noise receptor to the screening distance for this type of project in FTA's guidelines. If the screening distance is not achieved, attach a "General Noise Assessment" with conclusions.

FTA guidelines for this project type contained in the FTA Transit Noise and Vibration Impact Assessment guide (FTA-VA-90-1003-06) indicate that the screening distance between the center of the proposed project (project type Bus Facilities-Storage and Maintenance) is 350' (unobstructed) and 225' (intervening buildings.) Review of the project site and the closest noise receptors in the vicinity (residences to the north of the project site on Turnpike Road-Please see **Figure 4-Environmental Resources Map**) shows that these residences are located at a distance greater than the screening distance. The FRTA's proposed building is further than the required screening distance.

___ I. VIBRATION: If the proposed project involves new or relocated steel tracks, compare the distance between the center of the proposed project and the nearest vibration receptor to the screening distance for this type of project in FTA's guidelines. If the screening distance is not achieved, attach a "General Vibration Assessment" with conclusions.

The proposed project does not involve new or relocated steel tracks.

___ J. ACQUISITIONS & RELOCATIONS REQUIRED: Describe land acquisitions and displacements of residences and business.

The FRTA proposes to acquire the project site from the Town of Montague. The site is currently vacant and no displacements of residences of businesses will occur.

___ K. HAZARDOUS MATERIALS: If real property is to be acquired, has a Phase I site assessment for contaminated soil and groundwater been performed? If a Phase II site assessment is recommended, has it been performed? What steps will be taken to ensure that the community in which the project is located is protected from contamination during construction and operation of the project? State the

results of consultation with the cognizant State agency regarding the proposed remediation?

Multiple soil samples were collected at the project site and analyzed at a properly credentialed laboratory to determine whether subsurface contamination exceeding reportable quantities is present at the site. Initial analysis of one of the samples collected showed a low level of petroleum hydrocarbon present at a depth of 5-10 feet. Based on this result, additional testing was recommended by FRTA's environmental consultant TRC at the subject sample location and at three additional sample locations on the project site to confirm whether reportable concentrations of petroleum compounds are present in the soil. Additional samples were collected and analyzed from each of the four locations at 5, 10, and 15 feet below ground surface (bgs). None of the additional samples exceeded reportable concentrations.

L. COMMUNITY DISRUPTION AND ENVIRONMENTAL JUSTICE: Provide a socio-economic profile of the affected community. Describe the impacts of the proposed project on the community. Identify any community resources that would be affected and the nature of the effect.

- a. A description of the low-income and minority population within the study area affected by the project, and a discussion of the method used to identify this population (e.g., analysis of Census data, minority business directories, direct observation, or a public involvement process).**

The proposed project site is located within Montague, MA Census Tract 407.02 Block Group 2. While there are several Census Tracts/Blocks within the Village of Turners Falls that meet the Environmental Justice Criteria based on household income, 2017 US Census Data obtained from the Massachusetts Executive Office of Energy and Environmental Affairs (MassGIS) shows that Tract 407.02, Block Group 2 does not meet criteria for consideration as an Environmental Justice community (please see **Figure 6-Environmental Justice Areas.**)

- b. A discussion of all adverse effects of the project both during and after construction that would affect the identified minority and low-income population.**

No adverse effects to any minority or low-income populations are anticipated to result from project construction or operation.

- c. A discussion of all positive effects that would affect the identified minority and low-income population, such as an improvement in transit service, mobility, or accessibility.**

FRTA's intent with the proposed project is to effectively support its current and future bus operations so that it may continue to serve the 41 communities throughout Franklin, Hamden, Hampshire, and Worcester counties where it operates. FRTA serves a population of over 100,000, including services for the elderly and individuals with disabilities. The project will have significant benefit for these groups by supporting continuing availability of bus transportation in the region.

- d. A description of all mitigation and environmental enhancement actions incorporated into the project to address the adverse effects, including,**

but not limited to, any special features of the relocation program that go beyond the requirements of the Uniform Relocation Act and address adverse community effects such as separation or cohesion issues; and the replacement of the community resources destroyed by the project.

No mitigation or environmental enhancement actions have been incorporated into the project, since no adverse community effects have been identified.

- e. A discussion of the remaining effects, if any, and why further mitigation is not proposed.**

No mitigation or environmental enhancement actions have been incorporated into the project, since no relevant adverse community effects have been identified.

- f. For projects that traverse predominantly minority and low-income and predominantly non-minority and non-low-income areas, a comparison of mitigation and environmental enhancement actions that affect predominantly low-income and minority areas with mitigation implemented in predominantly non-minority or non-low-income areas. Recipients and subrecipients that determine there is no basis for such a comparison should describe why that is so.**

The project is a fixed facility located on a discrete parcel of land in Turners Falls. For this reason, the project will not “traverse” any of the types of areas described, and thus will not have a negative impact in the way contemplated by this question.

M. USE OF PUBLIC PARKLAND AND RECREATION AREAS: Indicate parks and recreational areas on the site map. If the activities and purposes of these resources will be affected by the proposed project, state how.

The proposed project is not located within .5 miles of any public parkland and will not affect any public parkland or recreational areas (please see **Figure 4-Environmental Resources Map.**)

N. IMPACTS ON WETLANDS: Show potential wetlands on the site map. Describe the project’s impact on on-site and adjacent wetlands.

While there are no wetlands on the proposed project site, an isolated wetland is present on the abutting parcel adjacent to the site to the immediate south. The potential for construction phase impacts to this wetland will be mitigated through use of appropriate erosion Best Management Practices. Stormwater from the completed facility during operations will be managed with structural Stormwater management facilities that will be included in project design in compliance with both the Massachusetts Stormwater Standards and with National Pollutant Discharge Elimination System (NPDES) requirements.

O FLOODPLAIN IMPACTS: Is the proposed project located within the 100-year floodplain? If so, address possible flooding of the proposed project site and flooding induced by proposed project due to its taking of floodplain capacity.

The project site is not located within 100-year floodplain.

P. IMPACTS ON WATER QUALITY, NAVIGABLE WATERWAYS, & COASTAL ZONES:
If any of these are implicated, provide detailed analysis.

The project has been designed by FRTA's engineer, STV, to meet all requirements of the Massachusetts Stormwater Policy and it will thus have no negative impact on water quality (please see attached **Stormwater Management Report**.)

The site is not located within or adjacent to any navigable waterway and is not located within the Coastal Zone.

Q. IMPACTS ON ECOLOGICALLY-SENSITIVE AREAS AND ENDANGERED SPECIES:
Describe any natural areas (woodlands, prairies, wetlands, rivers, lakes, streams, designated wildlife or waterfowl refuges, and geological formations) on or near the proposed project area. If present, state the results of consultation with the state department of natural resources on the impacts to these natural areas and on threatened and endangered fauna and flora that may be affected.

The project site is not located within any state or federally designated ecologically sensitive areas or designated rare or endangered species habitat areas (please see **Figure 4-Environmental Resources Map**.)

R. IMPACTS ON SAFETY AND SECURITY: **Describe the measures that would need to be taken to provide for the safe and secure operation of the project after its construction.**

The proposed facility will be enclosed by a 6'-0" tall chain-link fence, where access is restricted to the main driveway. Pedestrian access will be controlled and will be monitored by security cameras. Vehicular access will be via the main entry where parking gates restrict public access to the site and parking area. An electronic access control system will be implemented that will include parking gates. Electronic access control will also be provided to the building along with a site monitoring video surveillance system.

S. IMPACTS CAUSED BY CONSTRUCTION: **Describe the construction plan and identify impacts due to construction noise, utility disruption, debris and spoil disposal, air and water quality, safety and security, and disruptions of traffic and access to property.**

The FRTA's proposed maintenance facility will be built using standard construction practices. Noise producing operations will be limited to the use of construction vehicles and tools. The building will be constructed with standard spread footings, and there will be no pile driving utilized for the building foundations.

Construction activities will be limited to weekday and daytime hours to limit noise and light pollution.

Utility disruptions are anticipated to be minimal for water and sewer connections and the selected construction contractor will adhere to a Storm Water Pollution Prevention Plan, which will prevent sediment run-off, erosion, dust production and tracking of mud and debris from construction vehicle tires into the public roadways.

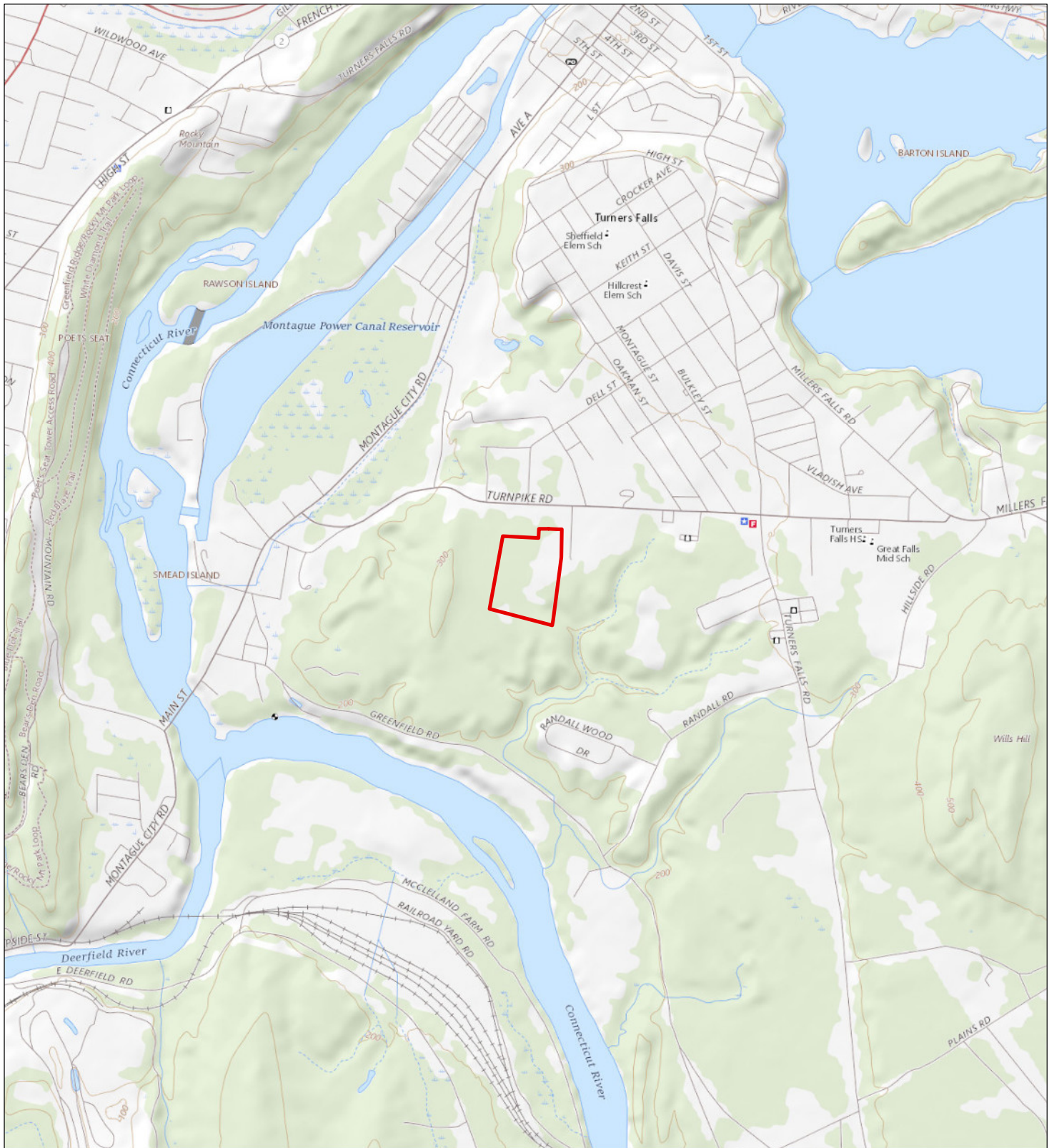
The construction contractor will be required to perform all work in accordance with OSHA construction and workplace standards to prevent accidents and promote workplace safety.


The action described above meets the criteria for a NEPA categorical exclusion (CE) in accordance with 23 C.F.R. § 771.118(d)

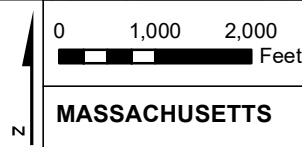
Applicant's Environmental Reviewer

Date

Figure 1-Site Locus Map



 Project Parcel



Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854
(978) 970-5600

MASSACHUSETTS



SITE LOCUS MAP
FRANKLIN COUNTY
REGIONAL TRANSIT AUTHORITY
BUS MAINTENANCE AND
STORAGE FACILITY
TURNERS FALLS, MONTAGUE, MA

Base map: USGS/The National Map, 2018

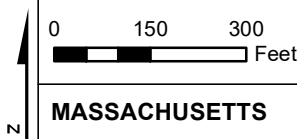
FIGURE 1

DECEMBER 2018

Figure 2-Aerial Map



 Project Parcel



Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854
(978) 970-5600

MASSACHUSETTS



AERIAL MAP
FRANKLIN COUNTY
REGIONAL TRANSIT AUTHORITY
BUS MAINTENANCE AND
STORAGE FACILITY
TURNERS FALLS, MONTAGUE, MA

Base map: MassGIS/USGS, 2015

FIGURE 2

DECEMBER 2018

Figure 3-Architectural Plans and Renderings

MARK	DATE	DESCRIPTION	BY

ISSUE BLOCK

PROJ. STATUS:	CONCEPT DESIGN
ISSUE DATE:	05/01/2019
PROJECT NO.:	4019047
DESIGNED BY:	SP
DRAWN BY:	SP
CHECKED BY:	MP/PK
APPROVED BY:	ND
COPYRIGHT:	

SHEET TITLE

FIRST FLOOR PLAN



SITE PLAN
 1" = 40'-0"
 40' 20' 0 40'

SPACE PLANNING SUMMARY

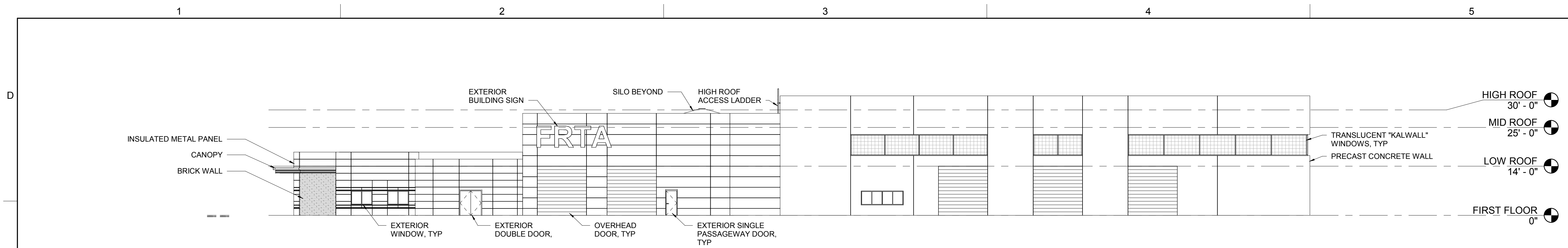
ADMIN 4746 SF	SITE AREA SUMMARY	QUANTITY
MAINTENANCE 9070 SF	IMPERVIOUS SURFACE (PAVING)	109425 SF
SERVICE 7173 SF	PERVIOUS SURFACE (GRASS)	94580 SF
	TOTAL BUILDING AREA	20989 SF
	SITE TOTAL	224994 SF

VEHICLE LEGEND

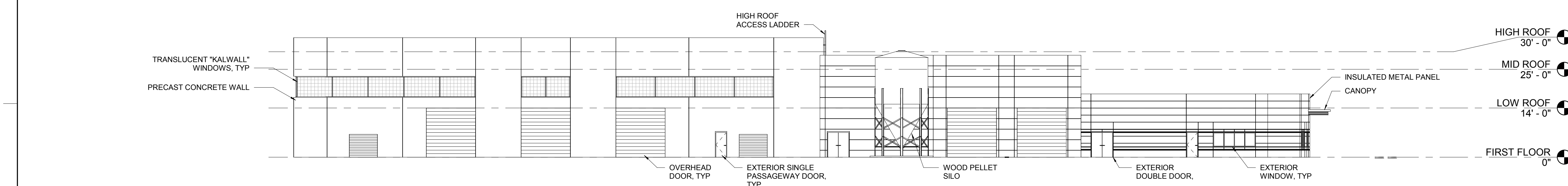
VEHICLE	LENGTH	QUANTITY	MANUFACTURER
[Symbol]	21' - 0"	21	SHEPARD BROS., ELKHART, COACH & EQUIP.
[Symbol]	25' - 0"	9	COACH & EQUIP., STARCRAFT
[Symbol]	30' - 0"	1	NEW FLYER OF AMERICA
[Symbol]	35' - 0"	7	GILLIG, INTERNATIONAL
[Symbol]	20' - 0" ±	4	NON - REVENUE VEHICLES



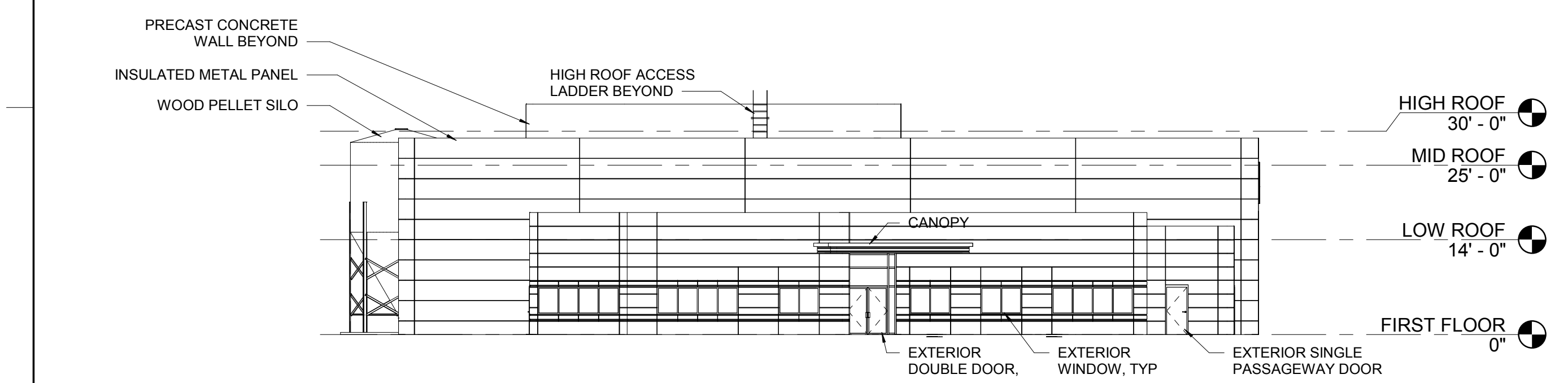
ENLARGED PLAN AT ADMIN
 3/32" = 1'-0"
 0 16' 32' 64'



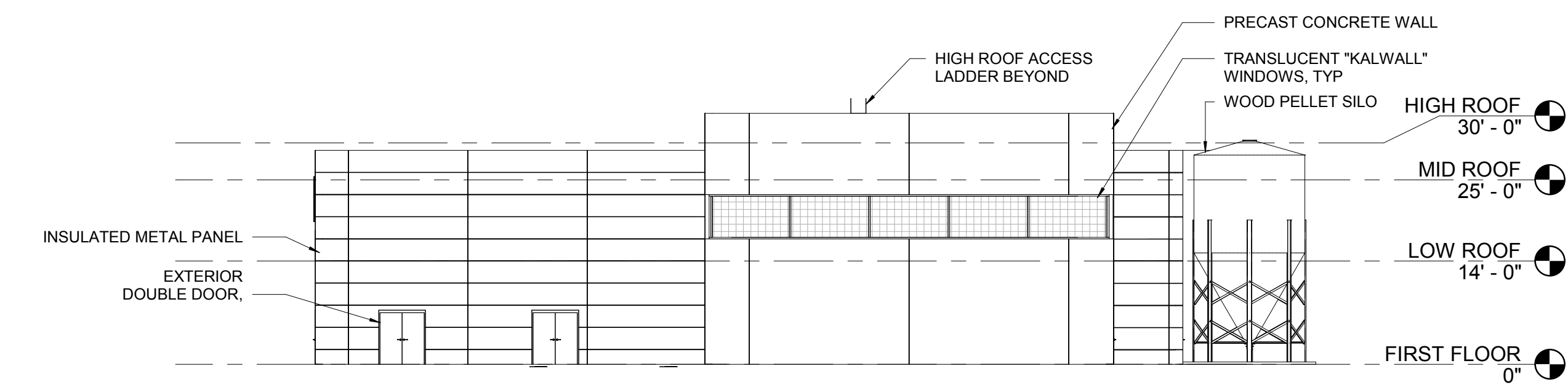
2 NORTH ELEVATION
 1/16" = 1'-0" 0 8' 16' 32'



1 SOUTH ELEVATION
 1/16" = 1'-0" 0 8' 16' 32'

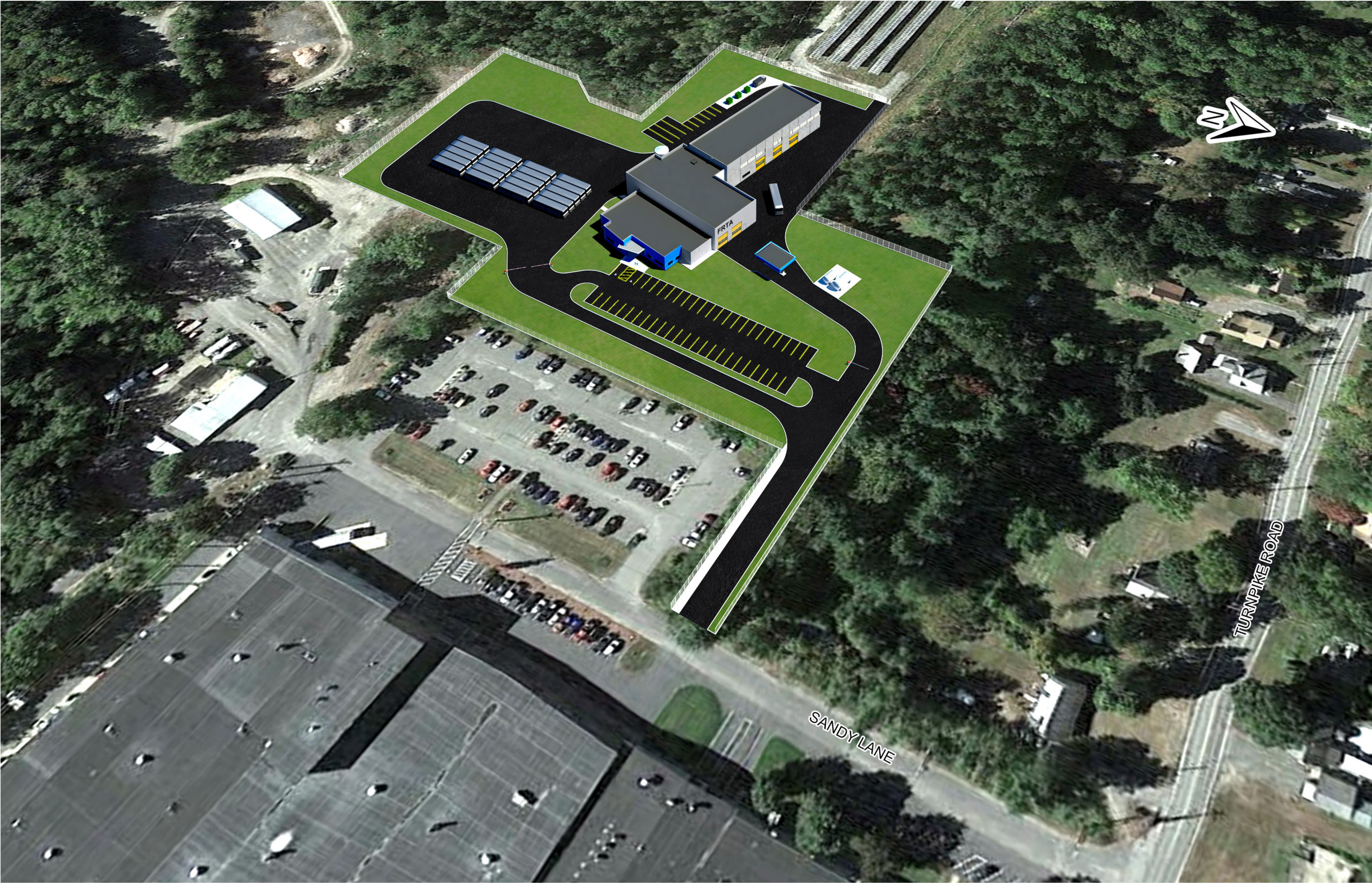


3 EAST ELEVATION
 1/16" = 1'-0" 0 8' 16' 32'



4 WEST ELEVATION
 1/16" = 1'-0" 0 8' 16' 32'

AERIAL VIEW - OVERALL SITE AND SURROUNDING AREA



FRTA - PROPOSED VEHICLE MAINTENANCE & OPERATIONS FACILITY

SANDY LANE, VILLAGE OF TURNER FALLS, MONTAGUE, MA

GROUND LEVEL VIEW - NORTHEAST CORNER OF SITE















FRTA - PROPOSED VEHICLE MAINTENANCE & OPERATIONS FACILITY

SANDY LANE, VILLAGE OF TURNER FALLS, MONTAGUE, MA

May 1, 2019

Figure 4-Environmental Resources Map




	Project Parcel		NHESP Estimated Habitat of Rare Wildlife
	Quarter-Mile Radius Around Project Parcel		NHESP Priority Habitat of Rare Species
	Perennial Stream		Municipal Solid Waste Landfill
	Intermittent Stream		Parcel Boundaries
	DEP Wetland		
	Open Space and Recreational Land		
	Potential Vernal Pool		
	Certified Vernal Pool		

Data: MassGIS, 2017, 2018
Base map: MassGIS/USGS, 2015

0 300 600 Feet

N

MASSACHUSETTS



Map Location



Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854
(978) 970-5600

**ENVIRONMENTAL
RESOURCES MAP**

**FRANKLIN COUNTY
REGIONAL TRANSIT AUTHORITY**



**BUS MAINTENANCE AND
STORAGE FACILITY**

TURNERS FALLS, MONTAGUE, MA

FIGURE 4
DECEMBER 2018

Figure 5-Historical Resources Map



<ul style="list-style-type: none"> Project Parcel Quarter-Mile Radius Around Project Parcel Parcel Boundaries 	<p>MHC Historic Inventory Areas</p> <ul style="list-style-type: none"> Nat'l Register of Historic Places Preservation Restriction Local Historic District NRHP and LHD MHC Inventoried Area 	<p>0 300 600 Feet</p>	 <p>Wannalancit Mills 650 Suffolk Street Lowell, MA 01854 (978) 970-5600</p>
<p>MHC Historic Inventory Points</p> <ul style="list-style-type: none"> ● Nat'l Register of Historic Places ★ Preservation Restriction ▲ Local Historic District ▲ NRHP and LHD ● Inventoried Property 	<p><i>Data: Massachusetts Historical Commission, MassGIS, 2018 Base map: MassGIS/USGS, 2015</i></p>	<p>MASSACHUSETTS</p>  <p>Map Location</p>	<p align="center">HISTORICAL RESOURCES MAP</p> <p align="center">FRANKLIN COUNTY REGIONAL TRANSIT AUTHORITY BUS MAINTENANCE AND STORAGE FACILITY TURNERS FALLS, MONTAGUE, MA</p>
		<p>FIGURE 5</p>	<p>DECEMBER 2018</p>

Montague Zoning Opinion Letter

APR 09 2019



INSPECTOR of BUILDINGS

Town of Montague

1 Avenue A
Turners Falls, MA 01376

(413) 863-3200 ext. 206
FAX: (413) 863-3222

4/4/2019

Michael Perreault, CCTM
Franklin Regional Transit Authority
John W. Olver Transit Center
12 Olive Street
Greenfield, MA 01301

Subject Property: Sandy lane, Montague, MA

Re: Special Permit

Mr. Perreault,

It is my opinion that the proposed FRTA maintenance facility to be constructed on Sandy Lane qualifies as a governmental facility under the Montague Zoning Bylaws section 5.2(a)iii. As such, it is a permitted use in all zoning districts. Site Plan Review will be required from the Planning Board under Zoning Bylaws Section 9.1.2(a) for construction exceeding 3,000 square feet. The final site plan should be reviewed for conformance with other sections of the zoning bylaws pertaining to dimensional setbacks, parking, and signage.

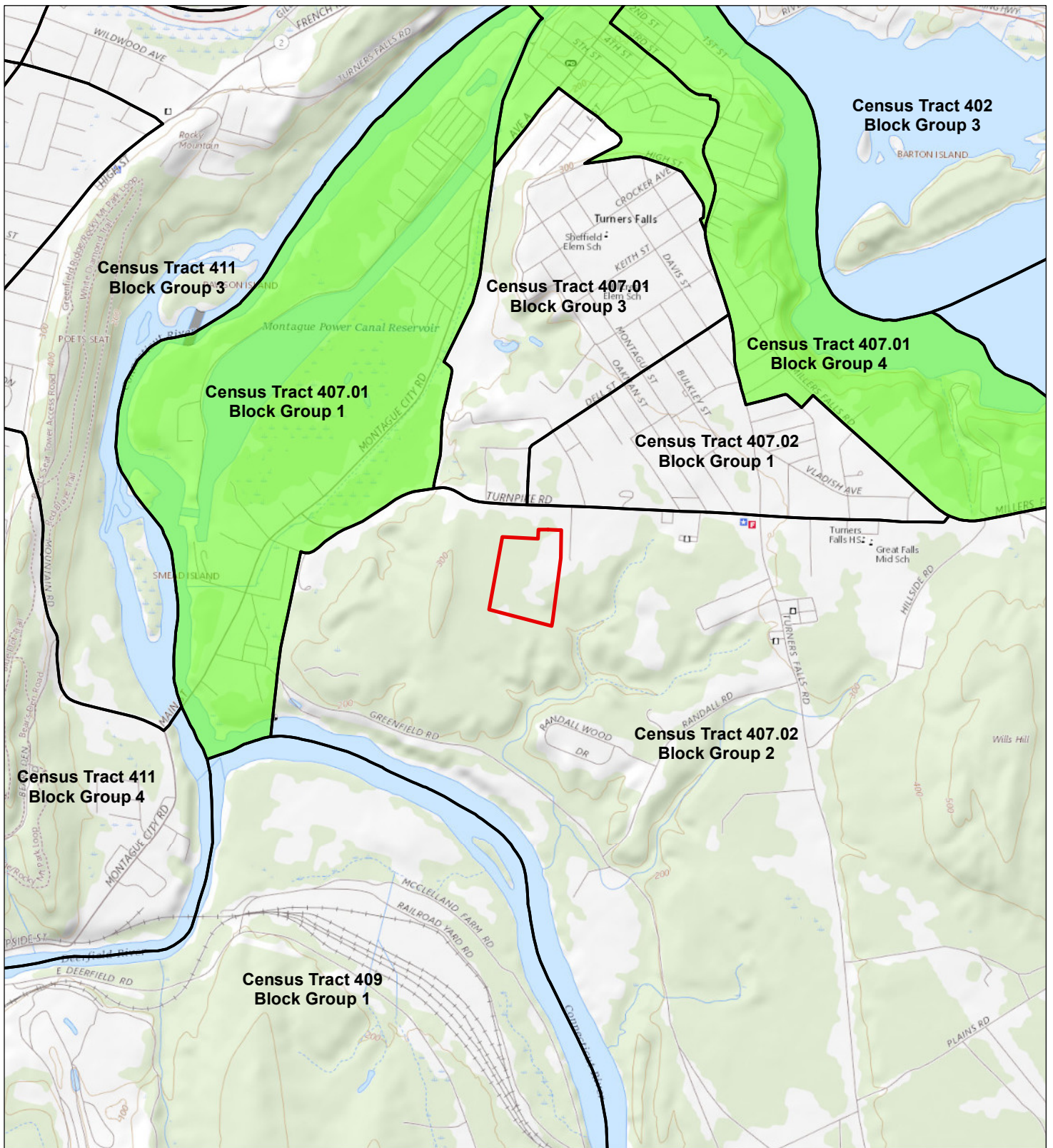
Sincerely,

Christopher Rice

Building Commissioner

Cc: Town Administrator
Town Planner

Figure 6-Environmental Justice Areas

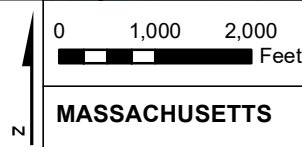


- Project Parcel
- Block Group Boundary

Environmental Justice 2010 Populations

EJ Criteria, by Block Group

Income



MASSACHUSETTS



TRC
 Wannalancit Mills
 650 Suffolk Street
 Lowell, MA 01854
 (978) 970-5600

ENVIRONMENTAL JUSTICE AREAS
FRANKLIN COUNTY
REGIONAL TRANSIT AUTHORITY
BUS MAINTENANCE AND STORAGE FACILITY
TURNERS FALLS, MONTAGUE, MA

Data: Executive Office of Energy and Environmental Affairs' (EEA)/MassGIS, 2012
 US Census Bureau, 2017
 Base map: USGS/The National Map, 2018

Stormwater Management Report

FRANKLIN REGIONAL TRANSIT AUTHORITY VEHICLE MAINTENANCE FACILITY

Montague, Massachusetts

STORMWATER MANAGEMENT REPORT

Prepared For:

Samuel Moffett, AICP TRC 650 Suffolk Street Lowell, MA

Franklin Regional Transit Authority

12 Olive Street – Suite 1
Greenfield, MA 01301

Prepared By:



STV Incorporated

One Financial Center
3rd Floor
Boston, MA

**Franklin Regional Transit Authority Vehicle Maintenance Facility
Stormwater Management Report**

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**Franklin Regional Transit Authority Vehicle Maintenance Facility
Stormwater Management Report**

Appendices

Appendix A – HydroCAD Calculations

Franklin Regional Transit Authority Vehicle Maintenance Facility

Stormwater Management Report

1 EXECUTIVE SUMMARY

This Stormwater Management Report has been prepared at the 30% design level and will be updated as the design progresses to address the construction of a new Vehicle Maintenance Facility for the Franklin Regional Transit Authority (FRTA). The proposed building will be developed in an undeveloped site in the town of Montague, MA.

The proposed stormwater management system has been designed in accordance with the Massachusetts Department of Environmental Protection (MassDEP) Stormwater Management Policy. The main elements of the proposed system includes water quality BMP's to capture runoff from the driveways, parking lots and the fueling area prior to detention/infiltration and discharge. Runoff from the roof will also be directed to proposed subsurface detention/infiltration chambers. Runoff from the proposed site will not be directed into the existing Sandy Lane. These proposed features will remove pollutants, attenuate peak runoff rates, and provide groundwater recharge. The proposed system will fully meet the Stormwater Management Standards.

2 PROJECT DESCRIPTION

2.1 Project Purpose and Goals

The FRTA is a regional transit authority and a political subdivision of the Commonwealth of Massachusetts, created pursuant to Section 25 of Chapter 161B. The FRTA is prohibited, by the provisions of Section 25 of Chapter 181B, from directly operating transit service; thus, all fixed-route service is provided by a subcontractor, Franklin Transit Management, Inc., as well as a local Council on Aging. Since its creation in 1978, the FRTA's routes cover the largest and most rural geographical area of any transit authority in the Commonwealth of Massachusetts. In addition, the FRTA provides public transit services to 41 communities throughout Franklin, Hampden, Hampshire, and Worcester counties in the Western Massachusetts region. The FRTA is funded with federal, state, and local subsidies, as well as fare box revenue.

The FRTA requires a new 20,000 sf-plus state-of-the-art maintenance and operations facility to meet both current and future operational needs. The new facility will keep the FRTA's fleet in the state-of-good- repair. The FRTA's existing administrative office, vehicle storage, and maintenance facility is currently located at 382 Deerfield Street in Greenfield, MA. The FRTA's maintenance operations has been housed at this location for years; however, the FRTA does not own the facility—it is leased from a private party. Given the facility's age and the fact that the FRTA does not own it, renovations would not be feasible, economical, or in the best interest for the FRTA. In addition, the current site's limited size and configuration restrict the

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FRTA from achieving their goal of providing a sustainable state-of-the-art facility, which is needed to maintain current and new transit vehicle technologies.

To address these deficiencies, the Franklin Regional Transit Authority has engaged STV Incorporated to design a new Vehicle Maintenance Facility in the town of Montague, MA

The proposed project will construct a new vehicle maintenance facility. As used in this stormwater report, the term “Site” refers to the 5.71-acre watershed that will be affected by the proposed project.

The purpose of this report is to demonstrate the project’s compliance with the Massachusetts Wetland Protection Act (MGL Ch 131 c. 40) and associated regulations (310 CMR 10.00) as described in the Department of Environmental Protection (MassDEP) Stormwater Handbook.

2.2 Study Area and Existing Conditions

The proposed location for the FRTA Vehicle Maintenance Facility is located on Sandy Lane in the town of Montague, MA. The existing site is situated between the Judd Wire parking lot to the East and town solar farm to the West. Directly to the South East of the proposed site is the town of Montague Recycling Center. The area is a low lying pit for vegetative refuse dumping. South West of the site is a low lying depression where majority of storm runoff from the site drains to. This area has been deemed an Isolated Land Subject to Flooding (ILSF). The existing site is 100% pervious material. Majority of the site is comprised of forest growth with a gravel driveway leading to the solar farm running through the middle of the site.

The proposed building site is within a fully pervious raw site.

There is no existing stormwater system at the project Site. Stormwater is allowed to infiltrate in the grassy/vegetated areas and flow towards the existing ILSF.

The Site is not located in an Interim Wellhead Protection Area, in a Zone II Wellhead Protection Area, near Outstanding Resource Water, or near a Special Resource Water. It is located directly North East of an Isolated Land Subject to Flooding (ILSF). ILSF’s do not fall under the Massachusetts Wetland Protection Act.

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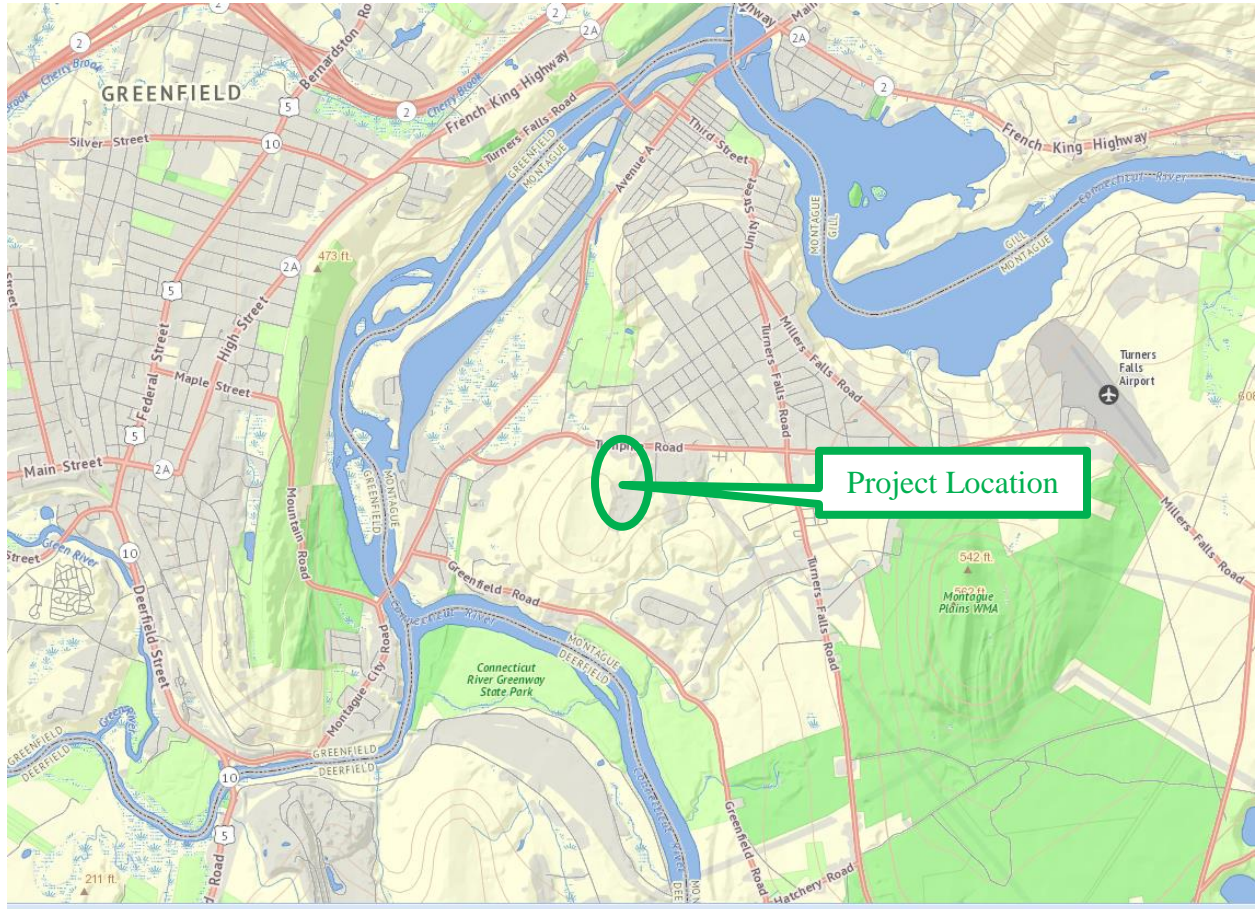


Figure 1: Project Locus

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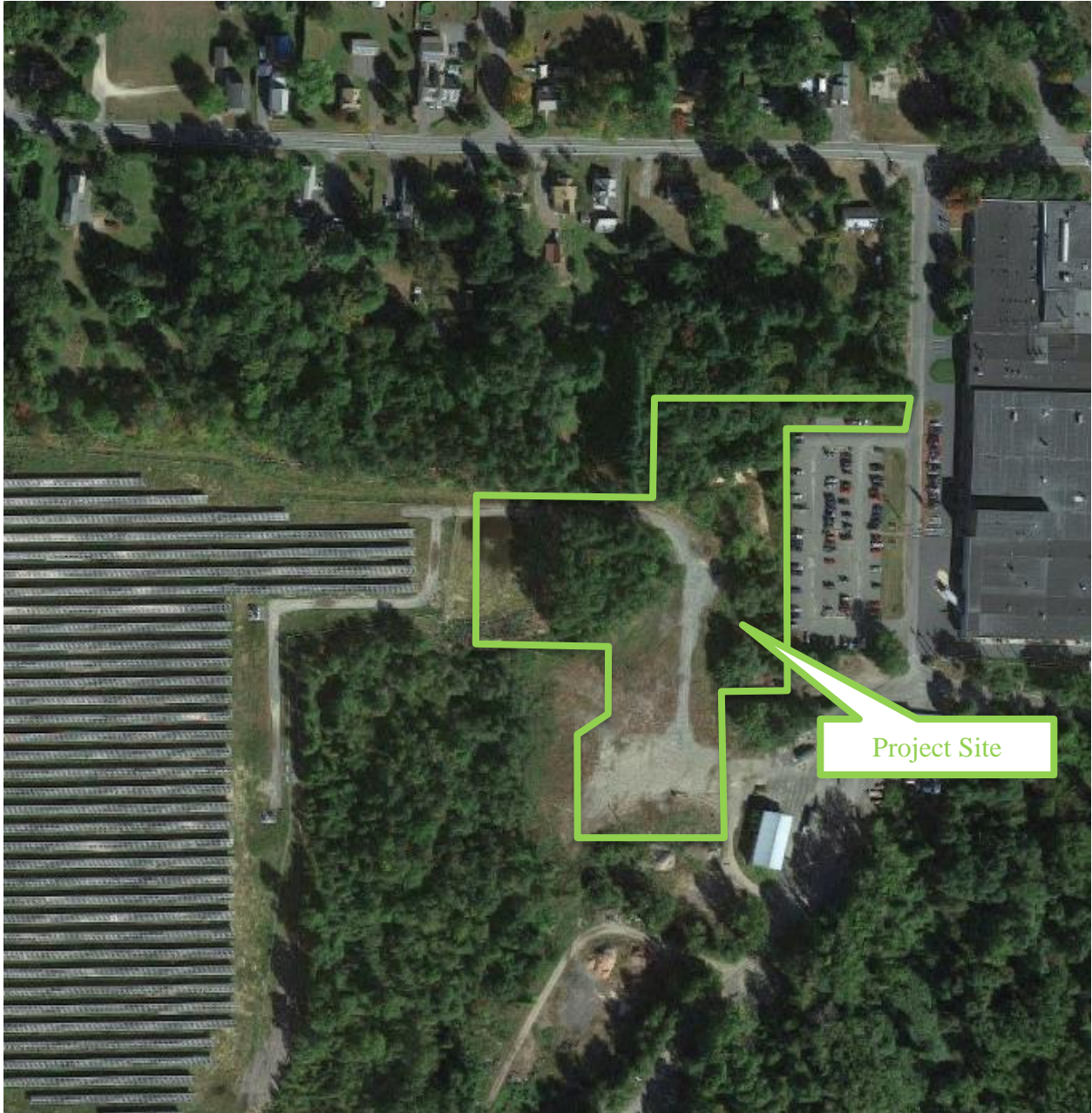


Figure 2: Aerial Image of Project Site

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2.3 Proposed Conditions

The proposed improvements at the FRTA site have been designed to fully comply with the Massachusetts Wetland Protection Act and the MassDEP's Stormwater Handbook.

The project consist of:

- Construction of a new vehicle maintenance facility for the FRTA bus fleet.
- Construction of storage area for the FRTA bus fleet
- Connection of existing sewer, water, and electric service from Turnpike road and Sandy lane to the new facility.

The proposed improvements will increase the impervious area at the Site so a subsurface detention/ infiltration structure and a leaching basin are proposed to capture runoff, attenuating the peak discharge rate and providing groundwater recharge. Roof runoff will be routed to the subsurface infiltration structure and runoff from the proposed pavement will be captured via, above ground pond, gravel swale, or subsurface detention/infiltration structure.

2.4 Methodology

The existing topography in the project area was mapped during an on-the-ground survey performed for the project by Bryant Associates in March of 2018. This survey information was supplemented with GIS data available through MassGIS.

The existing ILSF to the South West of the site was incorporated through GIS data available through MassGIS

Watersheds were analyzed for existing and proposed conditions during the 2-, 10-, 50-, and 100-year rainfall events using HydroCAD computer software. HydroCAD is based on the National Resources Conservation Service (NRCS, formerly Soil Conservation Service, or SCS) Technical Release 20 and SCS Technical Release 55.

NOAA Atlas 14 - *Precipitation-Frequency Atlas of the United States* data for the Town Montague, as obtained from the Precipitation Frequency Data Server, was used to determine the depth of rainfall for each analyzed storm event. NOAA Atlas 14 superseded the *Rainfall Frequency Atlas* contained in TP-40 in 2015.

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Table 1: Precipitation Frequency

24-Hour Storm Event	Depth
2-year	3.02 inches
10-year	4.33 inches
50-year	6.22 inches
100-year	7.29 inches

Soil types were obtained from the USDA Natural Resources Conservation Service. Soil at the Site was comprised of two soil groups: “Windsor loamy sand” and “Udorthents, refuse substratum”, with the “Windsor loamy sand considered Hydrologic Soil Group A and the “Udorthents, refuse substratum” considered Hydrologic Soil Group B. A Soils Professional will verify the soil types once excavation equipment can access the site, and the design of all stormwater BMPs will be updated as needed before they are installed.

3 STORMWATER MANAGEMENT STANDARDS

3.1 Standard 1: No New Untreated Discharges

No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

Fully met.

The proposed design will introduce a new outfall in the isolated land subject to flooding to the South West of the Site, but the discharged stormwater will be treated (see Standard 4, below) and a riprap apron at the outfall will be designed according to HEC-14 to prevent erosion.

3.2 Standard 2: Peak Rate Attenuation

The post-development peak discharge rate must be equal to or less than the pre-development rate from the 2-year and the 10-year 24-hour storms. If increased off-site flooding will result from peak discharges from the 100-year 24-hour storms, BMPs must also be provided to attenuate these discharges.

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Fully met.

A subsurface detention/infiltration structure was designed to store stormwater and attenuate the peak runoff rate. The subsurface detention/infiltration structures are sized to provide storage up to the 25-year event. Some additional storage and infiltration might be expected from the proposed swale, pond, and leaching basins, but this was conservatively ignored. The peak runoff rates under the proposed conditions will be less than the existing peak runoff rates for the 2-, 10-, 50-, and 100-year storms. The complete HydroCAD analysis is attached in Appendix A and is summarized in Table 2.

Table 2: Summary of Hydrologic Analysis

Parameter	Existing Conditions	Proposed Conditions
Total Area (ac)	5.17	5.17
Pervious Area (ac)	5.17	2.47
Impervious Area (ac)	0	2.7
Hydrologic Soil Group	A/B	A/B
Curve Number for Pervious Area	47	39
Curve Number for Impervious Area	N/A	98
Composite Curve Number	54	70
2-year Peak (3.02 in) Flow Rate (cfs)	0.18	0.18
10-year Peak (4.33 in) Flow Rate (cfs)	1.44	0.64
50-year Peak (6.22 in) Flow Rate (cfs)	4.92	4.07
100-year Peak (7.29 in) Flow Rate (cfs)	7.33	6.68

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3.3 Standard 3: Recharge

The annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. Infiltration structures must drain fully within 72 hours.

Will be fully met.

The *Massachusetts Stormwater Handbook* requires that stormwater management systems are able to recharge 0.60 inches times the area of post-development impervious area for type A soils. The required recharge volume is shown in Table 3. The size of the proposed infiltration structure was verified using the “Simple Dynamic” method with calculations being performed in HydroCAD. The recharge volume provided was determined by adding the storage volume of the detention structure below the overflow outlet to the volume infiltrated during the peak two hours of a storm event.

Note that a site visit has not been conducted by a Soils Professional to verify the soil conditions or the groundwater elevation at this time. A Rawls Rate of 2.41 inches/hour corresponding to Loamy Sand (HSG A) was assumed. The soil type will be verified before finalizing the design of the subsurface structure and these calculations will be updated if needed.

Table 3: Required and Proposed Recharge Volume

Proposed Impervious Area (Acres)	Required Recharge Volume (Cubic Feet)	Recharge Volume Provided (Cubic Feet)
2.70	5880.60	22,792

The subsurface structure drawdown time will remain under 72 hours:

$$Time_{drawdown} = \frac{R_v}{(K)(Bottom\ Area)}$$

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Where:

Chamber System A:

R_v = Storage Volume = 7141 cf

K = Saturated Hydraulic Conductivity (Rawls Rate) = 0.60 in/hr = .05 ft/hr

Bottom Area = Bottom Area of Recharge Structure = 2669 sf

Maximum allowable drawdown time is 53.5-hours.

Chamber System B:

R_v = Storage Volume = 27,666 cf

K = Saturated Hydraulic Conductivity (Rawls Rate) = 0.60 in/hr = .05 ft/hr

Bottom Area = Bottom Area of Recharge Structure = 10,208 sf

Maximum allowable drawdown time is 54-hours.

3.4 Standard 4: Total Suspended Solid Removal

Stormwater management system shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This standard is met when:

- a) Suitable practices for source control and pollution prevention are identified in a longterm pollution prevention plan, to be provided at a later date and thereafter are implemented and maintained;*
- b) Structural stormwater best management practices are sized to capture the required water quality volume as determined in accordance with the Massachusetts Stormwater Handbook; and*
- c) Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.*

Standard met. The proposed project utilizes numerous mechanisms for TSS removal. A typical treatment for the development BMPs will include Monthly Street sweeping with a high-efficiency vacuum truck, deep-sump hooded catch basins and a water quality unit.

Due to the land use subjected to higher potential pollutant loading (LUHPPL), the required water quality volume is based on 1.0 inch of runoff times the total impervious area of the post-development conditions. The Water Quality for the Drainage area is met by a paved area sweeping program, the deep sumps in catch basins and two water quality structures which were sized to treat all runoff.

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3.5 Standard 5: Land Uses with Higher Potential Pollutant Loads

For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable.

Fully Met

The proposed maintenance facility qualifies the site as a land use with higher potential pollutant loads and therefore water quality calculations were performed to treat first 1-inch of stormwater runoff to the maximum extent practicable. Proposed source controls and pollution prevention measures will be identified in the Long-Term Pollution Prevention Plan.

3.6 Standard 6: Water Supply Protection Areas

Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near any critical area require the use of the specific source control, pollution prevention measures, and the specific structural stormwater best management practices determined by the DEP to be suitable for managing discharges to such areas.

The Site is not located in or near any critical areas (Zone II or Interim Wellhead Protection Area, Outstanding or Special Resource Waters, recharge areas for public water supplies, bathing beaches, cold-water fisheries, or shellfish growing areas). This standard does not apply.

3.7 Standard 7: Redevelopments and Other Projects Subject to the Standards Only to the Maximum Extent Practicable

A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6.

The current project is not considered a redevelopment project. Stormwater Management Standards will be fully met.

3.8 Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A plan to control construction-related impacts shall be developed and implemented.

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Will be fully met.

A Construction-Period Pollution Prevention Plan for controlling and erosion and sedimentation has not been developed at this time. Plans will contain proposed sedimentation and erosion control measures and details in future submittals.

3.9 Standard 9: Operation and Maintenance Plan

A Long-Term Operation and Maintenance (O&M) Plan shall be developed and implemented to ensure that stormwater management systems function as designed.

Will be fully met.

A Stormwater Pollution Prevention Plan and Operation and Maintenance Plan has not been developed at this time.

3.10 Standard 10: Prohibition of Illicit Discharges

All illicit discharges to the stormwater management system are prohibited.

Fully met.

The proposed stormwater management system is not anticipated to provide the opportunity for illicit discharges. An Illicit Discharge Compliance Statement will be submitted before stormwater is discharged to the completed BMPs.