

Commonwealth Fusion Systems Campus - Building 3

125 Hospital Road
Devens, Massachusetts

PREPARED FOR

Pivotal Manufacturing Partners
125 Hospital Road
Devens, Massachusetts

PREPARED BY



1 Cedar Street
Providence, RI 02903-1023

October 2025

DEVENS ENTERPRISE COMMISSION

DEC NO. _____

DATE: _____

October 23, 2025

FEE: _____

**DEVENS REGIONAL ENTERPRISE ZONE
PERMIT APPLICATION LEVEL 2**

=====

\$61,578,169

OWNER Pivotal Devens, LLC.APPLICANT Pivotal Devens, LLC.ADDRESS 231 Royal Palm WayADDRESS 231 Royal Palm WayCITY/STATE/ZIP Palm Beach, FL 33480CITY/STATE/ZIP Palm Beach, FL 33480PHONE 203-913-7223PHONE 203-913-7223

FAX _____

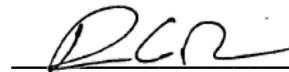
FAX _____



SIGNATURE

David Robbins Managing Member

Type or print name and title



SIGNATURE

David Robbins Managing Member

Type or print name and title

If appropriate, attach a separate sheet with the name(s), address(es), and telephone/fax numbers for the project engineer, attorney, or other "development team" personnel.

SITE / LOCATION / STREET Commonwealth Fusion Systems campus / 125 Hospital RoadLOT SIZE / TOTAL PARCEL / ZONING DISTRICT: 14.05 ac. / Lot 2 = 14.05 ac. / Innovation and
Technology Business District and Water Resource Protection Overlay District, and partially within the
Slope Resource Area OverlaySTATEMENT OF PROPOSED WORK OR ACTIVITY: Phase 2 of Campus Master Plan including
construction of CFS-3 Manufacturing and Office Space with associated parking garage, outdoor
green space, circulation drives, site utilities, and stormwater management system

=====

SCOPE OF WORK (pick the actions that best fit your project or application)

☒ Site Plan ☐ Reconsideration☐ Wetlands NOI ☐ Zoning Variance☐ Minor amendment or modification of an approved plan☐ Historic District renovations/addition/alternations☐ Other (Specify) _____Explain work to be performed: Site clearing and grading, installation of utility and drainage infrastructure,
construction of site walls, foundation, building, parking garage, roadway paving, and ancillary site
improvements.

Comments from Notifying Agencies: _____



Conceptual Estimate Summary
and Permit Fee Calculation

CFS-3 Manufacturing Facility
Site, Core & Shell
Devens, MA
October 7, 2025

DESCRIPTION	TOTAL	SCOPE OF WORK	PERMIT VALUES
3100 Earthwork + Paving	\$ 4,395,518	Sitework	
3290 Landscaping	\$ 585,750	Sitework	
3300 Site Utilities	\$ 2,100,148	Sitework	
SITWORK COW SUBTOTAL	\$ 7,081,416	Base fee of \$13,000 1.1% on work above \$1M	\$ 79,896
0330 Concrete	\$ 7,736,795	Building	
0335 Concrete Coatings	\$ 42,763	Building	
0347 Tilt-Up Concrete	\$ 13,648,164	Building	
0353 Miscellaneous Concrete	\$ 274,904	Building	
0400 Masonry	\$ 669,044	Building	
0500 Structural Steel	\$ 4,423,187	Building	
0510 Steel Erection	\$ 1,310,113	Building	
0521 Joist & Deck	\$ 2,601,111	Building	
0550 Miscellaneous Steel	\$ 722,417	Building	
0610 Rough Carpentry	\$ 107,031	Building	
0713 Sheet Waterproofing	\$ 146,707	Building	
0720 Insulation	\$ 100,553	Building	
0727 Air Barriers	\$ 77,325	Building	
0742 Metal Wall Panels	\$ 2,411,624	Building	
0750 Roofing	\$ 2,370,564	Building	
0781 Applied Fireproofing	\$ 421,740	Building	
0784 Firestopping	\$ 35,145	Building	
0792 Caulking & Sealants	\$ 577,627	Building	
0810 Doors and Frames	\$ 197,163	Building	
0833 Overhead Doors	\$ 632,141	Building	
0840 Glass & Glazing	\$ 1,374,394	Building	
0921 Drywall & Framing	\$ 1,146,856	Building	
0990 Painting	\$ 240,739	Building	
1000 Specialties	\$ 84,319	Building	
1073 Canopies	\$ 23,430	Building	
1113 Loading Dock Equipment	\$ 46,860	Building	
1420 Elevators	\$ 1,405,800	Building	
2100 Fire Suppression	\$ 1,211,563	Building	
2200 Plumbing	\$ 2,258,217	Building	
2300 HVAC	\$ 1,939,125	Building	
2600 Electrical	\$ 6,259,332	Building	
BUILDING COW SUBTOTAL	\$ 54,496,753	1.1% on Remaining	\$ 599,464
COST OF WORK TOTAL	\$ 61,578,169		
Round Up to Nearest \$100,000	\$ 21,831	1.1% on Remaining	\$ 240
Total Anticipated Unified Permit Fee			\$ 679,600
Public Hearing Fee		1% of Unified Permit Fee	\$ 6,796
Total Anticipated Unified Permit Fee and Public Hearing Fee			\$ 686,396
Initial Permit Fee			\$ 86,692
Sitework & Utility Permit Fee + Unified Permit Hearing Fee			
Anticipated Balance of Unified Permit Fee To be paid at the time of Building Permit			\$ 599,704

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Attachments

Attachment A: Project Graphics

- Environmental Constraints Map
- FEMA Map

Attachment B: Certified List of Abutters and Abutters Map

Attachment C: Stormwater Report*

Attachment D: Soils Management Plan*

Attachment E: Geotechnical Summary Memorandum/Slope Stability Analysis*

Attachment F: Traffic Impact and Access Study

Attachment G: Checklist - Industrial Performance Standards

Attachment H: Noise Study

Attachment I: Water Resource Protection Memorandum

Attachment J: Construction Logistics Plan

Attachment K: Embodied Carbon Checklist

Attachment L: LEED v.4 Green Rating System Project Checklist

Attachment M: Landscape Maintenance Memo

* - Bound Separately

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A. Project Description and Development Team

Commonwealth Fusion Systems (CFS) has grown its' presence at Devens to more than 700 employees and is now advancing the second phase of development of its' corporate campus at 111-125 Hospital Road in Devens, MA. The initial development phase - nearly complete - involved construction of the first two buildings, CFS-1 and CFS-2, on the central landscaped quad, and installation of underground utility and roadway infrastructure. CFS-1, completed in Q1 of 2023 presently houses CFS's corporate offices with R&D and manufacturing space while CFS-2 contains the demonstration tokamak fusion machine that is under assembly and expected to be operational by the end of the year.

The second phase of the campus similarly consists of two new building sites designated CFS-3 and CFS-4.

- CFS-3 - **the subject of this Unified Permit application**- will contain office, R&D and manufacturing space. Just as Commonwealth Fusion Systems partnered with King Street Properties to develop and own the CFS-1 manufacturing facility recently acquired by Pivotal Manufacturing, CFS has partnered with Pivotal Manufacturing Partners to develop and own the CFS-3 building, within which CFS will initially manufacture the super conductor magnets to be used in ARC, the world's first commercial application of electric energy producing fusion energy to be constructed in Virginia. The CFS-3 site will include site amenities for employees and visitors, a 600-space parking garage structure and 57 new surface parking spaces.
- CFS-4 (Level 2 Unified Permit application under review) will be a highly specialized facility to conduct heat transfer experiments and research.

The campus property has also grown. Commonwealth Fusion Systems exercised an option to acquire the 13-acre Oak Street parcel at 105 Hospital Road and recently merged the land into the CFS-owned property at 111 Hospital Road while concurrently creating a new 14.1-ac parcel (125 Hospital Road) for Pivotal.

Design and construction of the CFS-3 and CFS-4 building sites are on independent schedules and are being permitted separately under different applicants, but again – similar to Phase 1, both building sites will share access, utilities and amenities to function together within the framework of the CFS unified campus masterplan. Reciprocal easements will be created and or modified between all property owners, i.e. CFS and Pivotal.

Development Team

Applicant	Pivotal Manufacturing Partners 125 Hospital Road Devens MA Contact: Joe Imperato (Owner's Rep) Phone: 617-653-6781
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Development Consultant	Leggatt McAll Properties LLC 10 Post Office Square Boston MA 02109 Contact: Mike Gerhardt Phone: 617-422-7072
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Lead Architect	Vivo Architecture 123 N Washington Street Boston, MA 02114 Contact: Matthew O'Brien Phone: 617-227-7727
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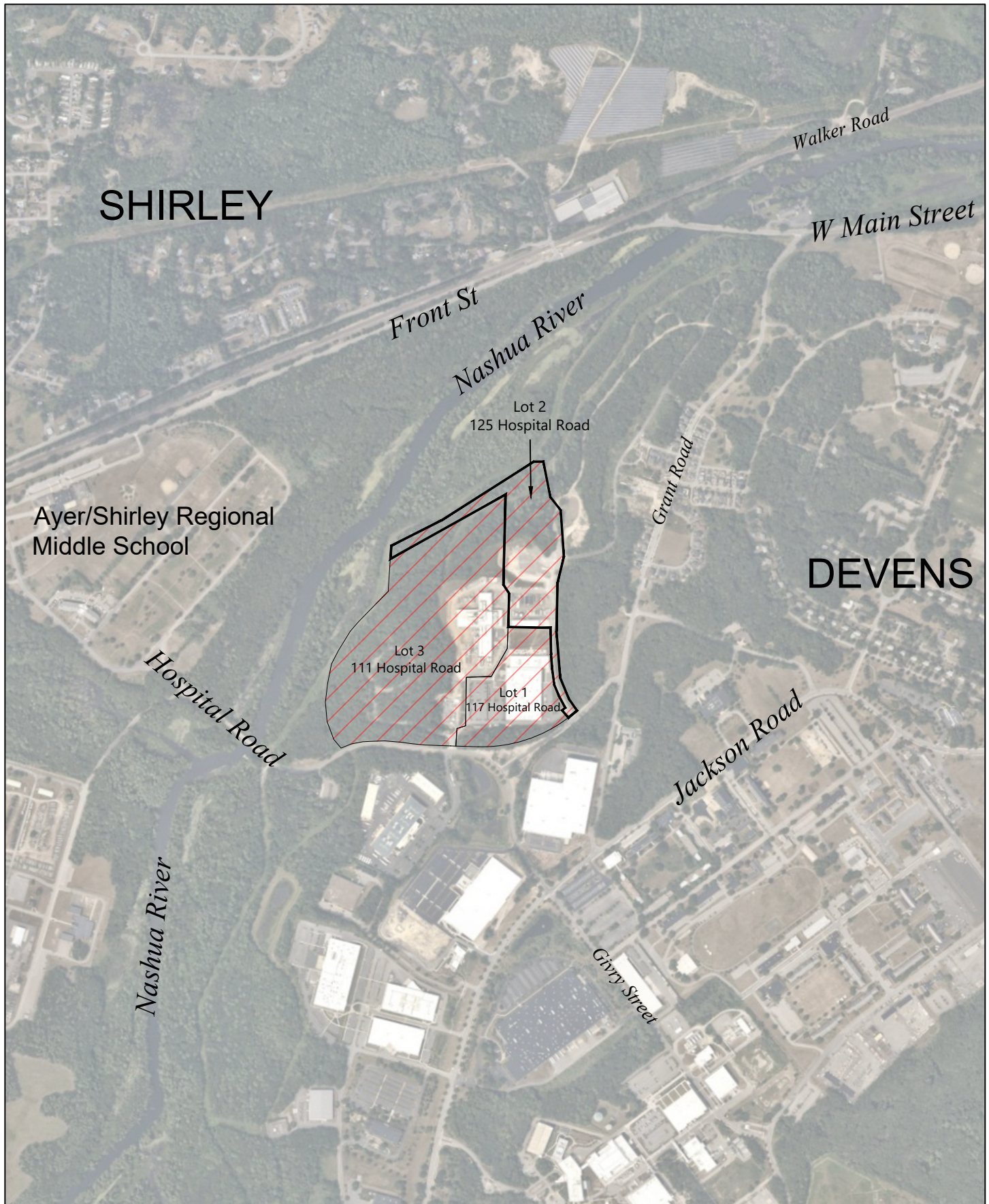
Landscape Architecture and Site Lighting	HDR 1800 American Blvd., Suite 100 Pennington, NJ 08534 Contact: Anthony Cortese Phone: 609.844.1212
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Civil Engineering, Survey, Transportation	VHB 1 Cedar Street, Suite 400 Providence, RI 02903 Contact: Curtis Quitzau Phone: 617-607-2197
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Geotechnical Engineer	GZA Geo Environmental, Inc. 249 Vanderbilt Avenue Norwood, MA 02062 Contact: Mike Ostrowski Phone: 781.278.5887
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Development Team (continued)

Noise/Vibration Consultant	Cavanaugh Tocci 327 F Boston Post Road Sudbury, MA 01776 Contact: Gregory C. Tocci Phone: (978)-639-4102
Environmental Engineer	Boston Environmental Corporation 203 Spark Street Brockton, MA 02302 Contact: Michael Toomey Phone: 508-897-8062
General Contractor	Evans General Contractors 4509 Creedmore Road, Suite 401 Raleigh, NC 27612 Contact: Matt Heriot Phone: 919-265-5090



Project Location



0 500 1000 2000 Feet



Commonwealth Fusion Systems
Campus Building 3 Locus Map
125 Hospital Road
Devens, MA

Figure 1

B. Administrative, Processing, and Peer Review Fee

The administrative, processing and peer review fees will be paid by the Applicant directly to the Devens Enterprise Commission (the "DEC") in accordance with an agreed upon fee schedule. A preliminary construction cost estimate and calculation of the Level 2 Permit filing fee is attached to the Level 2 Permit Application form.

C. Project Plans

A full set of site drawings of the Project are provided as part of this Unified Permit Application. A drawing list has been incorporated on the cover sheet of the site drawings.

D. List of Abutters

As required, the following list of abutters for the property located at 125 Hospital Road (Map/Lot 018.0-0007-0200.0) was generated by the Devens Community Property Viewer GIS on October 14, 2025, Certification Pending. Refer to **Attachment B – 300 feet Abutters List Report and Abutter Map**.

United States of America/Oxbow
Department of the Interior
Fish & Wildlife Service, Federal
Parcel Federal Parcel 1C
Sudbury, MA 01776

MDFA
99 High Street, 11th Floor
Boston, MA 02110

MDFA/Stormwater
99 High Street, 11th Floor
Boston, MA 02110

MDFA/Vacant
99 High Street, 11th Floor
Boston, MA 02110

MDFA/Vacant
99 High Street, 11th Floor
Boston, MA 02110

MDFA
99 High Street, 11th Floor
Boston, MA 02110

MDFA/Hospital Rd Sub Station
99 High Street, 11th Floor
Boston, MA 02110

Stage Realty LLC
500 Clark Road
Tewksbury, MA 01876

MDFA/Vacant
99 High Street, 11th Floor
Boston, MA 02110

MDFA/Open Space Area
99 High Street, 11th Floor
Boston, MA 02110

MDFA
99 High Street, 11th Floor
Boston, MA 02110

MDFA/Vacant
99 High Street, 11th Floor
Boston, MA 02110

United States of America
Department of the Interior
Fish & Wildlife Service, Federal Parcel 1
73 Weir Hill Road
Sudbury, MA 01776

Pivotal Devens 117 LLC
231 Royal Palm Way
Palm Beach, FL 33480575

Mack, Devens Development11, LLC
Attn: Treasury Dept
330 SMC Drive
Somerset, WI 54025

Commonwealth Fusion Systems LLC
148 Sidney Street
Cambridge MA 02139

E. Drainage Calculations

A Stormwater Report, including drainage calculations, for the Project may be found in **Attachment C – Stormwater Report**.

F. Notice of Intent

Not Applicable. In September 2020, a wetland site reconnaissance of the entire property was performed by TRC Environmental Corp. prior to the land acquisition by CFS. TRC did not identify any state or federally jurisdictional wetlands or waterbodies within the overall project site. TRC did identify the banks of the Nashua River and associated wetlands offsite to the west. The 100-foot buffer and 200-foot riverfront area associated with these features do not extend onto the property and are well outside the limit of work for this project. Wetland resources as well as other nearby environmental resources identified near the campus property can be found on the Site Constraints Map (original from 2020) and the FEMA Map in **Attachment A – Project Graphics**.

G. Existing Easements, Covenants, Restrictions and Institutional Controls

The 125 Hospital Road property is encumbered by utility and access easements that include:

1. A 50' wide utility easement centered on the 69 KVA overhead power lines that runs north/south from Hospital Road to the electric substation parcel and continues northward crossing along the northern property line.
2. Various electric, gas, drain and water and sewer easements to ensure utility access for utility providers and to the separate ownership parcels on the CFS campus.

The property is also subject to the April 2021 Former Oak and Maple Hill Housing Areas and a Portion of the Former Grant Housing Area Final Land Use Control Implementation Plan (LUCIP) Addendum intended to protect the public from exposure to unexploded ordinance (UXO) and munitions that may be present on the property primarily through strict controls on soils. The Amended LUCIP allows unrestricted soils transfer between all of the parcels that comprise the CFS campus property.

Additionally, the current boundary of the Oak and Maple LUCIP is coincident with a draft Activity and Use Limitation (AUL) associated with pesticides that may be encountered in the top 5-feet of soil. Soils must be characterized/tested and handled in accordance with an approved plan prepared by a Massachusetts Licensed Site Professional (LSP) prior to excavation and transport.

Soils transport within project areas for both the CFS-3 and CFS-4 projects will be coordinated within a single soils management plan applicable to both project teams.

Refer to Attachment D - Soils Management Plan for additional information.

H. Soil Suitability Tests and Analysis

An extensive amount of soil borings and test pits have been conducted across both the CFS-3 and CFS-4 project sites to inform the design team on the conditions of the soils. Boring and test pit data conducted by geotechnical engineers GZA for stormwater management design concerns are contained in the Stormwater Report (Attachment C) and a memo summarizing the geotechnical engineering scope of work is provided in Attachment E. Preparation of the final Geotechnical Report is on-going and a copy will be provided upon completion, if requested. The report will document the soils testing data and geotechnical considerations and design recommendations for foundations and site design for both the CFS-3 and CFS-4 sites. Additionally, GZA's report contains a slope stability analysis to address concerns associated with construction within buffers of Slope Resource Areas (SRA).

I. List of Waivers

The Project Team has endeavored to comply with all requirements contained within the Devens Rules and Regulations, both administrative and regulatory, and we have identified conditions unique to this project that require relief from the regulations. Therefore, pursuant to 974 CMR 1.03(4)(e), the Applicant requests waivers of requirements and design standards listed in Table I-1.

Table I-1 List of Waivers

Requirement Citation	Requirement Description	Waiver Request
1.09 1.	Permit Duration: Commencement of an Approved Site Plan within six months; Commencement of a Building Permit within six months, and; Completion in two years.	Request to commence construction within 18 months and substantial completion within three years.
3.02.3.(b)6.a	Existing and proposed landscape features such as street trees, fences, walls, planting areas, wooded areas, and walks. Scattered trees to be preserved shall also be shown as well as all "specimen trees" (trees exceeding a minimum caliper of 12") within 100' of existing or proposed lot lines have been identified and indicated on the plan.	Request to waive trees requirement. The project cannot be adjusted to preserve trees within the limits of disturbance shown on the site plans.

J. Variances

The Project does not require any variance from the By-Laws.

K. Compliance with the Reuse Plan and Bylaws

The following section describes the Project's compliance with the goals and objectives of the Devens Reuse Plan and Bylaws, as applicable.

Compliance with the Devens Reuse Plan

The 1994 Devens Reuse Plan (the "Reuse Plan") provides a blueprint for future redevelopment of the former Fort Devens Military Reservation located within the towns of Harvard, Ayer and Shirley.¹ The Reuse Plan outlines general goals and objectives to guide planning and reuse of the former Army base. The Reuse Plan also describes the goals and objectives of each zoning district, including the Innovation and Business Technology zone in which the Project is located. Development at Devens has grown to be increasingly more sustainable, thus reducing overall environmental impacts of development and producing region-wide environmental benefits. As described below, the Project is consistent with

¹ *Devens Reuse Plan*, Prepared for the Boards of Selectmen for the Towns of Ayer, Harvard, Lancaster and Shirley and the Massachusetts Government Land Bank, prepared by Vanasse Hangen Brustlin, Inc., November 14, 1994.

numerous goals and objectives of the Reuse Plan and supports the mission of sustainable development at Devens.

Overall Goals and Objectives

The Project is consistent with the following overall goals and objectives contained within the Reuse Plan:

Development must be sustainable, which means achieving a balance of economic, social and environmental needs, while maintaining and enhancing the natural resource base.

- › The Project has been designed to satisfy the Industrial Performance Standards and to be compliant with the Devens Rules and Regulations, which are crafted to attain these stated goals. Additionally, the Project contains numerous sustainable measures as discussed in the "Sustainability" section below as well as in Section S of this Application; and most importantly, the purpose of the project is to advance the development of safe, limitless, clean energy to combat climate change.

Take advantage of the skills and experience of the regional work force and match the skills of the future work force with the needs of industries of the future.

- › The project requires employees of various skill levels for the design, construction, operation and maintenance of the campus. Workforce from the local communities will also be an asset for this project.

Build on Devens' unique characteristics to complement the regional economy and expand the economic base.

- › Commonwealth Fusion Systems has grown to 1,200 employees with more than 700 employees stationed at the Devens campus. New employees have and will inevitably settle into the surrounding communities, buy homes, raise families and shop locally.

Goals and Objectives by Zoning Districts

The Reuse Plan lists the goals and objectives for each zoning district within Devens to help guide appropriate development. The entire Site is located entirely within the Innovation and Technology Business zoning district. Additionally, the Site is also overlain with the Water Resources Protection (WRP) Aquifer Overlay District. Compliance with the applicable zoning and overlay districts is discussed further in the sections below.

Innovation and Technology Business District

The Project is consistent with the following goals and objectives specific to the Innovation and Technology Business Zone outlined in the Reuse Plan:

Provide space to those industries and businesses that develop and require on-site expansion.

- › Commonwealth Fusion Systems is a start-up company founded in 2018 and selected Devens to construct its corporate campus. The first development phase is nearing completion, and the CFS-3 project is the second of two recent applications to expand the campus.

Provide space to accommodate industries and businesses that want to relocate to Devens or have large or difficult siting requirements.

- › CFS exercised an option to purchase the 13-ac Oak Street parcel in 2024 and merged it into the 111 Hospital Road parcel resulting in an overall campus of 57-acres. CFS concurrently created the 14-acre 125 Hospital Road site for development of the CFS-3 office/R&D/manufacturing building.

Encourage uses that exhibit one or more of the following qualities: development or sale of a new product or service, expanding business, education/academic links, research and development oriented, or support service to other industries/businesses on Devens.

- › Commonwealth Fusion Systems is expanding its business operations toward achieving commercial applications of fusion energy generation by partnering with academia worldwide (MIT locally) and by expanding their manufacturing and R&D capabilities.

Water Resources Protection Overlay District

The Watershed and Aquifer sub-districts of the Water Resource Protection Overlay District bisect the CFS campus and the CFS-3 parcel lies entirely in the Aquifer sub-district. The Facility is consistent with the following goals and objectives outlined in the Reuse Plan and Section 4.09 of the Rules and Regulations. Compliance is provided in Section R of this document.

To promote the health, safety, and general welfare of the community by ensuring the appropriate level of protection for all water resources within Devens in recognition of the importance of this resource to the region.

- › The stormwater management system is designed to meet or exceed all DEP and Devens requirements. Additionally, the CFS/Pivotal team will prepare and implement applicable and appropriate plans for short term and long-term erosion and sedimentation control, and for spill prevention and containment.

To preserve the high quality of surface and ground water in the aquifer underlying the Devens area (the "Aquifer") in order to ensure its future use.

- › All stormwater runoff from impervious areas will be collected and treated prior to infiltration. There will be no discharges to surface water resources. See Attachment C for the Stormwater Management Plan.
- › The Project contains sustainable site design and facility operation measures, including those designed to preserve the high quality of surface and ground water underlying the Devens area.
- › Pivotal will prepare and implement an appropriate Spill Prevention Control and Countermeasure (SPCC) plan for the building and site.

To conserve natural resources wherever possible.

- › Construction limits of disturbance have been minimized to the extent required to logistically construct the facility and retain excess soils on site.

To promote statewide goals for surface water quality in the Nashua River Basin.

- › The stormwater management system is designed to meet or exceed all DEP and Devens requirements for runoff control, water quality, groundwater recharge, and sedimentation control.

To prevent the temporary or permanent contamination of soils, surface water, and ground water on Devens.

- › During and after construction, the Facility will be consistent with the WRPZD and with all applicable federal, state and local regulations applying to water resources, including the Massachusetts Department of Environmental Protection (DEP) Stormwater Management Policy for development projects and to the maximum extent possible with the Devens Enterprise Commission Development Rules and Regulations. Specifically, the Facility will implement Best Management Practice (BMP) in stormwater management, implement erosion and sedimentation control, minimize water use, and limit the use of chemicals in landscaping and de-icing, among other design and operational actions. See Attachment C - Stormwater Report.
- › The Facility will comply with applicable general design, planning and operational requirements of the Water Resources Protection District pursuant to Section XI of the Zoning By-Laws and section 4.09 of the Industrial Performance Standards and General Regulations including:
 - Preparing and implementing a Spill Prevention Control and Countermeasure Plan in due course.
 - Identifying hazardous materials with volumes and storage conditions, as available at this stage of design.
 - Preparing and implementing a Groundwater Quality Monitoring Plan.
- › See Attachment D - Soils Management Plan and Attachment I - Water Resource Protection Overlay Districts Compliance Narrative for Compliance with Industrial Performance Standards.

Sustainability and Climate Change Mitigation

The first and most visible goal of the Reuse Plan states, "Development must be sustainable, which means achieving a balance of economic, social, and environmental needs, while maintaining and enhancing the natural resource base." Pivotal and CFS are committed to incorporating sustainable measures in balance with project costs to enhance the Project and offer benefits to Devens.

The project will be designed and constructed to achieve optimum energy performance while meeting the performance criteria of this facility. The project team will strive to incorporate the most relevant and economically feasible technologies to reduce energy consumption and/or cost.

The design and construction of the CFS-3 Building will contain aspects of sustainability interiorly and exteriorly that align with the Devens Reuse Plan and LEED v.4 goals, though Pivotal will not attempt to achieve LEED certification for CFS-3.

Landscape and Site Sustainability

The CFS-3 project embraces a low-impact, ecologically responsible approach to landscape management. Plant disease and insect issues will be addressed using Best Management Practices and Integrated Pest Management (IPM), respectively—both of which prioritize environmentally sensitive, targeted treatments over broad chemical applications. Weed control will rely primarily on cultural controls, such as hand removal, proper mowing, and debris management, which minimize the need for herbicides and reduce potential harm to nearby sensitive ecosystems. Chemical treatments will only be used as a last resort and will follow strict DEC guidelines.

A permanent irrigation system is not proposed throughout the site, reinforcing the project's commitment to water conservation. Instead, the landscape will feature native plant species that are well-adapted to the local climate and rainfall patterns, reducing the need for supplemental watering. Maintained lawn areas are limited to the central Campus Green, significantly reducing water use, mowing frequency, and chemical inputs. Elsewhere, meadow grasses and wetland seed mixes will be used to promote biodiversity and reduce maintenance demands.

Fertilization will be applied only as needed, based on annual soil testing for nutrient levels and pH. This targeted approach ensures healthy plant growth while avoiding unnecessary chemical use.

Although the project does not meet LEED's specific criteria for accessible open space, it still provides a generous 115,000 square feet of open area. This includes a central green and terraced plazas designed to encourage interaction with the natural environment and support both passive and active recreation. These spaces foster community engagement and promote physical and mental well-being.

To reduce the urban heat island effect, the majority of parking is consolidated within a vertical parking garage, minimizing the amount of asphalt surface area. This design choice not only reduces heat absorption but also preserves more green space on the site.

The project site is strategically located to be resilient against high-priority climate hazards. It is elevated well above the Nashua River floodplain, reducing flood risk, and is not vulnerable to sea level rise, hurricanes, or wildfires. The use of native plants and the absence of irrigation further enhance drought resilience. The site is also designed to withstand winter storms and other regional weather events.

Exterior lighting for the project complies with standards for uplight, light trespass, and illuminated signage, minimizing light pollution and preserving nighttime visibility for both people and wildlife.

Architectural Sustainability

VIVO has been creating spaces where humanity thrives with sustainability at its core for over 40 years. VIVO's solutions are research based and focused on sustainability. Utilizing their

experience and the Devens Embodied Carbon Guidelines as a tool, VIVO and the design team will focus on products and materials that reduce embodied carbon, such as lightweight concrete, insulation, refrigerants, wood, engineered wood, gypsum board, carpet, resilient flooring, acoustic walls and ceiling systems. High albedo roofing will be utilized for CFS-3 to further reduce the heat island effect. The project will comply with the Commonwealth of Massachusetts Stretch Energy Code.

HVAC and Building Systems

The HVAC equipment will be designed with sustainability as a key priority. All-Electric Air-Source Heat Pumps (ASHP's) will be the primary source of heating and cooling for the building, in place of traditional fossil fuel burning equipment. ASHP's are designed with low global warming potential refrigerants (low-GWP) and are CFC free, resulting in a much more climate friendly alternative to traditional refrigerants. ASHP's will be capable of heat recovery for simultaneous heating & cooling operation, resulting in increased unit efficiency, over traditional air-source heating or cooling equipment. Processed cooling loads will be met utilizing "free cooling" (utilizing ambient outdoor air instead of compressors to cool) in the winter months for additional energy efficiency. All fans within the air-side equipment, including air handling units, energy recovery units, exhaust fans, and fan coil units, will be provided with VFD's for increased energy efficiency at part-load. Energy recovery units will be provided with total energy recovery wheels to reclaim sensible and latent heat from the building prior to exhausting it. All ventilation equipment will be provided with 100% airside economizer for "free cooling" during shoulder seasons. A direct digital control building automation system will be provided and include building scheduling, occupancy sensors, monitoring, trending, and precise programming to optimize the performance and efficiency of all the above equipment and total building energy performance.

L. Construction Phasing

No construction phasing is proposed. The Project will be permitted and constructed independently of the CFS-4 project, however the development and land design of these projects are closely unified. Construction of CFS-4 is scheduled to begin in late 2025, independent of the construction start date of CFS-3 slated to start construction in early 2027. Agreements are in place between Commonwealth Fusion Systems and Pivotal that allow CFS unrestricted use of the Pivotal parcel during construction of CFS-4 including access, laydown, employee parking, soils extraction and stockpiling until the time Pivotal begins construction of CFS-3. The Oak Street parcel may serve as an overflow contractor laydown space and contractor parking as may be needed by both construction teams.

A collaborative Construction Logistics Plan prepared by the General Contractors for the two concurrent projects is provided in Attachment J. Phase 1 represents the first year of CFS-4 construction when CFS will utilize the Pivotal property. Phase 2 is when both construction sites are active and the CFS-4 team must vacate the Pivotal property.

M. Compliance with the Devens Open Space and Recreation Plan and Devens Main Post Trails Report

This section demonstrates how the Project complies with the Devens Open Space and Recreation Plan as well as the Devens Post Trails Report.

Compliance with the Devens Open Space and Recreation Plan

The current *Devens Open Space and Recreation Plan: 2008-2013* prepared by the Nashua River Watershed Association, Montachusett Regional Planning Commission, and the Massachusetts Development Finance Agency in January 2008 builds off of previous versions of open space plans and provides a guide for the preservation of critical environmental resources and management of open space and recreational resources at Devens (the "Open Space Plan").² As part of the current Open Space Plan update, lands at Devens to be placed under permanent protection by adoption of conservation restrictions, transfer of ownership, or some other means that would provide permanent protection consistent with that of Article 97 were identified and are listed in Table 4-1 of the Open Space Plan. The project site has been rezoned since that time and thus the Open Space Plan has been revised. The 'C-6' 100-foot Buffer to Residential Area has been revised to follow the eastern property line (as shown on the site plans) and no longer crosses through the CFS campus.

Although partially reforested the Project will be located predominately in previously disturbed land (see Figure 1). The Project Site does not contain any existing significant environmental resources listed in the Open Space Plan (e.g., rare, threatened, and endangered species). Furthermore, the Project Site does not contain any active or passive recreation area, or any other amenity included in the Open Space Plan. Refer to the Site Constraints Map in Attachment A – Project Graphics.

Compliance with the Devens Multi-Use Trail Network Plan

Previous versions of the Open Space Plan included provisions for the Devens Multi-Use Trail Network (the "Multi-Use Trail"), which identifies connections between existing and proposed trail networks and sidewalks throughout Devens linked to surrounding communities. The Multi-Use Trail, as depicted on the 2010 Devens Trail Map, is an updated version of the 2001 Devens Main Post Trail study. The Multi-Use Trail includes three phases, none of which are currently within or proposed within the Master Site Plan boundary or would be impacted by the project.

² Nashua River Watershed Association, Montachusett Regional Planning Commission, and the Massachusetts Development Finance Agency, *Devens Open Space and Recreation Plan: 2008-2013*, January 23, 2008.

N. Parking

CFS has experienced significant growth, surpassing initial employment projections made during the campus' permitting phase. As of August 2025, CFS employs over 1,000 people, with approximately 700 located in Devens. To address their parking needs, CFS has adopted several strategies including using internal roadways on the Oak Street parcel for parking, leasing off-site parking spaces with a shuttle service connecting the campus to these locations, and coordinating shuttle services between Devens and Cambridge. Additionally, they are sharing temporary contractor parking. To accommodate this unexpected workforce expansion/parking requirement, the CFS-3 building program includes construction of a 600-space parking garage in addition to 57 surface parking spaces near the main entrance of the CFS-3 building for visitor parking, mobility impaired and courtesy EV charging. Upon completion of construction the campus will have 970 parking spaces at the following locations:

<u>Parcel</u>	<u>Building</u>	<u>Surface Spaces</u>	<u>Garage Spaces</u>
111 Hospital Rd	CFS-2	25	--
111 Hospital Rd	CFS-4	--	--
117 Hospital Rd	CFS-1	288	--
125 Hospital Rd	CFS-3	<u>57</u>	<u>600</u>
	Totals	370 sp	600 sp

CFS anticipates potential growth of 100-150 additional employees to be stationed at Devens over the course of the next 3-5 years for which the parking supply will be right-sized.

O. Vehicle Trip Generation

Most of the employees who will be working in CFS-3 (and CFS-4) are presently stationed within CFS-1. This is a notable contributor to the current parking supply shortfalls on the site, which are exacerbated by vendor and visitor traffic. Construction of CFS-3 will include construction of a 600-space garage that will enable a re-organization of CFS's office space needs, provide necessary flexibility in the use of R&D and manufacturing areas, and provide much needed parking supply across the campus.

Given the rapid growth of employee and external visitor traffic to the site, the Traffic Impact and Access Study for build-out of the CFS campus originally prepared during permitting of the initial development phase of the campus in 2022 was re-visited and updated to account for current and future traffic conditions with construction of both the CFS-3 and CFS-4 building projects. The study focuses on project generated traffic impacts at the following intersections:

- › Jackson Road at Patton Road / Lake George Street – *signalized*

- › Jackson Road at Givry Street – *unsignalized*
- › Jackson Road at Pine Road – *unsignalized*
- › Hospital Road at Westerly Site Driveway / NE Studios Driveway – *unsignalized*
- › Hospital Road at Givry Street – *unsignalized*
 - Hospital Road at Givry Street (west)
 - Givry Street Split
 - Hospital Road at Givry Street (east)
- › Hospital Road at Easterly Site Driveway – *unsignalized*
- › Grant Road at Hospital Road – *unsignalized*
- › Grant Road at Pine Road – *unsignalized*
- › Front Street at Hospital Road – *unsignalized*

The traffic study is a stand-alone document submitted with this application as Attachment F. The study concludes traffic growth from buildout of the CFS campus will have minimal impacts to traffic operations at the intersections.

P. Erosion and Sedimentation Plan

A Soil and Erosion Control Plan for the Project may be found in the Site Plans. The Project will disturb greater than 1-acre land and will therefore require preparation of a Stormwater Pollution Prevention Plan (SWPPP) and filing a Notice of Intent (NOI) with the United States Environmental Protection Agency (EPA) for coverage under EPA's Construction General Permit (CGP) to discharge stormwater from construction sites. The contractor and Owner are required to file the NOI at least 14 calendar days prior to commencing earth-disturbing activities.

As the person overseeing the day-to-day construction activities, the Contractor will be responsible for preparing and implementing the SWPPP; adapting it as conditions of the project construction schedule and phasing program in whatever way necessary to meet the requirements and intent of the EPA Construction General Permit.

Q. Landscaping Maintenance and Water Management Plan

The project includes proposed landscape planting and hardscape amenities that are detailed in the Site Plans. In alignment with Devens' sustainability goals, irrigation will be limited and native plants will be used to reduce water demand. The proposed irrigation system will incorporate weather sensors and soil moisture sensors to further conserve water. Minimal lawn areas will be serviced with spray heads, and efficient drip irrigation will be installed in planting beds.

To ensure a uniform appearance and the successful completion of the central campus green, irrigation will be implemented in this area. The existing irrigation system from the CFS-1 parcel will be extended north to cover the CFS-3 portion of the central campus green. Initial

plant establishment will utilize water from the Devens water system to meet limited water needs.

See Attachment M - Landscape Maintenance Plan memorandum

R. Compliance with Industrial Performance Standards

The Applicant provides the following information demonstrating anticipated compliance with the applicable Industrial Performance Standards and findings regarding potential impacts related to noise, air quality, lighting, electromagnetic interference, wetlands, earth removal, stormwater management, water resource protection, and greenhouse gas (GHG) emissions. The potential sensitive receptors near the project site have been identified as the residential properties off Grant Road to the east, and New England Studios to the south. A completed Industrial Performance Standards checklist for the project is provided in Attachment G – Industrial Performance Standards Checklist.

Air Quality, Odor and Emissions

CFS does not expect any odors or dust emissions when the system is operational. This building will not require a MassDEP Air Quality Permit at this stage of design.

During construction, the project will implement measures required in 974 CMR 4.07(7) and thus will minimize air quality impacts during earth removal. These measures can be found in the Soil Erosion and Sediment Control Plan. During construction, the contractor will take measures to minimize fugitive dust generation and will implement additional measures during construction on an as needed basis.

Electromagnetic Interference

The Project will not create electromagnetic interference (EMI) to any internal or external sensitive receptor.

Lighting/Illumination

A site lighting and photometrics plan is provided in the Sites Plans submitted with this Unified Level 2 Application. The light fixtures proposed for CFS-3 are the same family of light fixtures constructed and proposed throughout the CFS campus for unity and consistency.

Noise and Vibration

At the current stage of design, the project is expected to meet the noise standards set forth in 974 CMR 4.05 (3)b. Pivotal and At the current stage of design, the project is expected to meet the noise standards set forth in 974 CMR 4.05 (3)b. CFS have commissioned a comprehensive noise study by Cavanaugh Tocci to establish existing ambient noise levels at the sensitive receptor locations and to construct an acoustic model to predict noise levels and measure effectiveness of mitigation measures. The 3D computer modeling program will account for

existing and proposed topography and all noise generating equipment associated with the project.

After consultation with the Commission's peer review consultant, it was agreed that background noise will be measured at a proxy location for the residential receptors due to temporary roadway and traffic conditions that would result in lower than typical ambient noise levels. Once the background noise levels are determined and the effect of new noise is evaluated, appropriate and specific mitigation options, if necessary, will be identified, evaluated, and integrated into the project. Mitigation measures would likely include further optimization of equipment locations, selection of quieter equipment, and noise screens near the noise source(s). Construction of perimeter walls or berms for noise reduction is not anticipated.

Cavanaugh Tocci has conducted a study of environmental sound produced by mechanical equipment serving the CFS-3 building currently being designed. The study reviews applicable limits on facility sound and developed sound mitigation concepts as may be required for compliance with MassDEP Noise Policy and the DEC IPS noise limits. The proposed strategies have been proposed to limit sound impacts, including the construction of a penthouse to enclose most building mechanical equipment, the placement of intake and exhaust louvers on the west and south sides of the penthouse to reduce exposure to residences to the north and east, the application of sound attenuators and/or duct lining to the ductwork between mechanical equipment and louvers, and the placement of air-source heat pumps at grade on the west side of the building.

With respect to vibration concerns, the Project will comply with 974 CMR 4.05 (4)(a). The Applicant's project program requirements are more restrictive than the DEC regulations relative to allowable vibrations. The Acoustic Analysis is provided in Attachment H.

Wetland Protection

There are no wetland resources on or abutting the property.

Earth Removal

The Project will comply with the Earth Removal standards in 974 CMR 4.07. The project will generate significant volumes of cuts and fills and has been designed in parallel with CFS-3 so that there is no export of materials and import is minimized. Logistically, the challenge on this site (as well as the CFS-4 site) is the topsoil quantity of which there is an excess of up to 20,000 cu yds. Topsoil that had been stockpiled on Beech St will be displaced, as well as, topsoil generated by CFS-1 and CFS-2 construction which was previously placed in the ravine and now has to be relocated along with topsoil generated from the wooded areas of the CFS-3 and CFS-4 sites. Pivotal and CFS have identified the area immediately west of CFS-2 as the primary topsoil stockpile area, and the Oak Street parcel as the secondary topsoil stockpile area, if needed.

Applicant is proposing a strategy to optimize the use of on-site soils by requesting a grading easement from MassDevelopment and obtaining formal permission from the US Army Corps of Engineers (USACE) and the Massachusetts Department of Environmental Protection

(MADEP) to extend grading beyond the northeastern property boundary. The site plans indicate the proposed grading limits which, if approved, would allow for a seamless transition between the new grades along the eastern driveway and the existing grades at the property line. Benefits of this strategy include eliminating the need for site walls, reducing the volume of topsoil storage, enhancing the vegetative screening between the development and the open space buffer adjacent to residential properties to the northeast, and improving access to public utilities along the property line. While MassDevelopment supports this approach, formal requests for approval from USACE and MADEP have not yet been submitted. Permissions are necessary because the eastern property line aligns with an Activity and Use Limitation (AUL) boundary and soils within the AUL boundary must remain as specified in the Final Land Use Control Implementation Plan (LUCIP) Addenda for the Former Oak and Maple Housing Areas and part of the Former Grant Housing Area. The applicant will need to import soils or construct site walls to achieve the desired grade transition if any of these stakeholders deny the request.

The soils management plan can be found in Attachment D - Soils Management Plan.

Stormwater Management

The stormwater management practices for the Project have been designed to comply with the General Provisions of 974 CMR 4.08 (Stormwater Management) and the Massachusetts DEP Stormwater Management Standards. The proposed design efficiently captures, treats, and recharges stormwater runoff in a manner that replicates or improves upon existing conditions. Refer to Attachment C – Stormwater Report (under separate cover due to document size) for the full report and analysis.

Pursuant to 974 CMR 3.04; Design Standards, pre-development drainage areas were analyzed as a “green field” condition regardless of any pre-existing development. As a result, there was a negligible allowance for post-development stormwater discharge, so the proposed stormwater management system is designed to capture and recharge 100% of all runoff for design storms up to and including the 100-year storm. This conservative approach guarantees there will be no negative impact from stormwater runoff on abutting properties or water supplies. All stormwater BMPs were designed using the Natural Resource Conservation Service TR-20 methodology in accordance with General Provision 4(e). The complete results of this analysis can be found in Appendix B of the Stormwater Report.

Water quality is provided by implementing stormwater best management practices. Pretreatment targets are met pursuant to Devens regulations, which include achieving 80% total suspended solid (TSS) removal prior to discharge to the subsurface infiltration chambers in accordance with General Provision 6(h)(exceeding the 44% TSS removal required by MassDEP standards). Water quality and TSS removal calculations are located in Appendix D of the Stormwater Report.

The closed drainage system is designed to comply with General Provision 6(b), which requires the accommodation of the 25-year storm event within the system. Pipe conveyance calculations and pipe network profiles are located in Appendix A of the Stormwater Report.

Operations and maintenance procedures are located in Appendix D of the Stormwater Report and have been written to meet or exceed the maintenance recommendations and cleaning frequencies as described in General Provision 7.

Water Resource Protection

The Property lies within the Watershed and Aquifer Overlay Districts as defined within the Water Resource Protection Overlay Districts. The outlined purpose of this regulation is to protect the ground and surface water resources in Devens and abutting communities, promote statewide goals for surface water quality in the Nashua River Basin, and to prevent the temporary or permanent contamination of soils, surface water and ground water. The entirety of the CFS-3 project site lies within the Aquifer WRPD.

The Project will comply with the Watershed and Aquifer WRPD regulations 947 CMR 4.09 as noted in Attachment I – Water Resource Protection Compliance Narrative. Requirements include various water conservation measures, storage and use of deicing materials, pesticide use restrictions, spill prevention and hazardous material plans.

Greenhouse Gas Mitigation

Commonwealth Fusion System's corporate mission is to develop the first clean net positive energy source that will combat climate change by reducing the world's dependence on carbon generating power plants that rely on fossil fuels. The CFS-3 manufacturing and office space is a key step in that direction. This building will manufacture and export magnets to be used in commercial fusion energy generation. While development requires a significant amount of energy initially, the success of CFS's efforts will ultimately result in a significant reduction in global greenhouse gas emissions.

The project is consistent with the goals and requirements outlined in the 974 CMR 4.11, as noted below.

Commonwealth Fusion Systems is a member of the Devens Eco-Efficiency Center.

- › This standard promotes additional actions that a business can take to reduce contributions to global warming, such as documenting and reducing overall emissions associated with a business' activities. Buildings will be designed to meet the MA Stretch Energy Code, as applicable, which reduces greenhouse gas emissions by including various building elements to reduce the required energy needs for the operation of the buildings. Some of these elements may include:
 - Low window to wall ratio (below code maximum)
 - Above-code wall insulations
 - Low-flow fixtures
 - High efficiency LED lighting
 - Daylighting controls and occupancy sensors

All Level 2 Permits shall review the Embodied Carbon Reduction Guidelines and complete the Embodied Carbon Checklist for Devens Projects.

The Embodied Carbon Reduction Checklist is provided in Attachment K – Embodied Carbon Checklist

Projects that require a MassDEP Air Quality Permit shall have a roof for which at least thirty (30) percent shall be vegetated, which vegetated portion shall comply with the DEC's Policy for Construction of Vegetated Roofs, dated August 2011, as amended.

- › CFS-3 will meet the air quality standards in 974 CMR 4.02(3) and therefore will not require a MassDEP Air Quality Permit at this stage of design and development. Should a MassDEP Air Quality Permit need to be submitted in the future as development progresses, the necessary and appropriate measures will be taken to file this permit per MassDEP and Devens requirements.
- › This project is not a Title V source nor a PSD source. As stated in Attachment G – Industrial Performance Checklist, this site will not have visible emissions, dust emissions, or odor emissions. Monitoring is proposed to demonstrate Compliance.

S. LEED Checklist – Sustainable Sites

The Project proposes construction of a manufacturing building including site and utility infrastructure improvements and is evaluated with respect to the Location and Transportation, Sustainable Sites, and Water Efficiency sections of the U.S Green Building Council – LEED Version 4 Green Building Rating System Project Checklist. The Project scope is assessed for qualification of specific LEED points based upon the objectives summarized in the LEED LT, SS, and WE design recommendations. The Project has the potential to achieve **10 LEED points** and possibly achieve an additional **9 LEED points** out of a total maximum of 38 points.

See Attachment L - USGBC – LEED Version 4 Green Rating System Project Checklist.

T. Building Elevations and Building Design Review

Building elevations and axonometric views of the CFS-3 building and parking garage are provided for context as reference drawings with the Site Plans. The building colors and fenestration matches or compliments those of the other buildings to unify the campus and provide intuitive wayfinding to the primary building entrances.

U. Slope Resource Areas

Slope resource areas (SRA) exist on the site to the north and northwest of the development footprint. The slope areas were delineated based upon accurate topographic survey and reviewed formally with the DEC in September 2020. The DEC issued an SRA Determination memorandum dated September 30, 2020 and the established resource limits are shown on the Site Plans included in this application package.

The proposed limit of work is for the most part outside the protective buffers of the SRA, but limited grading is required between the 15' No Disturb and 50' Buffer zones in association

with a site driveway needed for circulation and fire safety access. A site wall will be constructed to minimize grading disturbance impacts.

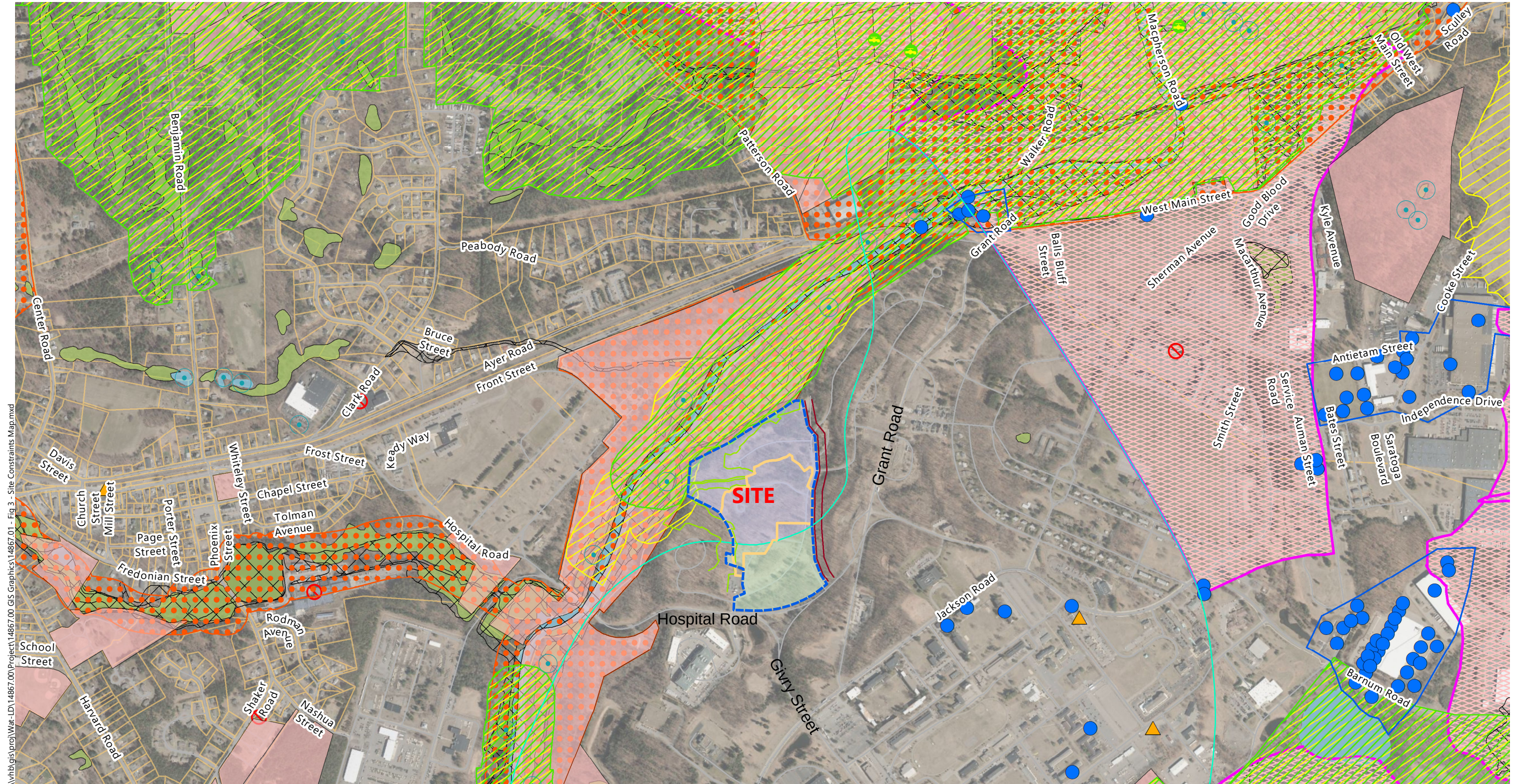
Applicant has engaged GZA, the project team's geotechnical engineer, to conduct an analysis to assess slope stability and determine if any soils stabilization mitigation is required.

The Slope Stability Analysis is provided in Attachment J.

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Attachment A: Project Graphics

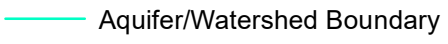
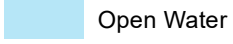
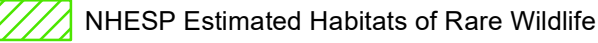
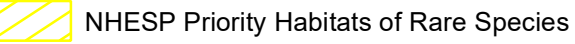
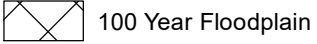
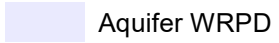
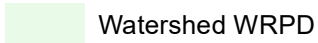
- › Environmental Constraints Map taken from CFS-1 and CFS-2 Unified Permit Applications
- › FEMA Map

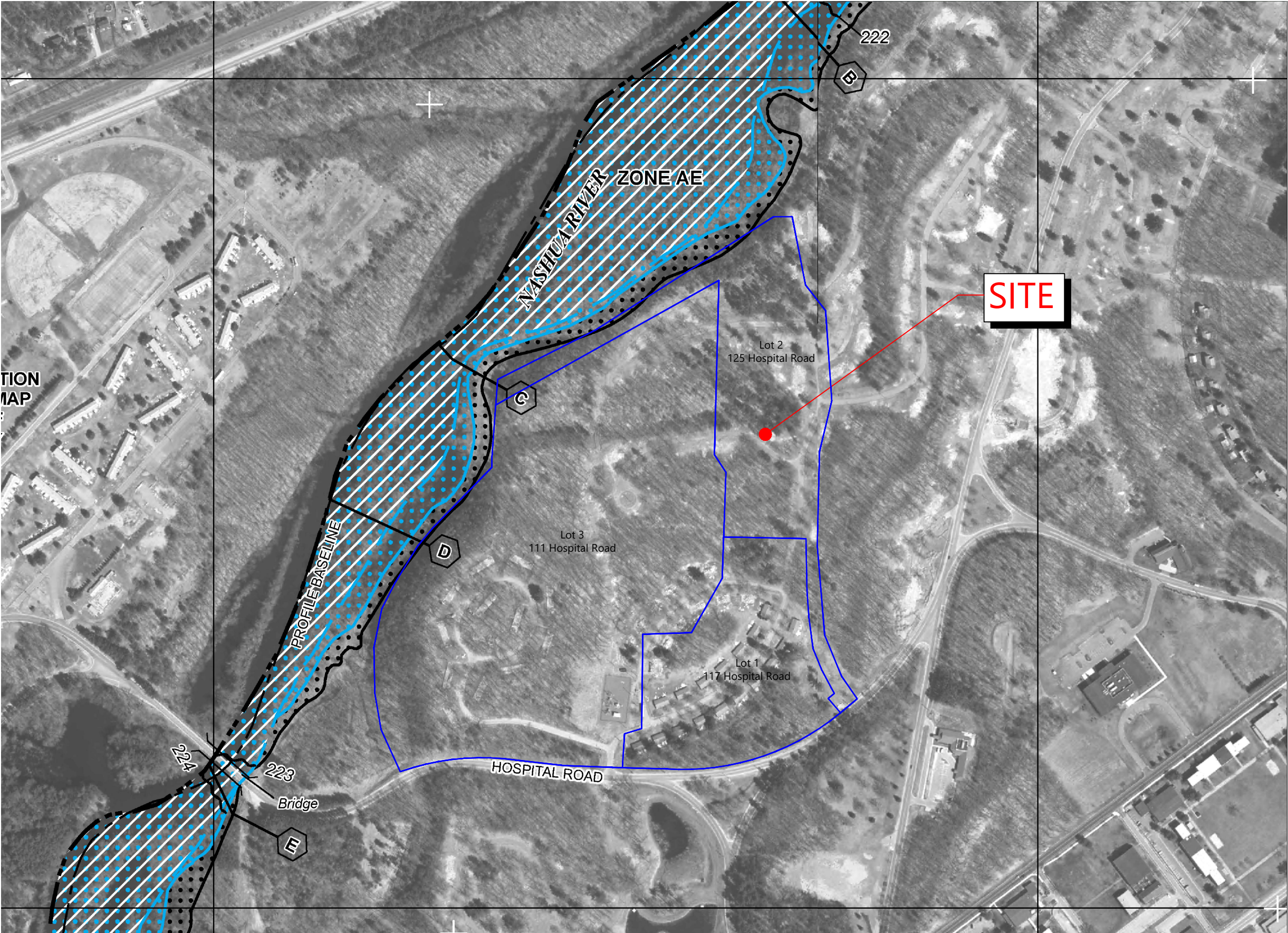


\\vhb\gis\proj\Wat-LD\14867.00\Project\14867.00 GIS Graphics\14867.01 - Fig 3 - Site Constraints Map.mxd



Data Source: Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, MassIT.

- | | | | | |
|---|--|---|---|--|
|  Property Line |  Aquifer/Watershed Boundary |  NHESP Potential Vernal Pools |  AUL |  Open Water |
|  Limit of Work |  100' Residential Open Space Buffer |  NHESP Estimated Habitats of Rare Wildlife |  Underground Storage Tanks |  Parcels |
|  Slope Resource Area |  Community Groundwater Source |  NHESP Priority Habitats of Rare Species |  100 Year Floodplain | |
|  Aquifer WRPD |  MHC Inventoried Area |  Protected and Recreational Open Space |  Zone II Wellhead Protection Areas | |
|  Watershed WRPD |  MHC Inventoried Property |  ACECs |  DEP Wetlands | |



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS
ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS
ZONE X Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% Annual Chance Floodplain Boundary
	0.2% Annual Chance Floodplain Boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
	Base Flood Elevation line and value; elevation in feet*
	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

	Cross section line
	Transect line
	Culvert
	Bridge
	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
	1000-meter ticks: Massachusetts State Plane, Mainland Zone (FIPS Zone 2001), Lambert Conformal Conic projection
	1000-meter Universal Transverse Mercator grid values, zone 19N
	Bench mark (see explanation in Notes to Users section of this FIRM panel)
	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
July 4, 2011

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

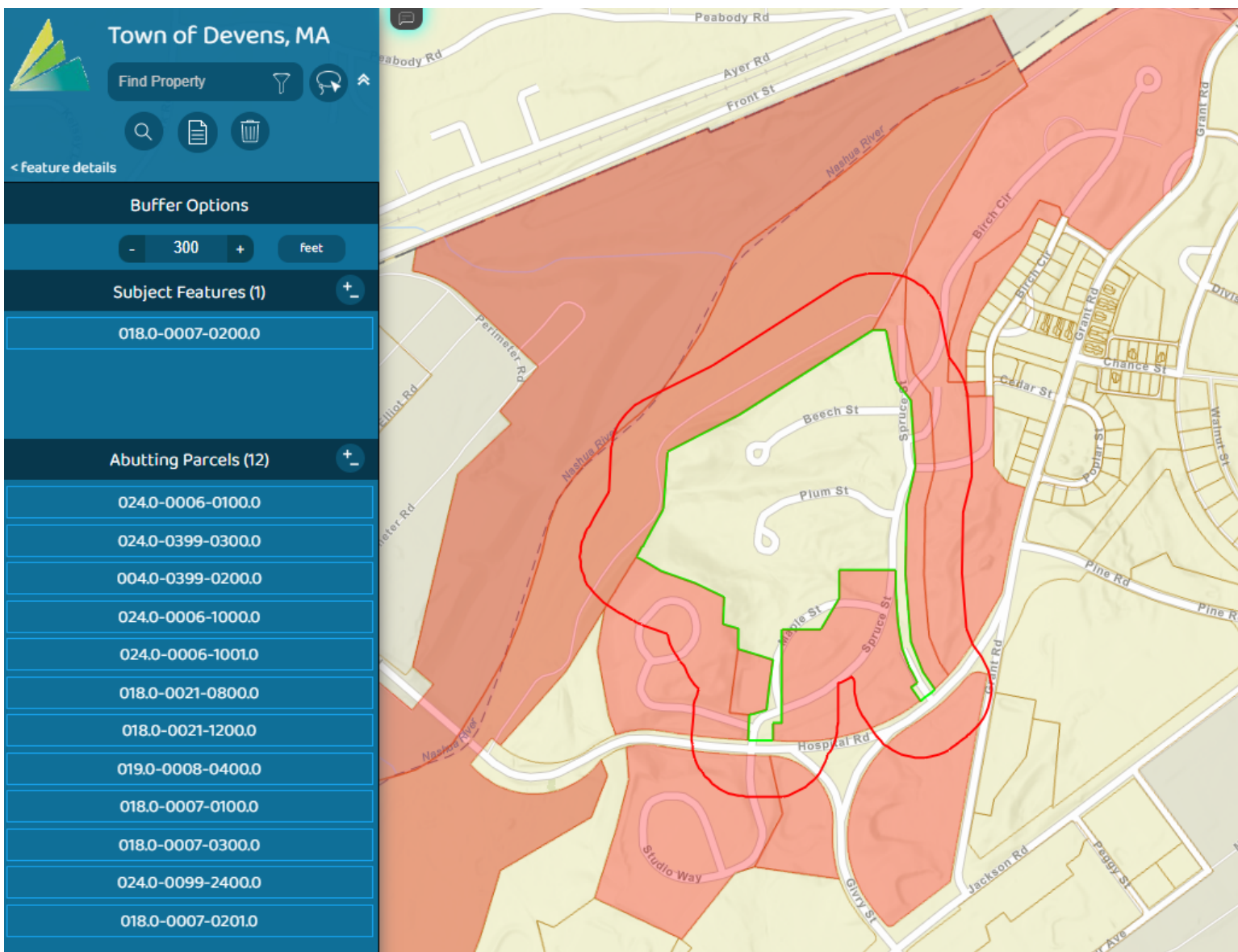
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.



FEMA Map
Commonwealth Fusion Systems Campus
Building 3
125 Hospital Road, Devens, MA

Figure 5
October 2025

Attachment B: Certified List of Abutters and Abutters Map





300 feet Abutters List Report

Devens, MA
October 14, 2025

Subject Property:

Parcel Number: 018.0-0007-0200.0
CAMA Number: 018.0-0007-0200.0
Property Address: 111 HOSPITAL ROAD

Mailing Address: COMMONWEALTH FUSION SYSTEMS, LLC
148 SIDNEY STREET
CAMBRIDGE, MA 02139

Abutters:

Parcel Number: 004.0-0399-0200.0
CAMA Number: 004.0-0399-0200.0
Property Address: 78 HOSPITAL ROAD

Mailing Address: UNITED STATES OF AMERICA / OXBOW
DEPARTMENT OF INTERIOR
FISH & WILDLIFE SERVICE, FEDERAL
PARCEL FEDERAL P
SUDBURY, MA 01776

Parcel Number: 018.0-0007-0100.0
CAMA Number: 018.0-0007-0100.0
Property Address: 109 HOSPITAL ROAD

Mailing Address: MDFA / HOSPITAL RD SUB STATION
99 HIGH STREET 11TH FLOOR
BOSTON, MA 02110

Parcel Number: 018.0-0007-0201.0
CAMA Number: 018.0-0007-0201.0
Property Address: 117 HOSPITAL ROAD

Mailing Address: KING 117 HOSPITAL LLC
575 UNIVERSITY AVE
NORWOOD, MA 02062

Parcel Number: 018.0-0007-0300.0
CAMA Number: 018.0-0007-0300.0
Property Address: 105 HOSPITAL ROAD

Mailing Address: COMMONWEALTH FUSION SYSTEMS, LLC
148 SIDNEY STREET
CAMBRIDGE, MA 02139

Parcel Number: 018.0-0021-0800.0
CAMA Number: 018.0-0021-0800.0
Property Address: 122 HOSPITAL ROAD

Mailing Address: STAGE REALTY LLC
500 CLARK ROAD
TEWKSBURY, MA 01876

Parcel Number: 018.0-0021-1200.0
CAMA Number: 018.0-0021-1200.0
Property Address: 124 HOSPITAL ROAD

Mailing Address: MDFA / STORMWATER
99 HIGH STREET 11TH FLOOR
BOSTON, MA 02110

Parcel Number: 019.0-0008-0400.0
CAMA Number: 019.0-0008-0400.0
Property Address: 11 GRANT ROAD

Mailing Address: MACK, DEVENS DEVELOPMENT 11, LLC
ATTN: TREASURY DEPARTMENT
330 SMC DRIVE
SOMERSET, WI 54025

Parcel Number: 024.0-0006-0100.0
CAMA Number: 024.0-0006-0100.0
Property Address: 59 GRANT ROAD

Mailing Address: MDFA/VACANT
99 HIGH STREET 11TH FLOOR
BOSTON, MA 02110

Parcel Number: 024.0-0006-1000.0
CAMA Number: 024.0-0006-1000.0
Property Address: 69 GODDARD STREET

Mailing Address: MDFA
99 HIGH STREET 11TH FLOOR
BOSTON, MA 02110

Parcel Number: 024.0-0006-1001.0
CAMA Number: 024.0-0006-1001.0
Property Address: 43 GODDARD STREET

Mailing Address: MDFA
99 HIGH STREET 11TH FLOOR
BOSTON, MA 02110



www.cai-tech.com

10/14/2025

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Page 1 of 2



300 feet Abutters List Report

Devens, MA
October 14, 2025

Parcel Number: 024.0-0099-2400.0
CAMA Number: 024.0-0099-2400.0
Property Address: 161 HOSPITAL ROAD

Mailing Address: MDFA/VACANT
99 HIGH STREET 11TH FLOOR
BOSTON, MA 02110

Parcel Number: 024.0-0399-0300.0
CAMA Number: 024.0-0399-0300.0
Property Address: 67 HOSPITAL ROAD

Mailing Address: UNITED STATES OF AMERICA
DEPARTMENT OF INTERIOR
FISH & WILDLIFE SERVICE, FEDERAL
PARCEL 1 73 WEIR H
SUDBURY, MA 01776



www.cai-tech.com

10/14/2025

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Page 2 of 2

Attachment C: Stormwater Report

Bound under separate cover

Attachment D: Soils Management Plan

Bound under separate cover

Attachment E: Geotechnical Summary Memorandum and Slope Stability Analysis

Bound under separate cover

Attachment F: Traffic Impact and Access Study

Commonwealth Fusion Systems Buildings 3 & 4

Devens, Massachusetts

PREPARED FOR

Commonwealth Fusion Systems
111 Hospital Road
Devens, MA 01434

Pivotal Manufacturing Partners
125 Hospital Road
Devens, MA 01434

PREPARED BY



260 Arsenal Place #2
Watertown, MA 02471
617.924.1770

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Executive Summary

Vanasse Hangen Brustlin, Inc. (VHB) has evaluated the potential traffic impacts associated with the buildout of the Commonwealth Fusion Systems (CFS) campus located at 111 Hospital Road in Devens, Massachusetts. CFS has been developing and expanding their corporate campus to pioneer the world's first commercial fusion energy systems. In 2022, CFS completed construction of the campus' first building, CFS-1, which is a 162,000 square foot building containing 68,000 square feet of office space and 94,000 square feet of manufacturing space where CFS produces their high temperature superconducting magnets. The second building on the CFS campus, CFS-2, is a 147,000 square foot research and development (R&D) facility that contains all of their SPARC operations. SPARC is a type of device called a tokamak; a donut shaped machine composed of strong magnets that is proven to be the most viable way to recreate the sun's power on earth. As of August 2025, CFS-2 is still under construction and is expected to be completed with SPARC operational by 2027.

CFS-3 and CFS-4 are the next two buildings proposed on the CFS campus and are the subject of this traffic impact and access study (TIAS). Since its conception in 2018, CFS has seen tremendous growth in both workforce and manufacturing capabilities. Because many manufacturing processes and materials are not supplied commercially, CFS is developing and manufacturing their magnets and other necessary components in-house, and adequate space for these operations is necessary. To keep up with a growing manufacturing demand and to streamline processes, CFS – in partnership with Pivotal Manufacturing – is planning to develop CFS-3, a 293,000 square foot building that will house 90,000 square feet of office space and 203,000 square feet of R&D and manufacturing space.

CFS-4 is the fourth building proposed on the CFS campus, which will be a 45,000 square foot facility, whose sole purpose is to function as a research and development system for studying the science of heat transfer. This facility is designed without any office space, manufacturing capabilities, or areas for permanent occupancy. The permitting and initial groundbreaking on CFS-4 will slightly ahead of CFS-3, however these two buildings are independent of one another and will be permitted as such. For the purposes of this TIAS, and because CFS-4 will not generate new employees to the campus, both buildings have been assumed to be completed together to assess potential traffic impacts.

Primary access to the campus is provided via a driveway located across from the NE Studios driveway on Hospital Road. A secondary access driveway is located on Hospital Road east of Givry Street. Access to CFS-3 and CFS-4 will be provided by these two existing driveways.

Based on previous evaluations conducted for the Site and standards used in the development of typical traffic impact and access evaluations, the following intersections were included in this assessment:

- › Jackson Road at Patton Road / Lake George Street – *signalized*
- › Jackson Road at Givry Street – *unsignalized*
- › Jackson Road at Pine Road – *unsignalized*
- › Hospital Road at Westerly Site Driveway / NE Studios Driveway – *unsignalized*
- › Hospital Road at Givry Street – *unsignalized*
 - Hospital Road at Givry Street (west)
 - Givry Street Split
 - Hospital Road at Givry Street (east)
- › Hospital Road at Easterly Site Driveway – *unsignalized*
- › Grant Road at Hospital Road – *unsignalized*
- › Grant Road at Pine Road – *unsignalized*
- › Front Street at Hospital Road – *unsignalized*

Turning movement counts (TMCs) to collect peak hour data were conducted at each of the study-area intersections on Wednesday, December 4, 2024 from 7:00 AM to 9:00 AM and from 3:30 PM to 6:00 PM. Concurrent with the 2024 TMCs, 24-hour automatic traffic recorder (ATR) counts were conducted at three locations, Hospital Road, east of Givry Street, Spruce Street, north of hospital Road, and Hospital Lane, north of Hospital Road. It should be noted that the traffic counts were conducted prior to the reconfiguration of the Hospital Road/Givry Street intersection. The new geometry for this intersection is reflected in the 2032 No Build and Build conditions.

The Project is expected to generate a total of 450 new vehicle trips (225 entering/225 exiting) on a daily basis. The Project is expected to generate a total of 36 new vehicle trips (27 entering/9 exiting) during the weekday morning peak hour and 44 new vehicle trips (15 entering/29 exiting) during the weekday evening peak hour.

Capacity analyses were conducted for each of the study area intersections under 2025 Existing conditions, 2032 No-Build conditions (without the proposed redevelopment), and 2032 Build conditions (with the proposed redevelopment). Based on the results of these analyses and the anticipated site-generated traffic, the proponent will implement the following measures:

- › Transportation Demand Management Program
- › Traffic Monitoring Program

Overall, VHB concludes that the Project will have minimal impacts to traffic operations at the study area intersections.



1

Introduction

This traffic study documents the findings of the traffic evaluation conducted for the project including an assessment of existing conditions, projection of future traffic volumes without and with the proposed development, analysis of impacts of the proposed development and recommendations for improving existing capacity deficiencies as well as to offset project related traffic impacts.

Project Description

CFS has been developing and expanding their corporate campus to pioneer the world's first commercial fusion energy systems. In 2022, CFS completed construction of the campus' first building, CFS-1, which is a 162,000 square foot building containing 68,000 square feet of office space and 94,000 square feet of manufacturing space where CFS produces their high temperature superconducting magnets. The second building on the CFS campus, CFS-2, is a 147,000 square foot research and development (R&D) facility that contains all off their SPARC operations. SPARC is a type of device called a tokamak; a donut shaped machine composed of strong magnets that is proven to be the most viable way to recreate the sun's power on earth. As of August 2025, CFS-2 is still under construction and is expected to be completed with SPARC operational by 2027.

CFS-3 and CFS-4 are the next two buildings proposed on the CFS campus and are the subject of this traffic impact and access study (TIAS). Since its conception in 2018, CFS has seen tremendous growth in both workforce and manufacturing capabilities. Because many manufacturing processes and materials are not supplied commercially, CFS is developing and

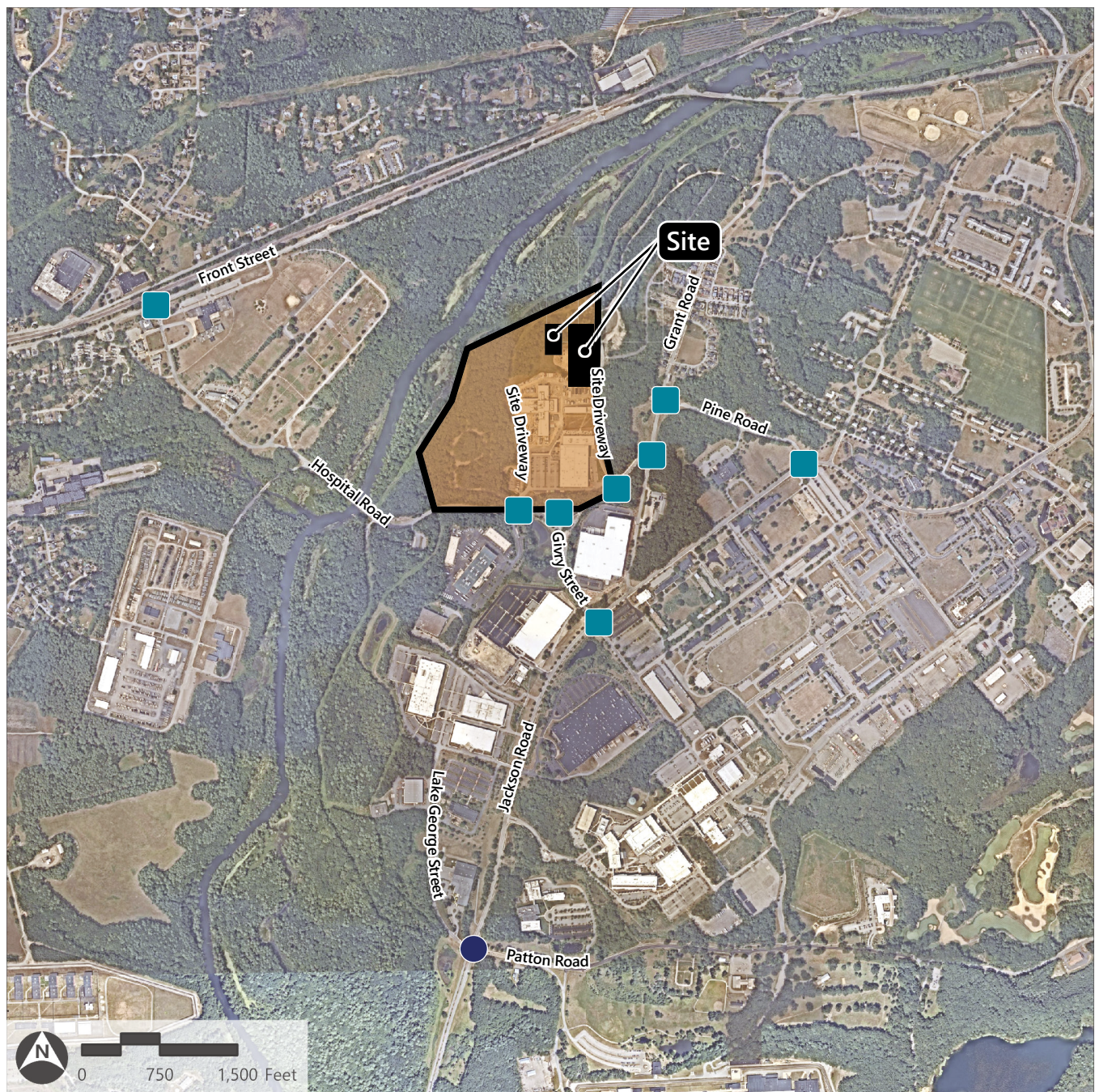
manufacturing their magnets and other necessary components in-house, and adequate space for these operations is necessary. To keep up with a growing manufacturing demand and to streamline processes, CFS – in partnership with Pivotal Manufacturing – is planning to develop CFS-3, a 293,000 square foot building that will house 90,000 square feet of office space and 203,000 square feet of R&D and manufacturing space.

CFS-4 is the fourth building proposed on the CFS campus, which will be a 45,000 square foot facility, whose sole purpose is to function as a research and development system for studying the science of heat transfer. This facility is designed without any office space, manufacturing capabilities, or areas for permanent occupancy. The permitting and initial groundbreaking on CFS-4 will slightly ahead of CFS-3, however these two buildings are independent of one another and will be permitted as such. For the purposes of this TIAS, and because CFS-4 will not generate new employees to the campus, both buildings have been assumed to be completed together to assess potential traffic impacts.

Primary access to the campus is provided via a driveway located across from the NE Studios driveway on Hospital Road. A secondary access driveway is located on Hospital Road east of Givry Street. Access to CFS-3 and CFS-4 will be provided by these two existing driveways.

Figure 1: Study Location Map

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Key

-  Study Area Signalized Intersection
-  Study Area Unsignalized Intersection

Study Methodology

This traffic assessment has been conducted in three stages. The first stage involved an assessment of existing traffic conditions within the project area including an inventory of existing roadway geometry; observations of traffic flow, including daily and peak period traffic counts; and a review of vehicular crash data.

The second stage of the study established the framework for evaluating the transportation impacts of the proposed project. Specific travel demand forecasts for the project were assessed along with future traffic demands on the study area roadways due to projected background traffic growth and other proposed area development that will occur, independent of the proposed development. The year 2032, a seven-year time horizon, was selected as the design year for analysis for the preparation of this traffic impact and access assessment to satisfy the Executive Office of Environmental Affairs (EEA) guidelines.

The third and final stage involved conducting traffic analyses to identify both existing and projected future roadway capacities and demands. This analysis was used as the basis for determining potential project impacts and potential mitigation measures.



2

Existing Conditions

Evaluation of the transportation impacts associated with the proposed project requires a thorough understanding of the existing transportation system in the project study area. Existing transportation conditions in the study area include roadway geometry, traffic controls, daily and peak period traffic flow, and vehicular crash information data. Each of these elements is described in detail below.

Study Area

Based on previous evaluations conducted for the Site and standards used in the development of typical traffic impact and access evaluations, the following intersections were included in this assessment:

- › Jackson Road at Patton Road / Lake George Street – *signalized*
- › Jackson Road at Givry Street – *unsignalized*
- › Jackson Road at Pine Road – *unsignalized*
- › Hospital Road at Westerly Site Driveway / NE Studios Driveway – *unsignalized*
- › Hospital Road at Givry Street – *unsignalized*
 - Hospital Road at Givry Street (west)
 - Givry Street Split
 - Hospital Road at Givry Street (east)
- › Hospital Road at Easterly Site Driveway – *unsignalized*
- › Grant Road at Hospital Road – *unsignalized*

- › Grant Road at Pine Road – *unsignalized*
- › Front Street at Hospital Road – *unsignalized*

The existing conditions evaluation consisted of an inventory of the traffic control; roadway, driveway, and intersection geometry in the study area; the collection of daily and peak period traffic volumes; and a review of recent vehicular crash history. It should be noted that the traffic counts were conducted prior to the reconfiguration of the Hospital Road/Givry Street intersection. The new geometry for this intersection is reflected in the 2032 No Build and Build conditions.

Roadway Geometry

Descriptions of the study area roadways and intersections are provided below, including descriptions of the existing lane configurations, traffic control at the study intersections, and the roadway jurisdiction in this area. Figure 2 shows the observed existing geometry and traffic control at each study area intersection.

Roadways

All roadways in the study area are classified as local roadways and are “unaccepted by city or town” according to the MassDOT Road Inventory. The speed limit in the study area is 35 mph unless otherwise posted.

Jackson Road

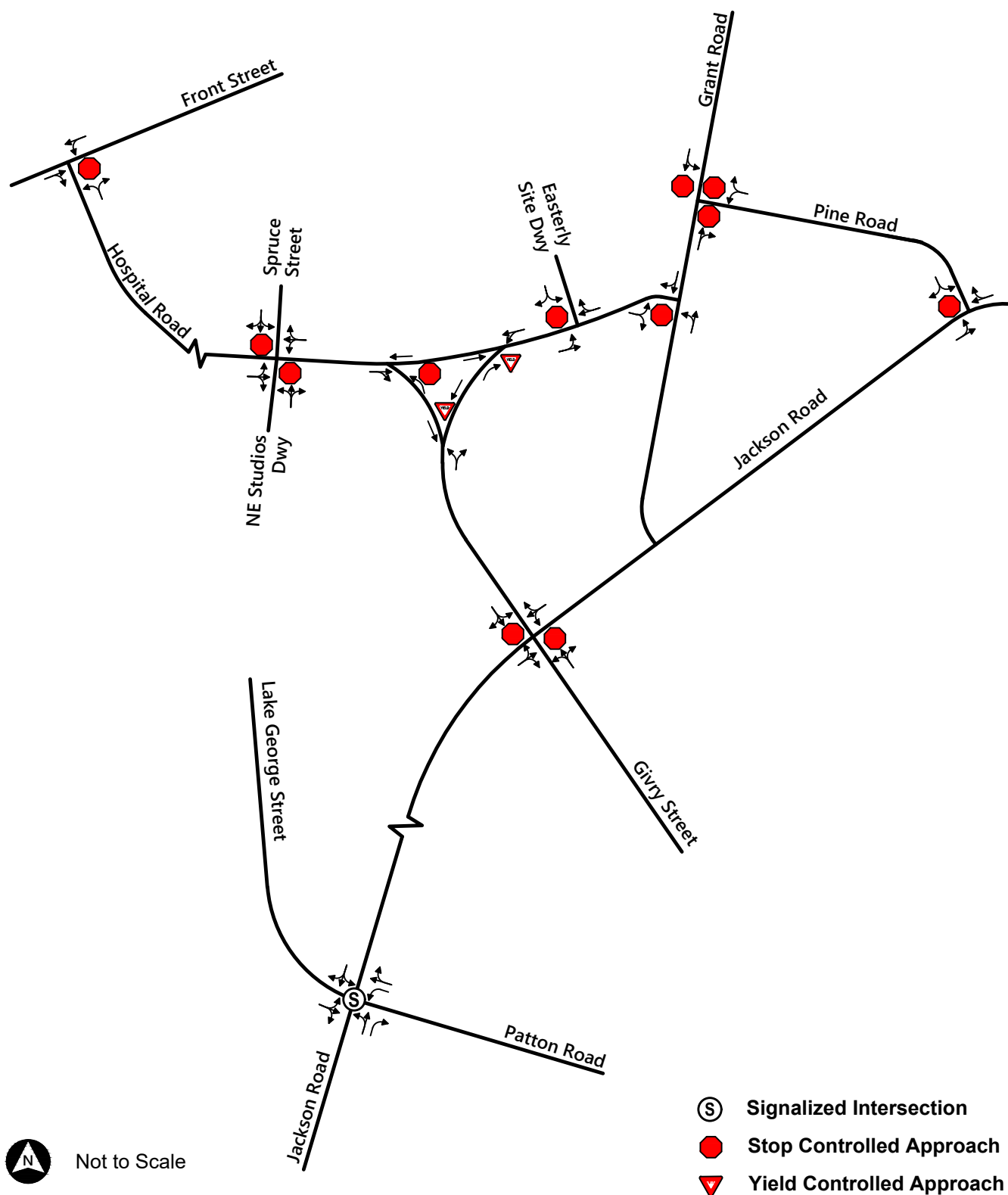
Jackson Road is a two-lane roadway (one lane per direction) and generally runs in a north-south direction connecting Devens to Route 2. Jackson Road provides two northbound lanes between Route 2 and Patton Road. Bike lanes are provided on both sides of the roadway north of Patton Road. The posted speed limit is 35 mph south of Givry Street and 30 mph north of Givry Street.

Hospital Road

Hospital Road is a two-lane roadway (one lane per direction) and generally runs in an east-west direction connecting Front Street to Grant Road. The posted speed limit is 35 mph, except for approximately 750 feet of roadway approaching Front Street, where the posted speed limit is 20 mph approaching the intersection, most likely due to Ayer Shirley Regional Middle School being located at that intersection.

Figure 2: Existing Lane Geometry and Traffic Control

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Note: At the time of the traffic counts, Givry Street at Hospital Road was still three separate intersections. Givry Street at Hospital Road has now been reconstructed as a three-legged, T intersection, which is reflected in the No-Build and Build conditions.

Intersections

The following sections describe the study-area intersections in detail.

Jackson Road at Patton Road / Lake George Street

Jackson Road generally runs in the north-south direction and is intersected by Lake George Street from the west and Patton Road from the east to form a four-legged signalized intersection. The Lake George Street eastbound approach consists of one all-purpose lane. The Patton Road westbound approach consists of an exclusive left-turn lane and a shared through/right-turn lane. The Jackson Road northbound approach consists of a shared left-turn/through lane and a channelized right-turn lane. The Patton Road southbound approach consists of one all-purpose lane. Pedestrian accommodations include sidewalks on the northbound side of Jackson Road north of the intersection, on the westbound side of Patton Road east of the intersection, and approximately 150 feet of sidewalk on the westbound side of Lake George Street connecting the commercial property to the intersection. Signalized crosswalks are provided across the southbound and westbound approaches and the northbound channelized right turn. Bicycle accommodations are not provided at this intersection, although bike lanes are provided on Jackson Road approximately 100 feet north of the intersection in the northbound direction and 500 feet north of the intersection in the southbound direction. Land use around the intersection is commercial or forested.

Jackson Road at Givry Street

Jackson Road runs in a northeast-southwest direction at this intersection and perpendicularly intersects with Givry Street to form a four-legged unsignalized intersection. The Givry Street approaches are under stop control and there is a four-way overhead flashing beacon above the intersection. All approaches consist of one all-purpose lane. In addition, the Jackson Road approaches include a bike lane. Pedestrian accommodations include sidewalks on the northeastbound side of Jackson Road and a crosswalk across the northwestbound approach. Land use around the intersection is commercial.

Jackson Road at Pine Road

Jackson Road runs in an east-west direction at this intersection and is intersected by Pine Road from the north to form a three-legged unsignalized intersection. The Pine Road southbound approach is under stop control. All approaches consist of one all-purpose lane. In addition, the Jackson Road approaches include a bike lane. Pedestrian accommodation includes a sidewalk on the eastbound side of Jackson Road. Land use around the intersection is commercial.

Hospital Road at Westerly Site Driveway / NE Studios Driveway

Hospital Road generally runs in an east-west direction and is intersected by the NE Studios driveway from the south and the westerly Site driveway from the north to form a four-legged unsignalized intersection. The northbound and southbound approaches are under stop control. All approaches consist of one all-purpose lane. Pedestrian accommodation

includes a crosswalk across the Southbound approach. Land use around the intersection is commercial.

Hospital Road at Givry Street (west)

Hospital Road generally runs in an east-west direction and is intersected by Givry Street from the southeast to form a three-legged unsignalized intersection. The Givry Street northwestbound approach is under stop control. The Hospital Road eastbound approach consists of one through/right-turn lane. The Hospital Road westbound approach consists of one through lane. The Givry Street northwestbound approach consists of one left-turn lane. No pedestrian or bicycle accommodations are provided at this intersection. Land use around the intersection is commercial.

Givry Street Split

Givry Street generally runs in a north-south direction. The Givry Street split occurs just south of Hospital Road and is a three-legged intersection with northwest, northeast, and south legs. The southwestbound approach is under yield control. All approaches consist of one all-purpose lane. No pedestrian or bicycle accommodations are provided at this intersection. Land around the intersection is forested.

Hospital Road at Givry Street (east)

Hospital Road generally runs in an east-west direction and is intersected by Givry Street from the southwest to form a three-legged unsignalized intersection. The Givry Street northeastbound approach is under yield control. The Hospital Road eastbound approach consists of one through lane. The Hospital Road westbound approach consists of one left-turn/through lane. The Givry Street northeastbound approach consists of one right-turn lane. No pedestrian or bicycle accommodations are provided at this intersection. Land around the intersection is forested.

Hospital Road at Easterly Site Driveway

Hospital Road generally runs in an east-west direction and is intersected by the easterly Site driveway from the north to form a three-legged unsignalized intersection. The Site driveway southbound approach is under stop control. All approaches consist of one all-purpose lane. Pedestrian accommodation includes a crosswalk across the southbound approach, as well as a sidewalk on the southbound side of the Site driveway and approximately 16ft of sidewalk on the westbound approach leading up to the crosswalk. No bicycle accommodations are provided at this intersection. Land use around the intersection is commercial or forested.

Grant Road at Hospital Road

Grant Road generally runs in a north-south direction and is intersected by Hospital Road from the west to form a three-legged unsignalized intersection. The Hospital Road eastbound approach is under stop control. All approaches consist of one all-purpose lane. No pedestrian accommodations are provided at this intersection. Bicycle accommodation includes bike lanes on the Grant Road approaches. Land around the intersection is forested.

Grant Road at Pine Road

Grant Road generally runs in a north-south direction and is intersected by Pine Road from the east to form a three-legged unsignalized intersection. All approaches are under stop control and consist of one all-purpose lane. No pedestrian or bicycle accommodations are provided at this intersection. Land around the intersection is residential or forested.

Front Street at Hospital Road

Front Street generally runs in an east-west direction and is intersected by Hospital Road from the south to form a three-legged unsignalized intersection. The Hospital Road northbound approach is under stop control. All approaches consist of one all-purpose lane. Pedestrian accommodations include a sidewalk on the southbound side of Hospital Road as well as a crosswalk across the northbound approach. There is also a shared use path on the eastbound side of Front Street. Land use around the intersection is commercial and institutional. Shirley town offices are located in the southwest corner of the intersection, while Ayer Shirley Regional Middle School is located in the southeast corner of the intersection.

Traffic Volume Data

Manual turning movement counts (TMCs) to collect peak hour data were conducted at each of the study-area intersections on Wednesday, December 4, 2024 from 7:00 AM to 9:00 AM and from 3:30 PM to 6:00 PM. The weekday morning and evening peak periods are consistent with typical peak commuter traffic periods for the Devens community. When compared with the expected traffic generation of the development, the combination of peak hour commuter traffic on the roadways and the ITE estimates for the development indicate that this is the critical analysis period for this study.

The weekday morning peak period occurred from 7:30 AM to 8:30 AM and the evening peak period occurred from 3:30 PM to 4:30 PM.

Concurrent with the 2024 TMCs, 24-hour automatic traffic recorder (ATR) counts were conducted at three locations, Hospital Road, east of Givry Street, Spruce Street, north of Hospital Road, and Hospital Lane, north of Hospital Road. A summary of the ATR traffic data is presented in Table 1.

All traffic count data is included in the Appendix.

Table 1 Existing Traffic Volumes

	Weekday	Weekday AM Peak Period			Weekday PM Peak Period		
	ADT ^a	Volume ^b	K ^c	Dir. Dist ^d	Volume ^b	K ^c	Dir. Dist ^d
Hospital Road, east of Givry Street	3,715	133	3.6%	83% EB	526	14.2%	86% WB
Spruce Street, north of Hospital Road	1,201	97	8.1%	77% NB	126	10.5%	87% SB
Hospital Lane, north of Hospital Road	860	121	14.1%	97% NB	72	8.4%	92% SB

a daily traffic expressed in vehicles per day

b peak period volumes expressed in vehicles per hour

c percent of daily traffic that occurs during the peak period

d directional distribution of peak period traffic

As shown in Table 1, Hospital Road, east of Givry Street, carries approximately 3,715 vehicles on a typical weekday with the morning and evening peak hours accounting for 3.6-percent and 14.2-percent respectively of the weekday daily traffic flow. Traffic flow along Hospital Road is heavier in the eastbound direction during the weekday morning peak period and heavier in the westbound direction during the weekday evening peak period.

Spruce Street, north of Hospital Road, carries approximately 1,201 vehicles on a typical weekday with the morning and evening peak hours accounting for 8.1-percent and 10.5-percent respectively of the weekday daily traffic flow. Traffic flow along Spruce Street is heavier in the northbound direction during the weekday morning peak period and heavier in the southbound direction during the weekday evening peak period.

Hospital Lane, north of Hospital Road, carries approximately 860 vehicles on a typical weekday with the morning and evening peak hours accounting for 14.1-percent and 8.4-percent respectively of the weekday daily traffic flow. Traffic flow along Hospital Lane is heavier in the northbound direction during the weekday morning peak period and heavier in the southbound direction during the weekday evening peak period.

Historic Growth

In the 2021 Devens Traffic Monitoring Program¹ report, the Montachusett Regional Planning Commission (MRPC) indicated that a 2% regional growth rate is warranted for the MRPC region. Therefore, a 2% growth rate was applied to the December 2024 traffic counts in order to grow them to the Existing Conditions year of 2025. The 2021 Devens Traffic Monitoring Program report growth information is included in the Appendix.

Seasonality of Count Data

Comparison of traffic count data with historic seasonal data available from MassDOT indicated that December traffic counts for local roadways are lower than the average annual

¹ 2020 Traffic Monitoring Program, Devens, Massachusetts, Prepared by VHB, December 2021.

month conditions. For a conservative analysis, a seasonal adjustment of 1.10 was applied to the December 2024 counts based on MassDOT data. The seasonal adjustment factors are included in the Appendix. Figures 3 and 4 reflect the 2025 Existing Weekday Morning and Evening peak hour traffic volumes, respectively.

Figure 3: 2025 Existing Conditions Weekday Morning Peak Hour Vehicle Volumes

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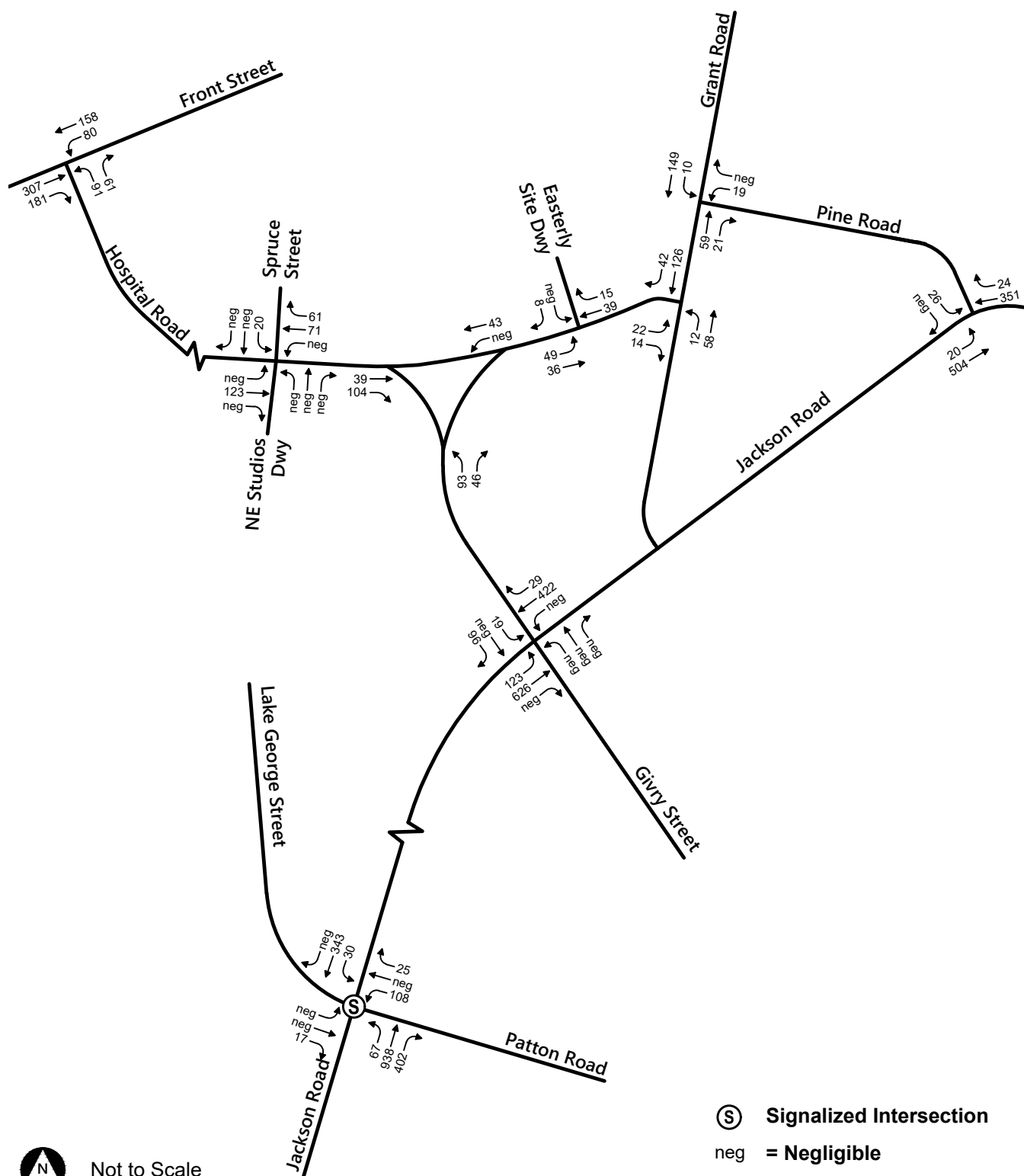
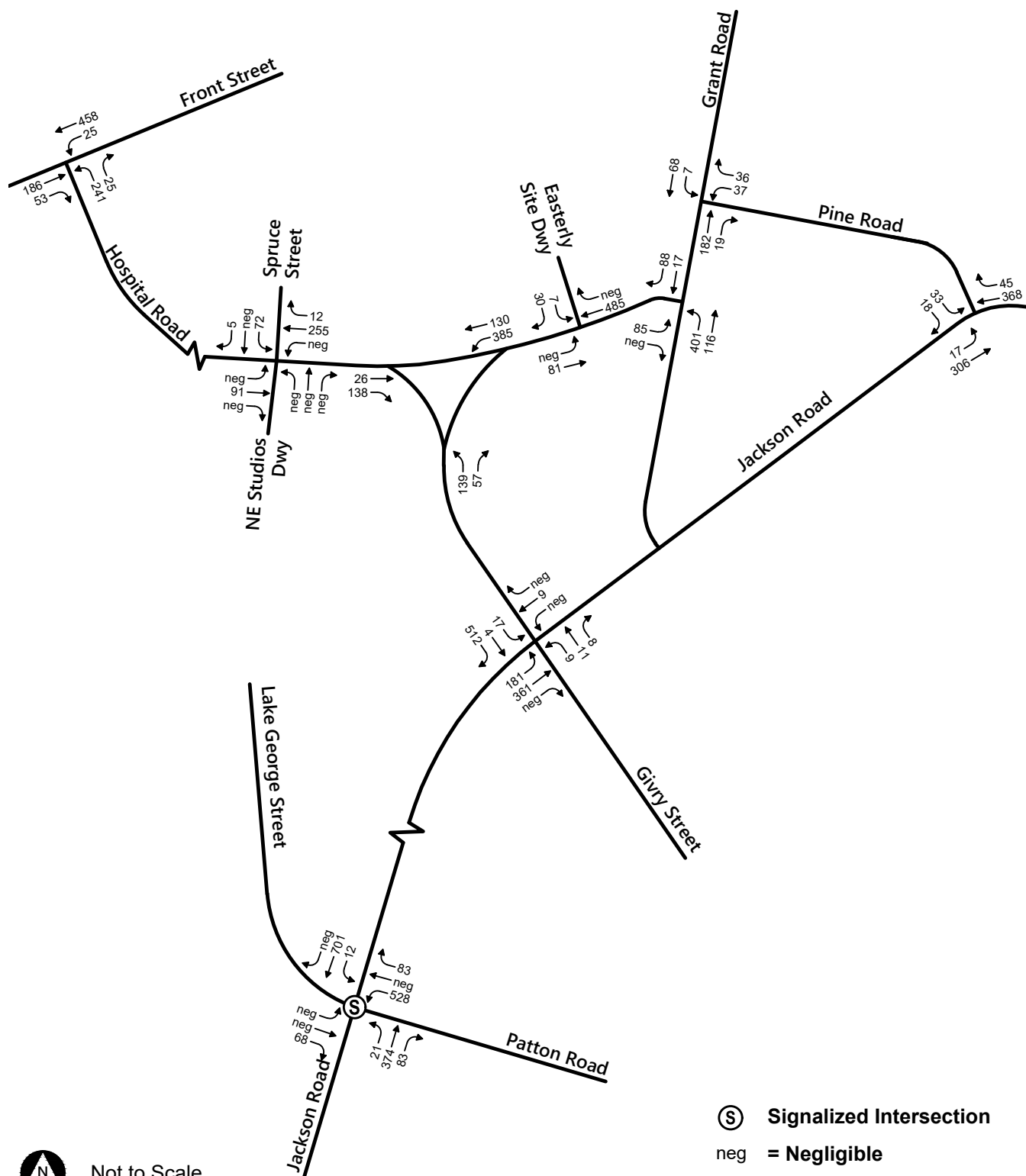


Figure 4: 2025 Existing Conditions Weekday Evening Peak Hour Vehicle Volumes

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Public Transportation

Bus service is provided by Montachusett Regional Transit Authority (MART) from the Fitchburg/Leominster area to Devens Common, Mount Wachusett Community College, and Shirley Town Offices via the Devens Regional Shuttle. Riders must call the MART office one business day before to be picked up or dropped off at a stop in Devens.

MART provides twice daily shuttle bus service from Mount Wachusett Community College to metro Boston and Alewife Station. Return rides must be requested by phone an hour prior.

Commuter rail service is available at Shirley Station, approximately 2000 feet west of the intersection of Front Street at Hospital Road and 1.3 miles from the Project Site. MART also provides bus service to this location. Transit schedules are provided in the Appendix.

Vehicular Crash History

To identify potential vehicle crash trends in the study area, reported vehicular crash data for the study-area intersections was obtained from MassDOT for the years 2017 through 2021, the most recent five-year history available. A summary of the MassDOT vehicle crash history is presented in Table 2 and included in the Appendix.

Crash rates are calculated based on the number of crashes at an intersection and the volume of traffic traveling through that intersection on a daily basis. The 2021 MassDOT average crash rates for District 3 are 0.89 crashes per million entering vehicles (MEV) at signalized intersections and 0.61 crashes per MEV at unsignalized intersections. The crash rate worksheets for the study area intersections are included in the Appendix.

As shown in Table 2, the intersection of Jackson Road at Givry Street has an above average crash rate (0.75 compared to the district average of 0.61 for signalized intersections).

Most crashes at the study area intersections are angle and rear-end collisions resulting in property damage only. No fatal crashes were reported within the study area. No crashes involving a non-motorist (a pedestrian or bicyclist) were reported in the study area.

No intersections within the study area were identified as Highway Safety Improvement Program (HSIP) crash clusters.

Table 2 Vehicular Crash Summary (2017 – 2021)

	Jackson Road at Patton Road / Lake George Street	Jackson Road at Givry Street	Jackson Road at Pine Road	Hospital Road at Westerly Site Driveway	Hospital Road at Givry Street (West)	Givry Street Split	Hospital Road at Givry Street (East)	Grant Road at Hospital Road	Grant Road at Pine Road	Front Street at Hospital Road
Signalized?	Yes	No	No	No	No	No	No	No	No	No
MassDOT District 3 Avg Crash Rate	0.89	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61
Calculated Crash Rate	0.26	0.75	0.06	0.00	0.18	0.00	0.00	0.00	0.14	0.16
Exceeds Average?	No	Yes	No	No	No	No	No	No	No	No
Year										
2017	2	5	0	0	0	0	0	0	1	1
2018	3	4	1	0	0	0	0	0	0	0
2019	1	1	0	0	1	0	0	0	0	1
2020	1	3	0	0	0	0	0	0	0	0
2021	3	4	0	0	0	0	0	0	0	0
Total	10	17	1	0	1	0	0	0	1	2
Collision Type										
Angle	3	13	0	0	0	0	0	0	0	2
Head-on	1	0	0	0	1	0	0	0	0	0
Rear-end	5	1	0	0	0	0	0	0	1	0
Rear-to-rear	0	0	0	0	0	0	0	0	0	0
Sideswipe, opposite direction	0	0	0	0	0	0	0	0	0	0
Sideswipe, same direction	1	1	0	0	0	0	0	0	0	0
Single Vehicle Crash	0	1	1	0	0	0	0	0	0	0
Not reported	0	1	0	0	0	0	0	0	0	0
Severity										
Fatal Injury	0	0	0	0	0	0	0	0	0	0
Non-Fatal Injury	2	8	0	0	1	0	0	0	0	0
Property Damage Only	7	9	1	0	0	0	0	0	1	2
Not Reported	1	0	0	0	0	0	0	0	0	0
Time of day										
Weekday, 7:00 AM - 9:00 AM	3	2	0	0	0	0	0	0	0	0
Weekday, 4:00 – 6:00 PM	0	4	0	0	0	0	0	0	1	0
Saturday, 11:00 AM – 2:00 PM	1	0	0	0	0	0	0	0	0	0
Weekday, other time	6	7	0	0	1	0	0	0	0	1
Weekend, other time	0	4	1	0	0	0	0	0	0	1
Pavement Conditions										
Dry	9	12	1	0	0	0	0	0	1	0
Wet	1	4	0	0	0	0	0	0	0	1
Snow/Ice/Slush	0	1	0	0	1	0	0	0	0	1
Not Reported	0	0	0	0	0	0	0	0	0	0
Non-Motorist (Bike, Pedestrian)	0	0	0	0	0	0	0	0	0	0

Source: Crash data was obtained from MassDOT.

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3

Future Conditions

Traffic volumes in the study area were projected to the year 2032, reflecting a typical seven-year traffic-planning horizon. Independent of the project, volumes on the roadway network under year 2032 No-Build conditions were assumed to include existing traffic and new traffic resulting from background traffic. Anticipated site-generated traffic volumes were added to the year 2032 No-Build traffic volumes to reflect the year 2032 Build conditions in the study area.

Background Traffic Growth

Traffic growth on area roadways is a function of the expected land development, economic activity, and changes in demographics. A frequently used procedure is to estimate an annual percentage increase and apply that increase to study-area traffic volumes. An alternative procedure is to identify estimated traffic generated by specific planned major developments that would be expected to affect the project study area roadways. For the purpose of this assessment, both methods were utilized.

Historic Traffic Growth

In the 2021 Devens Traffic Monitoring Program Report, the Montachusett Regional Planning Commission (MRPC) indicated that a regional growth rate of 2% is warranted for the MRPC region. For this study, a 2% per year background traffic growth rate was determined to be appropriate and was utilized.

Site-specific Growth

Based on communications with MassDevelopment, the following six projects, shown in Table 3, are planned in the study area within the project horizon year.

Table 3 Background Projects

Background Project Address	Build Program
11 Grant Road	232,320-sf Industrial
35 Saratoga Boulevard	154,000-sf Industrial
57/75 Jackson Road	420,000-sf industrial and 7,700-sf amenity
31 Independence Drive	111,505-sf of R&D space
Goddard Street	18 units residential
Grant Road	46 units residential

Traffic volumes expected to be generated by the background projects were estimated using Institute of Transportation Engineers data and distributed based on existing travel patterns, with the exception of the 57/75 Jackson Road project. For 57/75 Jackson Road, traffic volumes expected to be generated by the project are based on the traffic impact and access study conducted by VHB in June 2022². 11 Grant Road, 35 Saratoga Boulevard, and 57/75 Jackson Road are currently under construction, 31 Independence Drive is currently on the Devens Enterprise Commission Agenda, but a permit has not yet been issued, and Goddard Street and Grant Road are currently permitted but construction has not yet begun.

No-Build Traffic Volumes

The 2032 No-Build traffic volumes were developed by applying the 2% annual growth rate over the seven-year study horizon to the 2025 Existing traffic volumes and adding the traffic volumes associated with the site-specific background projects. Figures 5 and 6 show the resulting 2032 No-Build peak hour traffic volumes.

Future Roadway Conditions

In assessing future traffic conditions, proposed roadway improvements within the study area were considered. Planned roadway improvements include the following projects:

Hospital Road at Givry Street

Based on discussions with MassDevelopment, the Hospital Road/Givry Street “triangle”, which previously consisted of three unsignalized intersections that process traffic on Hospital Road eastbound and westbound to/from Givry Street was recently reconstructed to a

² 57&75 Jackson Road Traffic Impact and Access Study. VHB. June 2022.

standard T-intersection. Accordingly, this location was analyzed as a T-intersection under future No-Build and Build conditions..

Jackson Road Widening/Jackson Road and Givry Street Intersection

MassDevelopment is currently developing plans to expand Jackson Road in order to accommodate growth, with the potential adding a center turning lane along Jackson Road or a boulevard style layout. A roundabout may also be incorporated at the intersection of Jackson Road and Givry Street to improve safety at the intersection. These improvements are not included in the 2032 No-Build or Build condition, but it should be noted that the potential improvements are expected to add additional capacity to Jackson Road, improving its operations and safety.

Figure 5: 2032 No-Build Conditions Weekday Morning Peak Hour Traffic Volumes

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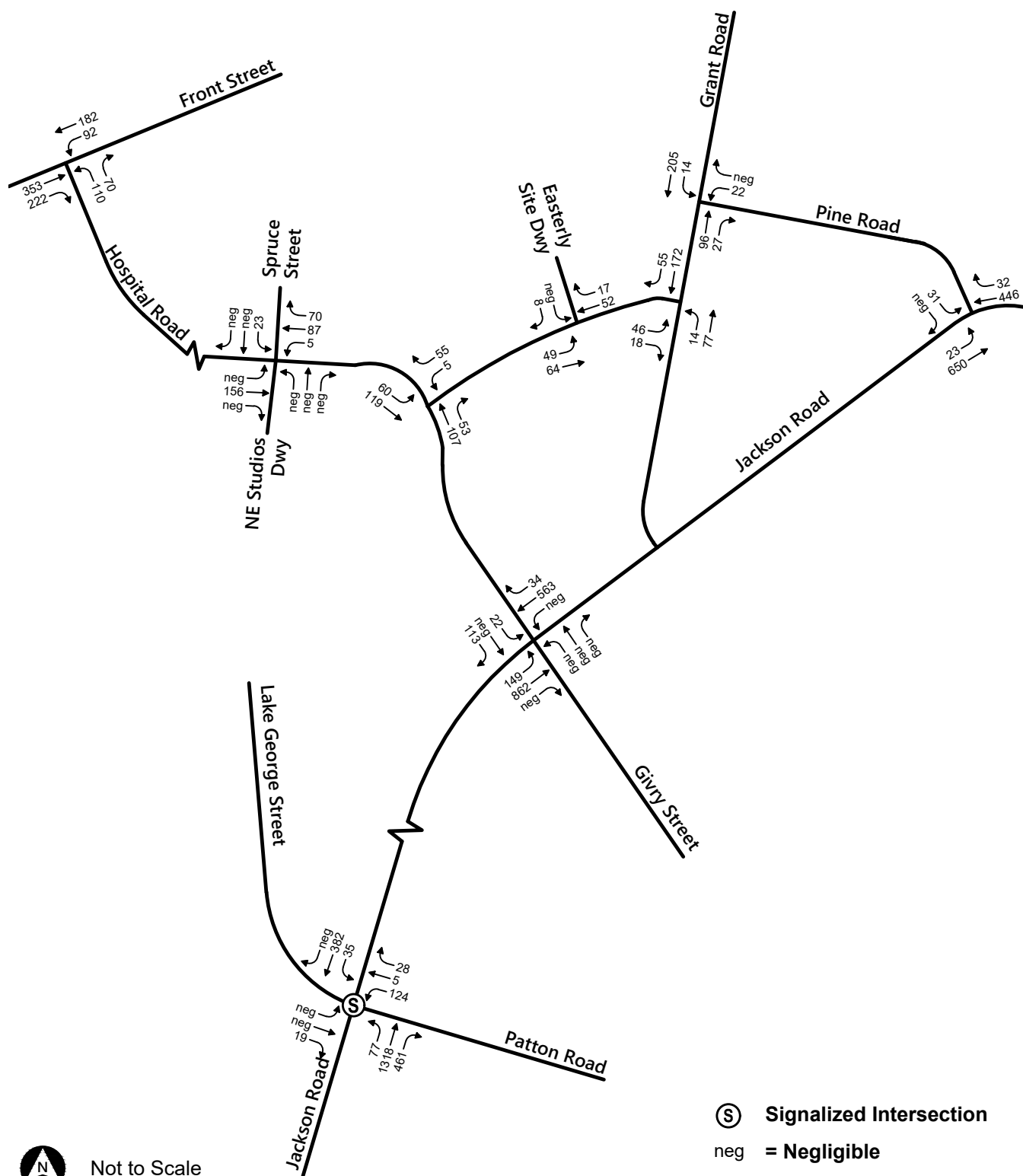
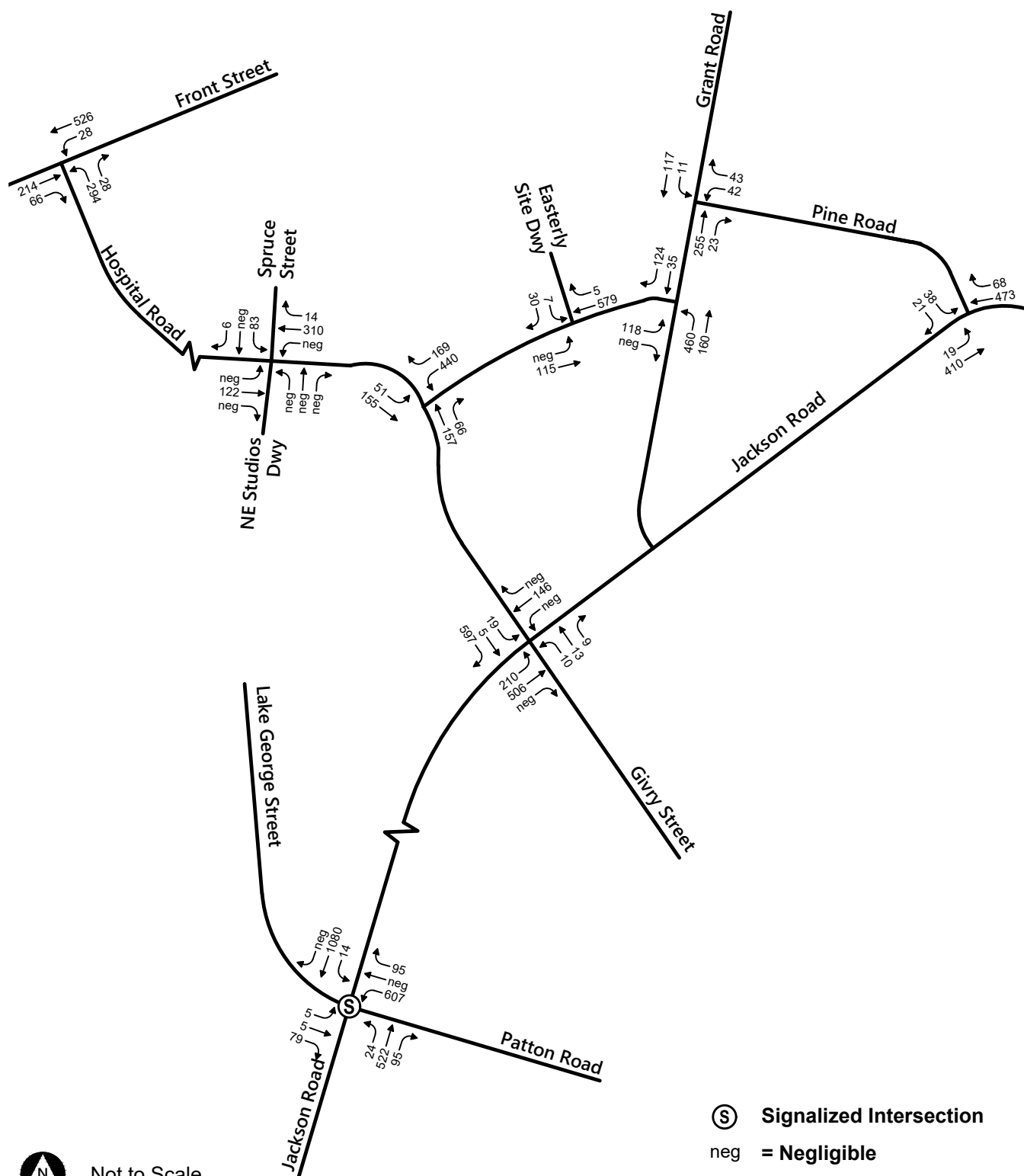


Figure 6: 2032 No-Build Conditions Weekday Evening Peak Hour Traffic Volumes

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Trip Generation

Under existing conditions, the Site is occupied by CFS-1 (162,000 sf) and CFS-2 (147,000 sf). In addition, there is ongoing construction activity at the site associated with CFS-2. Given the unique nature of the existing and proposed CFS buildings, it was important to get an understanding of the existing trip generation characteristics of the Site. As mentioned previously, traffic counts were conducted at the Site in December 2024. A summary of the driveway counts is provided in Table 4. In addition, Table 4 provides an estimate of existing construction traffic based on conversations with CFS representatives.

Table 4 Existing Trip Generation

Time Period	Movement	Driveway Counts ^a	Construction Traffic ^b	Net Existing Trips
Weekday Daily ^c	Enter	1,032	195	837
	<u>Exit</u>	<u>1,031</u>	<u>195</u>	<u>836</u>
	Total	2,063	390	1,673
Weekday Morning Peak Period ^d	Enter	125	Neg	125
	<u>Exit</u>	<u>28</u>	<u>Neg</u>	<u>28</u>
	Total	153	Neg	153
Weekday Evening Peak Period ^d	Enter	12	Neg	12
	<u>Exit</u>	<u>114</u>	<u>Neg</u>	<u>114</u>
	Total	126	Neg	126

Source: VHB; ITE

a Based on traffic counts conducted at the site in December 2024

b Estimated based on an average of 130 construction workers per day and assumed an average of three vehicle trips per day per worker.

c vehicles per day

d vehicles per hour

Neg Because typical construction shifts start and end outside of the peak hours, the peak hour traffic associated with construction activities was assumed to be negligible.

As shown in Table 4, the Site currently generates a total of 1,673 vehicle trips (837 entering/836 exiting) on a daily basis. The Site currently generates a total of 153 vehicle trips (125 entering/28 exiting) during the weekday morning peak hour and 126 new vehicle trips (12 entering/114 exiting) during the weekday evening peak hour. It should be noted that the existing trip generation at the site exceeds the original ITE projections made as part of the February 2021 TIAS. This is primarily because the Site is currently operating with a higher employee density than was envisioned during the planning process. Under existing conditions, most of the employees who will be stationed in CFS-3 are currently working in CFS-1.

Based on its primary function as a manufacturing facility, ITE land use code (LUC) 140 (Manufacturing) was determined to be the most appropriate land use code for comparison purposes. As such, VHB compared the existing trip generation rates for the Site with ITE LUC 140 (Manufacturing) for the weekday daily, weekday morning peak hour and weekday evening peak hour. Based on conversations with CFS, the average employee count on site is

approximately 607 per day. In addition, it is important to distinguish between CFS traffic and construction traffic so that an accurate trip generation rate can be calculated for the Site. Based on an average employee count of 607, a comparison of the trip generation rates (vehicle trips per employee) is provided in Table 4.

Table 5 Trip Generation Rate Comparison

Movement	Driveway Counts ^a	ITE LUC 140 (Manufacturing) ^b
Weekday Daily	2.76 trips/emp	3.00 trips/emp
Weekday AM Peak	0.25 trips/emp	0.24 trips/emp
Weekday PM Peak	0.21 trips/emp	0.29 trips/emp

Source: VHB; ITE

a Based on traffic counts conducted at the site in December 2024, minus estimated construction traffic

b Based on ITE LUC 140 (Manufacturing) regression rates. Peak hour rates are based on peak hour of adjacent street.

As shown in Table 5, the existing trip generation rates are comparable to the ITE LUC 140 (Manufacturing) trip rates based on employee counts. As such, VHB utilized ITE rates to estimate future traffic associated with the Project. Based on conversations with CFS, the Project is expected to result in an increase of 100-150 new employees over three years following construction. Assuming the upper end of the range (150 new employees), the estimated future trip generation is summarized in Table 5.

Table 6 Proposed Trip Generation

Time Period	Movement	New Trips ^a
Weekday Daily	Enter	225
	Exit	<u>225</u>
	Total	450
Weekday Morning Peak Period	Enter	27
	Exit	<u>9</u>
	Total	36
Weekday Evening Peak Period	Enter	15
	Exit	<u>29</u>
	Total	44

a Based on ITE LUC 140 (Manufacturing) using regression rates and using employees as the independent variable. Peak hour rates are based on peak hour of adjacent street.

As shown in Table 6, the Project is expected to generate a total of 450 new vehicle trips (225 entering/225 exiting) on a daily basis. The Project is expected to generate a total of 36 new vehicle trips (27 entering/9 exiting) during the weekday morning peak hour and 44 new

vehicle trips (15 entering/29 exiting) during the weekday evening peak hour. The trip generation calculations are included in the Appendix.

Trip Distribution and Assignment

The directional distribution of the vehicular traffic approaching and departing the site is a function of population densities, the location of employment, existing travel patterns, and the efficiency of the existing roadway system. Trips made from and to the proposed development during the peak hours are expected to be predominantly home-to-work and work-to-home trips in the morning and evening peak hours, respectively. For this TIAS, 2021 U.S. Census Journey-to-Work data was utilized and distributed to the five main entrance/exit points ("gates") for Devens. The Journey-to-Work data is provided in the Attachments. Table 7 summarizes the vehicular trip distribution pattern.

Table 7 Trip Distribution

Gate	Direction (To/From)	Percent of New Site-Generated Traffic Assigned to Route
Shirley Gate (via Hospital Road)	<i>Northwest</i>	7%
Grant Gate (via Grant Road)	<i>North</i>	16%
Verbeck Gate (via Jackson Road)	<i>Northeast</i>	6%
Barnum Gate (via Jackson Road and Barnum Road)	<i>East</i>	1%
Jackson Gate (via Jackson Road)	<i>West/South/East</i>	70%
		100%

As shown in Table 7, the majority of traffic (70%) is projected to use Jackson Road to access Route 2. Given the directional distribution of traffic arriving and departing from the site as well as the ease of access to the parking fields, VHB assumed that 75% of trips would use the westerly site driveway and 25% would use the easterly site driveway. The trip distribution at each study area intersection is illustrated in Figure 7.

Build Traffic Volumes

The projected site-generated traffic volume, as shown in Table 6, was distributed on the study area roadways using the trip distribution shown in Table 7 and added to the 2032 No-Build peak hour traffic volumes to develop the 2032 Build peak hour traffic volumes. These 2032 Build traffic volumes are shown in Figures 8 and 9.

Site Access

As previously stated, primary access to the site is provided via a driveway located across from the NE Studios driveway on Hospital Road. A secondary access driveway is located on Hospital Road east of Givry Street. No changes are proposed to the site access driveways.

Figure 7: Trip Distribution

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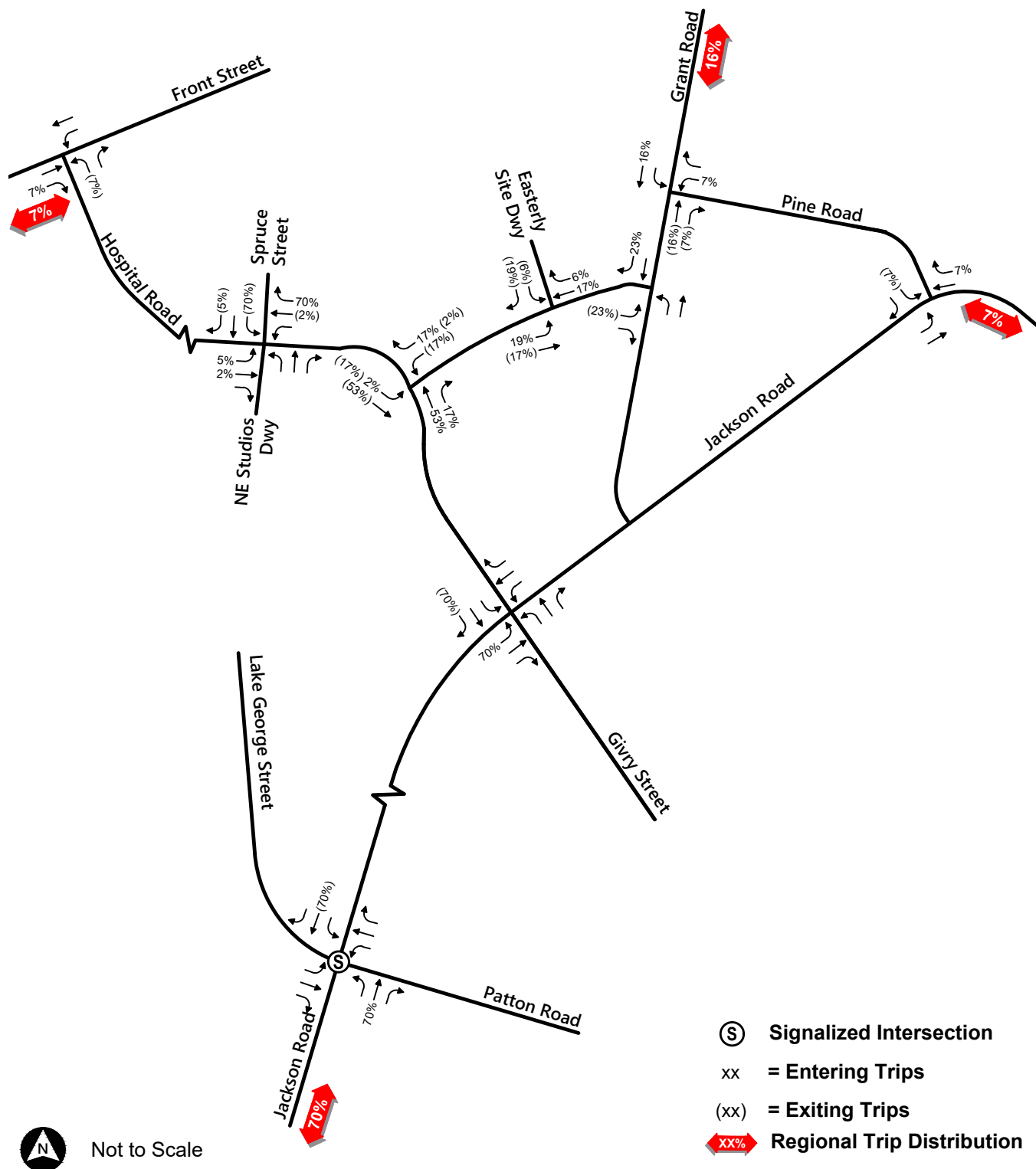


Figure 8: 2032 Build Conditions Weekday Morning Peak Hour Traffic Volumes

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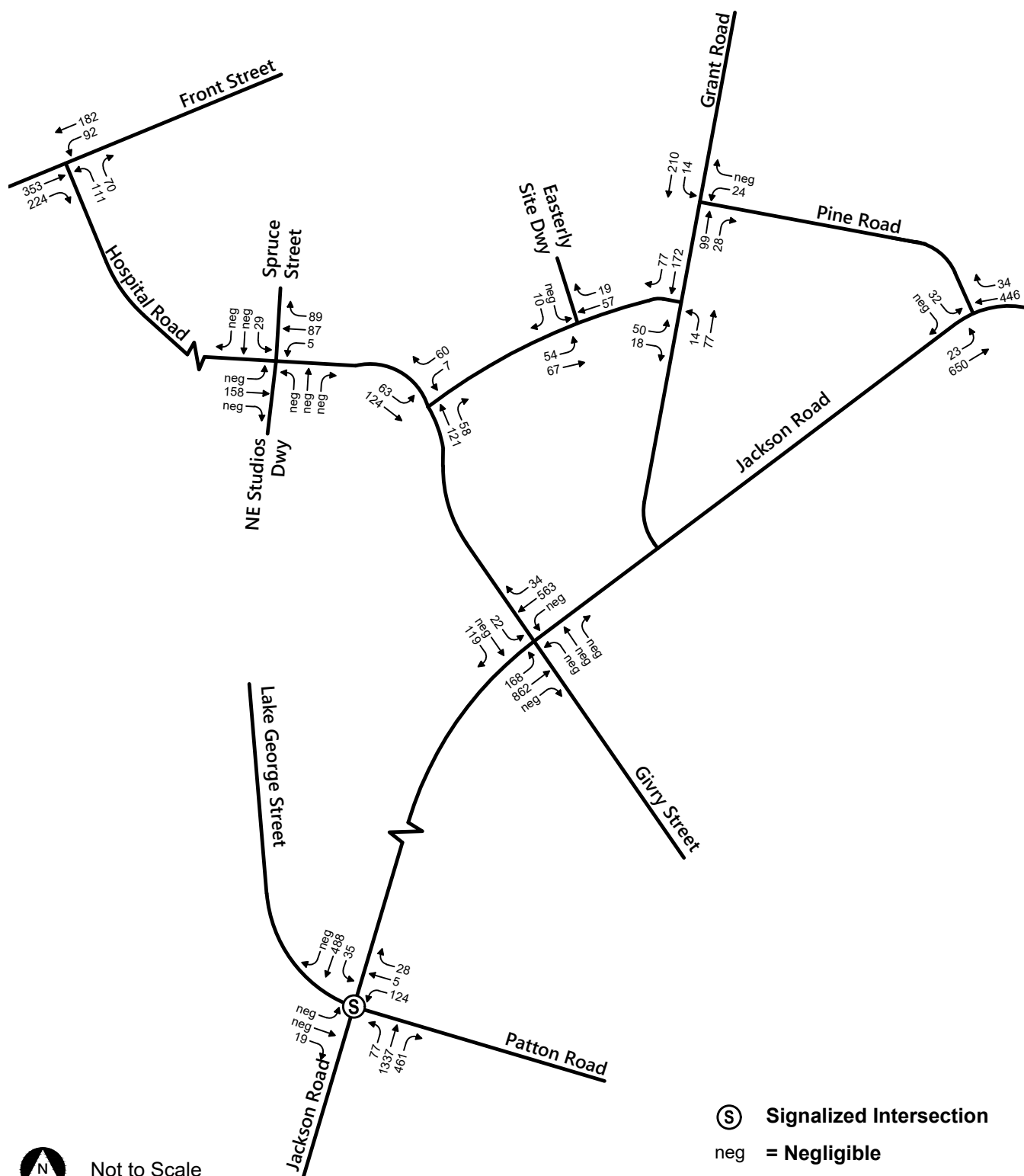
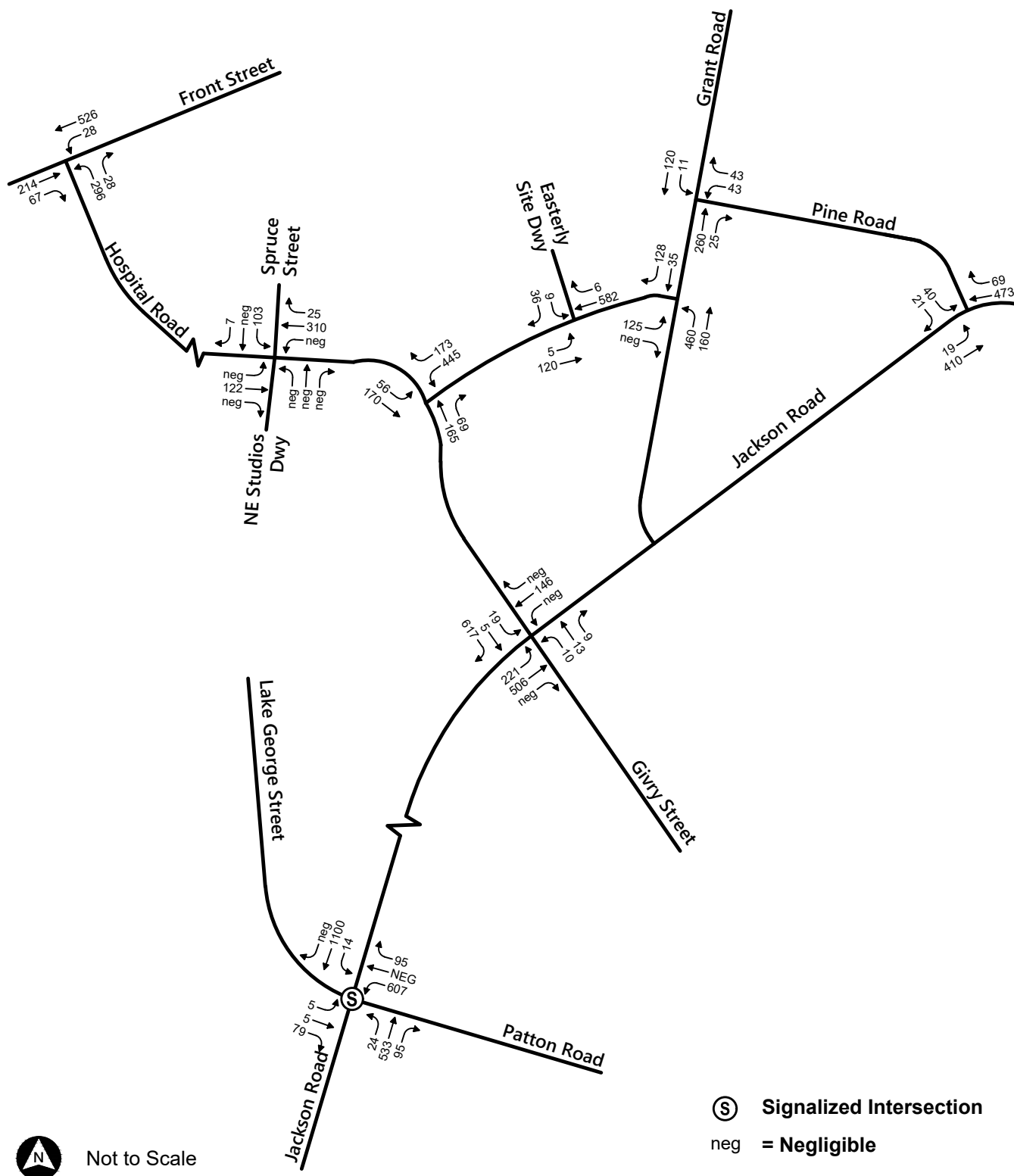


Figure 9: 2032 Build Conditions Weekday Evening Peak Hour Traffic Volumes

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4

Traffic Operations Analysis

Measuring existing traffic volumes and projecting future traffic volumes quantifies traffic within the study area. To assess quality of flow, roadway capacity analyses were conducted with respect to the 2025 Existing conditions and projected 2032 No-Build and Build traffic volume conditions. Capacity analyses provide an indication of the adequacy of the roadway facilities to serve the anticipated traffic demands.

Level-of-Service and Delay Criteria

The evaluation criteria used to analyze area intersections in this traffic study are based on the Highway Capacity Manual, Sixth Edition [HCM 6].³ The term 'level of service' [LOS] is used to denote the different operating conditions that occur on a given roadway segment under various traffic volume loads. It is a qualitative measure that considers a number of factors including roadway geometry, speed, travel delay, and freedom to maneuver.

- › Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level-of-service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of service is derived *directly* from the delay calculation.
- › Delay is a complex measure that depends upon a number of variables such as quality of signal progression, cycle length, allocation of green time, and volume-to-capacity (v/c) ratio. Of all the factors cited, v/c ratios have the least effect on delay. Thus, for any given v/c ratio, a range of delay values [and, therefore, levels of service] may result. Conversely,

3 Transportation Research Board, *Highway Capacity Manual, Sixth Edition: A Guide for Multimodal Mobility Analysis*, Washington, D.C., 2016.

for a given level of service, the v/c ratio may lie anywhere within a broad range.

Comparison of intersection capacity results therefore requires that *in addition to the LOS, the other measures of effectiveness [MOEs] must also be considered.*

The level-of-service designations, which are based on delay, are reported differently for signalized and unsignalized intersections. For signalized intersections, the analysis considers the operation of all traffic entering the intersection and the LOS designation is for overall conditions at the intersection. For unsignalized intersections, the analysis assumes that traffic on the mainline is not affected by traffic on the side streets. Thus, the LOS designation is for the critical movement exiting the side street and is typically the left turn out of the side street or site driveway. Table 8 shows the LOS criteria for both signalized and unsignalized intersections. It should be noted that the analytical methodologies typically used for the analysis of unsignalized intersections use conservative analysis parameters, such as long critical gaps. Actual field observations indicate that drivers on minor streets generally accept shorter gaps in traffic than those used in the analysis procedures and therefore experience less delay than reported by the analysis software. The analysis methodologies also do not fully take into account the beneficial grouping effects caused by nearby signalized intersections. The net effect of these analysis procedures is the over-estimation of calculated delays at unsignalized intersections in the study area. Cautious judgment should therefore be exercised when interpreting the capacity analysis results at unsignalized intersections.

Table 8 Level of Service Criteria

Level of Service	Delay – Signalized Intersection	Delay – Unsignalized Intersection
A	0 to 10 seconds	0 to 10 seconds
B	10 to 20 seconds	10 to 15 seconds
C	20 to 35 seconds	15 to 25 seconds
D	35 to 55 seconds	25 to 35 seconds
E	55 to 80 seconds	35 to 50 seconds
F	Greater than 80 seconds	Greater than 50 seconds

Source: Highway Capacity Manual, Sixth Edition

Level-of-Service Analysis

Levels-of-service analyses were conducted for the 2025 Existing, 2032 No-Build, and 2032 Build conditions for the signalized and unsignalized study-area intersections. Synchro 10 was used to perform the analysis. Per MassDOT guidelines, the peak hour factors for all movements were set to 0.92 for 2032 No-Build and 2032 Build conditions.

Signalized Intersection Capacity Analyses

Table 9 presents a summary of the capacity analyses for the signalized intersections in the study area. The capacity analyses worksheets are included in the Appendix.

Table 9 Signalized Intersection Capacity Analysis

Location / Movement	2025 Existing Conditions					2032 No-Build Conditions					2032 Build Conditions				
	v/c ^a	Del ^b	LOS ^c	50 Q ^d	95 Q ^e	v/c	Del	LOS	50 Q	95 Q	v/c	Del	LOS	50 Q	95 Q
Jackson Road at Patton Road/Lake George Street															
<i>Weekday Morning</i>															
EB L/T/R	0.10	9	A	2	10	0.08	10	A	1	17	0.08	10	A	1	17
WB L	0.61	32	C	43	73	0.59	32	C	42	86	0.59	32	C	42	86
WB T/R	0.11	9	A	1	15	0.10	9	A	2	19	0.10	10	A	2	20
NB L/T	0.96	37	D	~440	#709	>1.20	>120	F	~745	#1048	>1.20	>120	F	~764	#1067
NB R	0.38	2	A	0	35	0.42	2	A	4	43	0.42	2	A	5	45
SB L/T/R	0.62	16	B	87	#263	1.04	75	E	~197	#381	>1.20	>120	F	~285	#360
Overall		24	C				107	F				>120	F		
<i>Weekday Evening</i>															
EB L/T/R	0.19	7	A	3	23	0.20	10	B	11	41	0.21	11	B	11	42
WB L	>1.20	>120	F	~391	#485	>1.20	>120	F	~384	#562	>1.20	>120	F	~384	#562
WB T/R	0.20	6	A	1	24	0.21	6	A	1	32	0.21	6	A	1	32
NB L/T	0.53	12	B	94	153	0.65	14	B	139	238	0.67	15	B	144	245
NB R	0.13	2	A	0	16	0.14	2	A	0	18	0.14	2	A	0	18
SB L/T/R	0.90	28	C	231	#419	>1.20	>120	F	~543	#758	>1.20	>120	F	~560	#777
Overall		>120	F				>120	F				>120	F		

a Volume to capacity ratio.

b Average total delay, in seconds per vehicle.

c Level-of-service.

d 50th percentile queue, in feet.

e 95th percentile queue, in feet.

95th percentile volume exceeds capacity, queue may be longer.

As shown in Table 9, the signalized intersection of Jackson Road at Patton Street currently operates at LOS C during the weekday morning peak hour and LOS F during the weekday evening peak hour. Under 2032 No-Build conditions, this intersection is expected to operate at LOS F during both the weekday morning and weekday evening peak hours. Under 2032 Build conditions, this intersection is expected to continue to operate at LOS F during weekday morning and weekday evening peak hours. Based on a review of delay and queuing on each intersection approach, minimal impacts associated with the proposed Project are expected.

Unsignalized Intersection Capacity Analyses

Table 10 presents a summary of the capacity analyses for the unsignalized intersections in the study area. The capacity analyses worksheets are included in the Appendix.

The analytical methodologies typically used for the analysis of unsignalized intersections use conservative analysis parameters, such as high critical gaps.⁴ Actual field observations indicate that drivers on minor streets generally accept smaller gaps in traffic than those used in the analysis procedures and therefore experience less delay than reported by the analysis software. Consequently, the analysis results tend to overstate the actual delays experienced in the field. For this reason, the results of the unsignalized intersection analyses should be considered highly conservative.

4 'Critical gap' is defined as the minimum time, in seconds, between successive major-stream vehicles, in which a minor-street vehicle can make a maneuver.

Table 10 Unsignalized Intersection Capacity Analysis

Location / Movement	2025 Existing Conditions					2032 No-Build Conditions					2032 Build Conditions									
	D ^a	v/c ^b	Del ^c	LOS ^d	95 Q ^e	D	v/c	Del	LOS	95 Q	D	v/c	Del	LOS	95 Q					
Jackson Road at Givry Street																				
Weekday Morning																				
NEB L	123	0.13	9	A	10	149	0.18	10	A	15	168	0.20	10	A	18					
SWB L	2	0.00	9	A	0	3	0.00	10	A	0	3	0.00	10	A	0					
NWB L/T/R	1	0.01	13	B	0	1	0.00	16	C	0	1	0.00	16	C	0					
SEB L/T/R	115	0.52	31	D	70	135	0.97	>120	F	178	141	1.07	>120	F	205					
Weekday Evening																				
NEB L	181	0.12	8	A	10	210	0.16	8	A	15	221	0.17	8	A	15					
SWB L	1	0.00	8	A	0	1	0.00	9	A	0	1	0.00	9	A	0					
NWB L/T/R	28	0.35	41	E	35	32	0.66	>120	F	65	32	0.79	>120	F	78					
SEB L/T/R	533	0.64	16	C	120	621	0.97	52	F	370	641	1.01	62	F	418					
Jackson Road at Pine Road																				
Weekday Morning																				
EB L	20	0.02	8	A	3	23	0.02	9	A	3	23	0.02	9	A	3					
SB L/R	27	0.16	23	C	15	32	0.19	29	D	18	33	0.20	29	D	18					
Weekday Evening																				
EB L	17	0.02	9	A	3	19	0.02	9	A	3	19	0.02	9	A	3					
SB L/R	51	0.17	16	C	15	59	0.21	20	C	20	61	0.22	20	C	20					
Hospital Road at Westerly Site Driveway/NE Studios Driveway																				
Weekday Morning																				
EB L	3	0.00	8	A	0	3	0.00	8	A	0	4	0.00	8	A	0					
WB L	4	0.00	8	A	0	5	0.00	8	A	0	5	0.00	8	A	0					
NB L/T/R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
SB L/T/R	21	0.04	11	B	3	24	0.05	12	B	3	30	0.06	12	B	5					
Weekday Evening																				
EB L	2	0.00	7	A	0	2	0.00	8	A	0	1	0.00	8	A	0					
WB L	4	0.02	12	B	3	4	0.01	13	B	0	2	0.00	8	A	0					
NB L/T/R	-	-	-	-	-	-	-	-	-	-	4	0.01	13	B	0					
SB L/T/R	77	0.18	13	B	15	89	0.20	14	B	18	110	0.25	15	C	25					
Hospital Road at Givry Street (T-intersection)																				
Weekday Morning																				
WB L/R	Does not exist under 2020 Existing Conditions					60	0.08	10	A	5	67	0.09	10	A	8					
SEB L						60	0.05	8	A	3	63	0.05	8	A	5					
Weekday Evening																				
WB L/R						609	1.14	109	F	545	618	>1.20	>120	F	628					
SEB L						51	0.04	8	A	3	56	0.05	8	A	3					
Hospital Road at Givry Street (west)																				
Weekday Morning						Intersection of Hospital Road at Givry Street expected to be reconstructed as a T-intersection					Intersection of Hospital Road at Givry Street expected to be reconstructed as a T-intersection									
NWB BL ^f	93	0.15	10	B	13															
Weekday Evening																				
NWB BL ^f	139	0.23	12	B	23															
a	Demand																			
b	Volume to capacity ratio.																			
c	Average total delay, in seconds per vehicle.																			
d	Level-of-service.																			
e	95th percentile queue, in feet.																			
f	Yield-controlled movement modeled as a stop-controlled movement in Synchro to obtain results.																			

Table 10 Unsignalized Intersection Capacity Analysis (continued)

Location / Movement	2025 Existing Conditions					2032 No-Build Conditions					2032 Build Conditions				
	D ^a	v/c ^b	Del ^c	LOS ^d	95 Q ^e	D	v/c	Del	LOS	95 Q	D	v/c	Del	LOS	95 Q
Givry Street Split															
Weekday Morning SWB BL ^f	4	0.03	11	B	3	Intersection of Hospital Road at Givry Street expected to be reconstructed as a T-intersection					Intersection of Hospital Road at Givry Street expected to be reconstructed as a T-intersection				
Weekday Evening SWB BL ^f	385	0.78	28	D	185										
Hospital Road at Givry Street (east)															
Weekday Morning WB L	4	0.00	8	A	0	Intersection of Hospital Road at Givry Street expected to be reconstructed as a T-intersection					Intersection of Hospital Road at Givry Street expected to be reconstructed as a T-intersection				
NEB BR ^f	46	0.06	9	A	5										
Weekday Evening WB L	385	0.31	8	A	35										
NEB BR ^f	57	0.06	9	A	5										
Hospital Road at Easterly Site Driveway															
Weekday Morning EB L	49	0.04	8	A	3	49	0.04	8	A	3	54	0.04	8	A	3
SB L/R	8	0.03	9	A	3	8	0.01	9	A	0	11	0.01	9	A	0
Weekday Evening EB L	2	0.00	9	A	0	2	0.00	9	A	0	5	0.01	9	A	0
SB L/R	37	0.13	14	B	10	37	0.09	14	B	8	45	0.11	14	B	10
Grant Road at Hospital Road															
Weekday Morning EB L/R	36	0.08	11	B	8	64	0.11	11	B	10	68	0.11	11	B	10
NB L	12	0.02	9	A	3	14	0.02	9	A	0	14	0.02	9	A	0
Weekday Evening EB L/R	88	0.76	81	F	115	122	1.16	>120	F	208	129	>1.20	>120	F	228
NB L	401	0.33	9	A	35	460	0.36	9	A	40	460	0.36	9	A	43
Grant Road at Pine Road															
Weekday Morning WB L/R	22	0.05	8	A	3	26	0.04	8	A	3	28	0.04	8	A	3
NB T/R	80	0.17	9	A	15	123	0.17	9	A	15	127	0.18	9	A	15
SB L/T	159	0.31	11	B	33	219	0.38	12	B	45	224	0.39	13	B	45
Weekday Evening WB L/R	73	0.13	8	A	10	85	0.12	9	A	10	86	0.17	9	A	10
NB T/R	201	0.29	9	A	30	278	0.36	9	A	40	285	0.37	10	A	43
SB L/T	75	0.12	8	A	10	128	0.17	8	A	15	131	0.18	8	A	15
Front Street at Hospital Road															
Weekday Morning WB L	80	0.15	10	A	13	92	0.11	9	A	10	92	0.11	9	A	10
NB L/R	152	1.19	>120	F	370	180	0.58	30	D	88	181	0.59	30	D	90
Weekday Evening WB L	25	0.03	8	A	3	28	0.02	8	A	3	28	0.02	8	A	3
NB L/R	266	0.92	71	F	220	322	1.11	120	F	345	324	1.12	>120	F	350

a Demand

b Volume to capacity ratio.

c Average total delay, in seconds per vehicle.

d Level-of-service.

e 95th percentile queue, in feet.

f Yield-controlled movement modeled as a stop-controlled movement in Synchro to obtain results.

As shown in Table 10, all movements at the study area unsignalized intersections operate at an LOS D or better during the 2025 existing conditions weekday morning and evening peak hours, except for:

- › the northwest bound movement at the intersection of Jackson Road at Givry Street, which operates at an LOS E during the weekday evening peak hour;
- › the eastbound movement at the intersection of Grant Road at Hospital Road, which operates at an LOS F during the weekday evening peak hour; and
- › and the northbound movement at the intersection of Front Street at Hospital Road, which operates at an LOS F during the weekday morning and weekday evening peak hours.

Under the 2032 No-Build conditions, all movements at the study area unsignalized intersections operate at an LOS D or better during the weekday morning and weekday evening peak hours, except for

- › the southeast bound movement at the intersection of Jackson Road at Givry Street, which operates at an LOS F during the weekday morning and evening peak hours, and the northwest bound movement which operates at an LOS F during the weekday evening peak hour;
- › the westbound movement at the intersection of Hospital Road at Givry Street which operates at an LOS F during the weekday evening peak hour;
- › the eastbound movement at the intersection of Grant Road at Hospital Road, which operates at an LOS F during the weekday evening peak hour; and
- › and the northbound movement at the intersection of Front Street at Hospital Road, which operates at an LOS F during the weekday evening peak hours.

None of the movements at the study area unsignalized intersections degrade in LOS between the 2032 No-Build and 2032 Build conditions.



5

Mitigation

The preceding analysis of the 2025 Existing conditions and projected future traffic demands in the 2032 No-Build and Build conditions indicate that traffic volumes during the peak-hour periods will have minimal impact to operations at the study area intersections. As such, no off-site geometric improvements are proposed as part of this project. In order to further reduce and minimize the impact of the Project on study area roadways, the Proponent is committed to:

- Implement/maintain a series of Transportation Demand Management (TDM) strategies that will reduce single occupancy vehicles arriving and departing from the site and encourage use of area transit and ped/bike resources in the area;
- Conduct a post-occupancy monitoring of traffic conditions to identify differences between the forecasted traffic generation of the development and any critical off-site locations.

The proposed measures are identified below in greater detail.

Transportation Demand Management

The goal of a TDM plan is to reduce the project's overall traffic impact through the implementation of measures that are aimed at affecting the demand side of the transportation equation, rather than the supply side. By their very nature, TDM programs attempt to change people's behavior, and to be successful, they must rely on incentives or disincentives to make

these shifts in behavior attractive to the commuter or retail customer.⁵ TDM programs are designed to maximize the people-moving capability of the existing transportation infrastructure by increasing the number of persons in a vehicle, providing and/or encouraging the use of non-single person vehicle modes of motorized travel, or influencing the time of, or need to, travel.

The term TDM encompasses both alternatives to driving alone and the techniques or supporting strategies that encourage the use of these alternatives⁶. TDM alternatives to driving alone include carpools and vanpools, public and private transit, and non-motorized travel, including bicycling and walking. TDM alternatives can also influence when trips are made. For example, alternative work hours (compressed work weeks, flextime, and telecommuting) can affect what time of day trips are made, or if trips occur at all on certain days. On an area-wide basis, the provision of park and ride facilities and transit services can also provide a competitive alternative to drive-alone commuting. TDM strategies are the supporting measures that encourage the use of alternatives to driving alone. TDM strategies include financial incentives, time incentives, the provision of new or enhanced commuter services, dissemination of information, and marketing alternative services. TDM strategies include all the incentives and disincentives that increase the likelihood for people to change their existing travel behavior.

Transportation Demand Management Program

Section 3.02(2)(o) of the Devens Enterprise Commission Rules and Regulations requires all applicants to agree to participate in the Devens Transportation Management Initiative (TMI). This TDM Program was developed to minimize potential traffic impacts in the region as a result of the redevelopment of Devens. The TDM program includes strategies to reduce peak traffic flows, single-occupancy vehicle trips and increase options for alternative forms of transportation. These strategies will avoid or delay the need for physical improvements that could have environmental consequences (i.e. road widening creating additional stormwater, wetland and open space impacts).

Accordingly, the Proponent is proposing to implement a Transportation Demand Management (TDM) program on the site that is consistent with the Devens TMI and consistent with current practices at CFS-1. These measures include:

5 Implementing Effective Travel Demand Management Measures: Inventory of Measures and Synthesis of Experience, prepared by Comsis Corporation and the Institute of Transportation Engineers, for the U.S. Department of Transportation, DOT-T-94-02, September 1993, p. I-1.

6 Implementing Effective Travel Demand Management Measures: Inventory of Measures and Synthesis of Experience, prepared by Comsis Corporation and the Institute of Transportation Engineers, for the U.S. Department of Transportation, DOT-T-94-02, September 1993, p. I-1.

- › Designate an employee to be the on-site TDM coordinator
- › Participate in the Employee Relocation Commuter Assistance Program (educating employees on transportation options)
- › Provide Ridesharing/Ridematching Services (to promote carpooling and reduce single-occupancy vehicle trips)
- › Offer flexible work hours/compressed work weeks (to reduce AM and PM peak traffic)
- › Devens Shuttle Bus Circulator (providing access to Devens services and local commuting options)
- › Designate parking spaces as preferred parking for any ridesharing services (car/van vanpools)
- › Provide Hybrid/Electrical vehicle plug-in/recharge stations
- › Provide bicycle racks and shower/changing facilities
- › Provide an on-site cafeteria to reduce midday trip making

The Proponent is committed to participating in the Devens TDM/TMI program and achieving a significant and measurable impact on reducing typical peak hour traffic generation for the development with the goal of achieving a 15% reduction as the Devens TMA suggests.

Transportation Monitoring Program

Traffic Monitoring Program

The Proponent is committed to complete an annual traffic monitoring program (TMP) to occur six months after full occupancy of the Project. The data collected as part of the TMP will be distributed to the DEC staff and MassDevelopment within two months of completing the monitoring effort. The TMP will include ATR counts for a 24-hour period on a typical weekday along both driveways serving the site.

In addition, TMCs will be conducted on a typical weekday from 7:00 AM to 9:00 AM and 3:30 PM to 6:00 PM at the following locations:

- › Hospital Road at Westerly Site Driveway / NE Studios Driveway
- › Hospital Road at Givry Street
- › Hospital Road at Easterly Site Driveway

Given the unique nature of the proposed development, the primary purpose of the TMP will be to validate the assumptions in this traffic study for the current phase of the Project (traffic generation and distribution) and serve as a basis for evaluating future phases of development at the site. Because the four intersections listed above are not typically included in the Devens Traffic Monitoring Program, which is conducted every five years, these monitoring counts will serve as a supplemental evaluation to identify any significant differences with the future traffic projections.

TDM Monitoring Program

In addition to the traffic monitoring program, the Proponent is also committed to monitor the participation in, and effectiveness of the proposed TDM program on Site. The Proponent will work with an appointed on-site TDM coordinator to provide a summary of the participation rate and the estimated reduction in Site-generated traffic associated with the TDM measures in place. These findings will be reported to DEC Staff six months after occupancy of the Project.



6

Conclusion

This traffic study presented a detailed traffic assessment to evaluate the traffic impacts associated with the proposed CFS-3 and CFS-4 buildings on the Commonwealth Fusion Systems campus located at 111 and 125 Hospital Road in Devens, Massachusetts. Primary access to the site is provided via a driveway located across from the NE Studios driveway on Hospital Road. A secondary access driveway is located on Hospital Road east of Givry Street.

The Project is expected to generate a total of 450 new vehicle trips (225 entering/225 exiting) on a daily basis. The Project is expected to generate a total of 36 new vehicle trips (27 entering/9 exiting) during the weekday morning peak hour and 44 new vehicle trips (15 entering/29 exiting) during the weekday evening peak hour.

Capacity analyses were conducted for each of the study area intersections under 2025 Existing conditions, 2032 No-Build conditions (without the proposed redevelopment), and 2032 Build conditions (with the proposed redevelopment). Based on the results of these analyses and the anticipated site-generated traffic, the proponent will implement the following measures:

- › Transportation Demand Management Program
- › Traffic Monitoring Program

Overall, VHB concludes that the Project will have minimal impacts to traffic operations at the study area intersections.

Attachment G: Checklist - Industrial Performance Standards



Industrial Performance Standards Checklist for Newly Proposed Projects

All projects within the Devens Regional Enterprise Zone (DREZ) must comply with the Devens Enterprise Commission (DEC) Industrial Performance Standards (IPS) under 974 CMR 4.00. This checklist is intended to assist Applicants in determining at the time of submittal, or ideally before submittal, if their project may or may not involve development and/or activities that may impact sound, vibration, air quality, or lighting within the DREZ.

Site layout, building(s) design/orientation, traffic patterns, location of outdoor equipment and numerous other project components can impact sound, vibration, air quality, and lighting within the DREZ. By identifying any potential IPS concerns early on in the review process, Applicants can design their projects to ensure compliance with the IPS at all times and avoid potential future violations of the IPS and costly mitigation after the fact.

Please note, if a project requires an air permit from the Massachusetts Department of Environmental Protection (DEP), the Applicant will need to initiate permitting through the DEP office as well. Even if a project requires a DEP air permit, the proponent still must demonstrate compliance with the DEC IPS.

Please circle the correct answer to each question in this checklist. Please note that by circling “NO”, the Applicant is not relieved of demonstrating compliance with the IPS requirements. If “NO” is circled and a potential concern is identified during the review process, it could temporarily suspend the approval process timeline until the concern is adequately addressed. If “YES” is answered, please explain and provide any supporting studies, modelling files, or information to aid the DEC in their evaluation of the project.

Project Name _____ Commonwealth Fusion Systems Building 3

Does the proposed project and associated activities involve any potential increases in sound, vibration, air quality, odor, dust, lighting and/or electromagnetic interference that are covered under the DEC Industrial Performance Standards?

YES	NO
------------	-----------

If you answered yes, will the Applicant demonstrate compliance directly or will the project proponent employ an expert to demonstrate compliance? Please provide pertinent contact information of the responsible official:

Noise and Vibration - Cavanaugh Tocci - Contact: Bradley Dunkin 814.232.0064

Air Quality - Commonwealth Fusion Systems - Contact: Chris Scholl 508.596.0154

Lighting and Illumination - HDR - Contact: Anne Ullestad 609.791.7404

EMI - Commonwealth Fusion Systems - Contact: Darby Dunn or Kyle Metzroth

Industrial Performance Standards Checklist for Newly Proposed Projects cont...

Noise

Does the proposed project have the ability to increase sound?

1. Will the increase in sound plus background sound exceed 974 CMR 4.05 (3)a?
2. Will the total sound plus background sound exceed 974 CMR 4.05 (3)b?
3. Will the increase in sound create pure tones that will exceed 974 CMR 4.05 (3)c and/or 974 CMR 4.05 (3)d7?
4. Will the increase in sound create impulsive sounds that will exceed 974 CMR 4.05 (3)d1-6 and/or 974 CMR 4.05 (3)d8?
5. Are there procedures and controls proposed to reduce sound during earth removal per 974 CMR 4.07(10)?

Checklist Options to Demonstrate Sound Compliance

6. Have all of your potential sound sources been identified?
7. Will spreadsheet calculations of the potential increase in sound be provided?
8. Will sound modeling of the proposed project be provided?
9. Will the facility submit a protocol describing the potential sound monitoring, metrics, and modeling as required?
10. Does the project propose to collect background sound data (typically 7-days worth of valid data is sufficient)?
11. If the facility intends to collect background sound data will it include other qualifying weather data such as wind speed, wind direction, sky conditions, etc.?
12. Is mitigation to reduce the overall sound profile proposed?
13. Is sound mitigation to be assumed when calculations or modeling is performed? (modelling files are required to be submitted to the DEC)
14. Is compliance monitoring proposed to demonstrate that the project meets the estimated increases in sound?
15. Have increases in sound with respect to traffic been considered?

YES **NO**

YES NO

YES **NO**

YES NO

YES NO

YES **NO**

YES **NO**

YES **NO**

YES **NO**

See Note 1

YES	NO
-----	----

	YES	NO
1. Do you have a current, valid driver's license?		
2. Do you have a current, valid vehicle registration?		
3. Do you have a current, valid insurance policy?		
4. Do you have a current, valid title?		
5. Do you have a current, valid sales tax certificate?		
6. Do you have a current, valid license plate?		
7. Do you have a current, valid title transfer fee?		
8. Do you have a current, valid title transfer tax?		
9. Do you have a current, valid title transfer fee?		
10. Do you have a current, valid title transfer tax?		
11. Do you have a current, valid title transfer fee?		
12. Do you have a current, valid title transfer tax?		
13. Do you have a current, valid title transfer fee?		
14. Do you have a current, valid title transfer tax?		
15. Do you have a current, valid title transfer fee?		
16. Do you have a current, valid title transfer tax?		
17. Do you have a current, valid title transfer fee?		
18. Do you have a current, valid title transfer tax?		
19. Do you have a current, valid title transfer fee?		
20. Do you have a current, valid title transfer tax?		

YES	NO
------------	-----------

YES **NO**

YES **NO**

YES ☒ NO

YES **NO**

Industrial Performance Standards Checklist for Newly Proposed Projects cont...

Vibration

Does the proposed project have the ability to increase vibration?

16. Will the increase in vibration exceed 974 CMR 4.05 (4)a??

Checklist Options to Demonstrate Vibration Compliance

17. Have all of the potential vibration sources been identified?

18. Will spreadsheet calculations of the potential increase in vibration be provided?

19. Will the proponent provide vibration modeling of the proposed project?

20. Does the project propose to collect background vibration data?

21. Is mitigation proposed to reduce the overall vibration profile?

22. Is vibration mitigation to be assumed when the calculations or modeling performed?

23. Is compliance monitoring proposed to demonstrate that the project meets the estimated increases in vibration as proposed?

YES	NO
YES	NO
YES	NO
YES	NO
YES	NO
YES	NO
YES	NO

Note 1: This project uses sound monitoring data previously collected during sound analysis of CFS-1 and CFS-2.

Industrial Performance Standards Checklist for Newly Proposed Projects cont...

Air Quality

Does the proposed project have the ability to create air, visible, and/or odor emissions?

24. Will the proposed project meet the air quality standards in 974 CMR 4.02(3)

25. Are there procedures and controls proposed to minimize impacts during earth removal per 974 CMR 4.07(7)?

26. Will the proposed project require a MassDEP air quality permit per 974 CMR 4.02 (1)

If the project will require an air permit, then the proponent should set up a meeting with the regional MassDEP office to determine air permitting requirements, and answer the following:

27. Will the proposed project submit a Limited Plan Approval application?

28. Will the proposed project submit a Non-Major Comprehensive Plan Approval application?

29. Will the proposed project submit a Major Comprehensive Plan Approval application?

30. Will the proposed project be a Title V source?

31. Will the proposed project be a PSD source?

Checklist Options to Demonstrate Air Quality Compliance

32. Have you identified all of your potential air, visible and/or odor sources?

33. Will there be any visible emissions?

34. Will there be any dust emissions?

35. Will there be any odor emissions?

36. Will there be any potential increases in air, odor or dust emissions within the DREZ that will impact any internal or external receptors?

37. Will the project proponent provide spreadsheet calculations of the potential increase in air and/or odor emissions within the DREZ to demonstrate how the increase will not impact any internal or external receptors?

YES NO

YES **NO**

YES **NO**

YES NO

YES NO

YES NO

YES NO

YES NO

YES NO

YES NO

YES NO

YES NO

YES NO

YES NO

YES NO

Industrial Performance Standards Checklist for Newly Proposed Projects cont...

Checklist Options to Demonstrate Air Quality Compliance (cont.)

38. Will the project proponent provide air and/or odor modeling of the proposed project within the DEC or into the neighborhood surrounding the DEC??

YES ☒ NO

39. Is mitigation proposed to reduce the overall air and/or odor profile?

YES ☒ NO

40. Is air pollution and/or odor control to be assumed when the calculations or modeling is performed?

YES ☒ NO

41. Is compliance monitoring proposed to demonstrate that the project meets the estimated increases in air and/or odor as proposed?

☒ YES NO

Note: Compliance monitoring will consist of tracking chemical usage/emissions.

Lighting/Illumination

Does the proposed project have the ability to create additional Illumination?

☒ YES NO

42. Will lighting meet the illumination standards set forth in 974 CMR 4.04(3)?

☒ YES NO

43. Have all of the potential light sources been identified?

☒ YES NO

44. Will spreadsheet calculations of the potential increase in light and how it will not affect the Observatory outlined in 974 CMR 4.04(1) or any external or internal receptors be provided?

☒ YES NO

45. Is mitigation proposed to reduce the overall light profile?

☒ YES NO

Electromagnetic Interference

Does the proposed project have the ability to create electromagnetic interference?

YES ☒ NO

46. Have you identified all your potential electromagnetic sources?

☒ YES NO

47. Are you proposing to provide spreadsheet calculations of the potential increase in electromagnetic interference and how it will not affect any internal or external receptors as per 974 CMR 4.03(3)?

YES ☒ NO

48. Are you proposing any mitigation to reduce your overall electromagnetic profile?

YES ☒ NO

49. Will your project comply with all the electromagnetic requirements under 974 CMR 4.03?

☒ YES NO

Attachment H: Noise Study

October 20, 2025

Mr. Joe Imperato
Pivotal Devens, LLC
125 Hospital Road
Devens, MA 01431

Email: joe@pivotalmfg.com

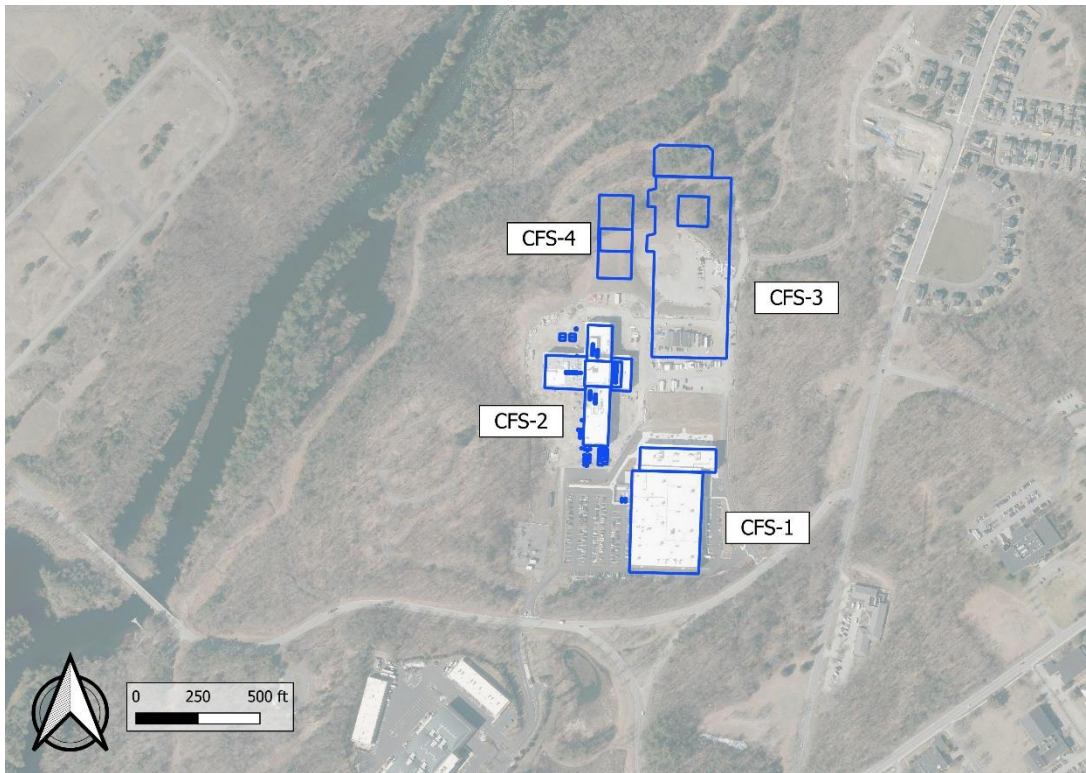
SUBJECT: Environmental Sound Study (revised)
Commonwealth Fusion Systems – Building 3 (CFS-3)

Dear Mr. Imperato,

Cavanaugh Tocci has conducted a study of environmental sound produced by mechanical equipment associated with the proposed CFS-3 building on the Commonwealth Fusion Systems (CFS) Campus in Devens, MA. This study reviews applicable limits on facility sound and develops sound control concepts as may be required for compliance with the industrial performance standards (IPS) noise regulations of the Devens Enterprise Commission (DEC). Appendix A presents a glossary of acoustical terminology used in this report. Appendix B presents sound modeling parameters and inputs.

The CFS-3 building is part of a four-building campus located at 117 Hospital Road in Devens, MA. Construction of CFS-1 is substantially complete and the building is occupied, CFS-2 is under construction with portions in use, and CFS-3 and CFS-4 are in the design phase. Figure 1 shows the CFS campus, with existing buildings CFS-1 and CFS-2, and proposed buildings CFS-3 and CFS-4, and their relationship to the surrounding area.

The analysis discussed in this report is for CFS-3 only; other campus buildings are included in the analysis only as structures, without analyzing their sound sources. The DEC requires that sound produced by all four buildings operating together under normal, frequently occurring conditions comply with the IPS limits. We have evaluated the modeled sound from CFS-3, combined with previous modeling results for CFS-1 and CFS-2. Preliminary modeling results for CFS-4 have been presented in the report “Environmental Sound Study: Commonwealth Fusion Systems – Building 4 (CFS-4)”, dated September 22, 2025, and submitted as part of the CFS-4 Level 2 Unified Permitting application. However, sound from CFS-4 sound sources is not included in the CFS-3 analysis at this stage, as CFS-4 design is ongoing. Sound from the full campus will be evaluated at the appropriate design phase.



**Figure 1. Aerial image showing locations of campus buildings
Commonwealth Fusion Systems, Devens, MA**

Figure 2 is an excerpt from the Devens Reuse Plan. The figure shows the location of the CFS campus. The campus is located within the boundaries of the DREZ (Devens Regional Enterprise Zone) and is surrounded by the Innovation & Technology Business zone within the DREZ. The nearest residential zoned properties within the DREZ are located approximately 300 feet northeast of the campus. Nearest residential properties outside the DREZ are located approximately 1,800 feet northwest in Shirley, MA.

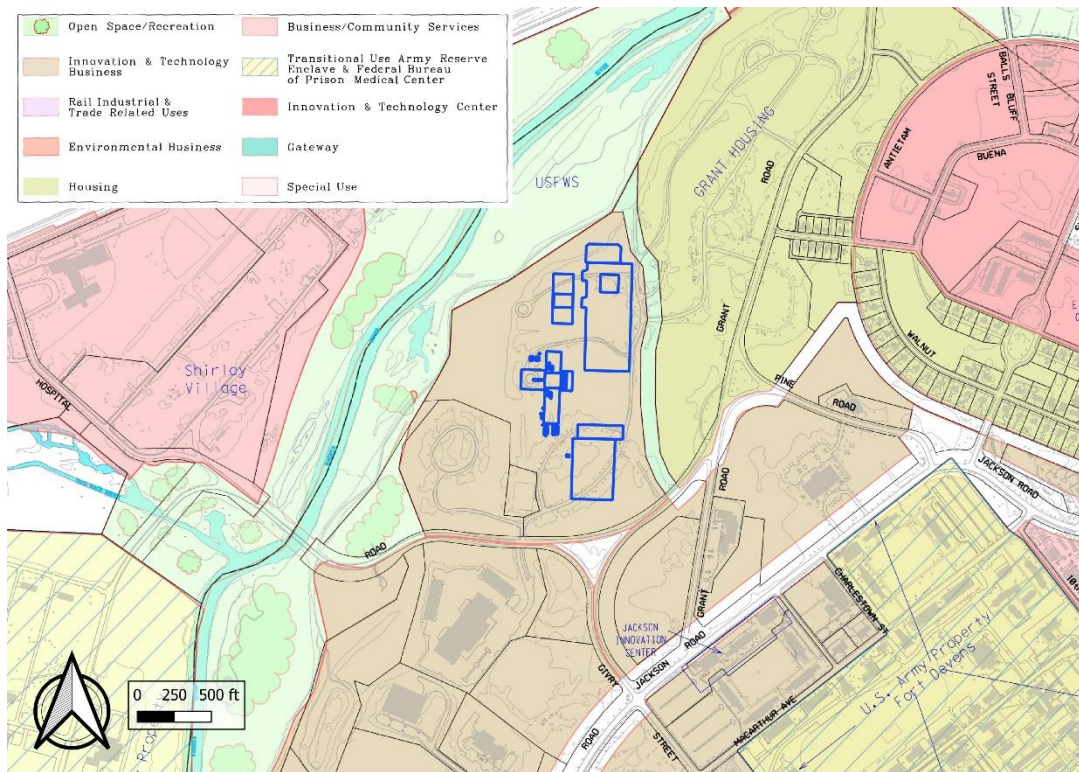


Figure 2. Devens zoning map showing campus location
Commonwealth Fusion Systems, Devens, MA

Environmental Noise Regulations

Noise is a feature of all environments and is considered objectionable only when it is inconsistent with its environment by being either too loud or by being distinctive in character (i.e., tonally or temporally varying). The purpose of environmental noise regulations is to provide a logical and equitable relationship between facility sound and existing environmental sound. The regulations applicable to noise caused by Campus equipment are summarized below.

Devens Industrial Performance Standards

Sound produced within the DREZ is subject to regulation by the Devens Enterprise Commission (DEC) under 974 CMR 4.00 Industrial Performance Standards (Devens noise policy). Specifically, Section 4.05 Noise and Vibration, establishes sound limits intended to “...preclude or significantly mitigate conditions that could cause nuisance to any receptor within or without Devens.”

Subsection 3 states the following:

(3) Noise Limits and Standards - Internal and External Impacts. No party owning, leasing, controlling, or otherwise occupying a facility within Devens shall be allowed to cause

pronounced, multiple patterns of noise or vibration nuisance to or interference with any receptor.

No party owning, leasing, or otherwise controlling a facility within Devens shall be allowed to:

(a) Produce a broadband sound pressure level which exceeds an existing background sound pressure level by the following margins:

1. 5 dBA as measured at any residential property line or receptor within Devens.
2. 10 dBA as measured at any commercial or industrial property line or receptor within Devens.
3. 5 dBA as measured at any Devens perimeter boundary abutting a residential External Receptor,
4. 10 dBA as measured at any Devens perimeter boundary abutting a commercial or industrial External Receptor.

(b) Produce a broadband sound pressure level which exceeds the following levels:

1. 45 dBA nighttime/55 dBA daytime, as measured at any residential property line or receptor within Devens.
2. 60 dBA as measured at a commercial or industrial property line or receptor within Devens.
3. 45 dBA nighttime/55 dBA daytime as measured at any Devens perimeter boundary abutting a residential External Receptor
4. 60 dBA as measured at any Devens perimeter boundary abutting a commercial or industrial External Receptor.

(c) Produce a "pure tone" condition. (definition to follow)

(d) Produce "impulsive" noise in excess of decibel limits and durations established herein (definition to follow)

"Background sound pressure level" is defined as the A-weighted sound pressure level that exceeded 90% of the quietest one-hour time interval during equipment operating hours. [Ref. subsection 3(d)(1)]

"Daytime hours" are 7:00 am to 6:00 pm weekdays. Nighttime hours are all other times, including legal holidays. [Ref. subsection 3(d)(3)]

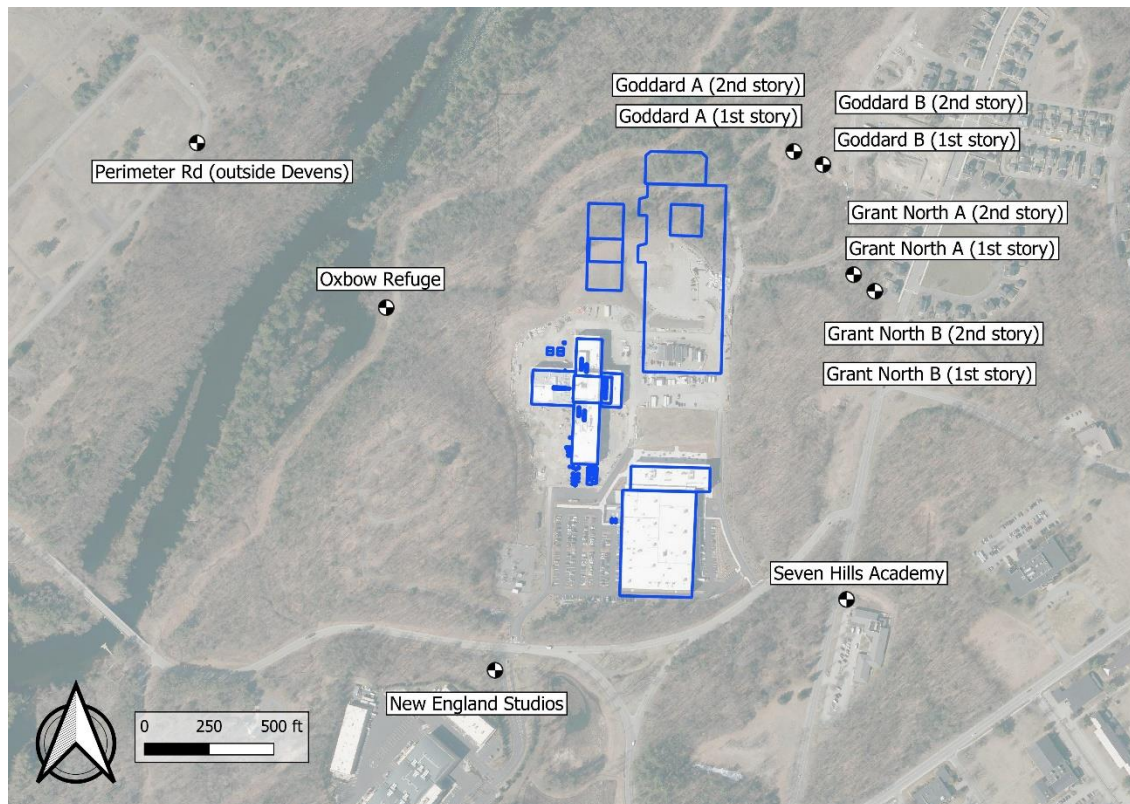
A *"pure tone"* is sound concentrated in a narrow frequency range, and is perceived as a humming, buzzing, whirring, or other such distinctive continuous sound. A pure-tone condition is defined to exist when the sound pressure level in a one-third octave band exceeds the sound pressure levels in both adjacent one-third octave bands, and if the average amount exceeded in both adjacent bands is greater than values provided in subsection 3(d)(7).

"*Impulsive*" noises are sounds which occur intermittently rather than continuously. Impulsive noise may exceed existing background sound levels for a cumulative duration of not more than one minute within any given one-hour period, and subject to the following limits: may exceed the background by up to 10 dBA as measured at any residential property line or receptor, or 15 dBA as measured by any commercial/industrial property line or receptor. The impulsive limit applies only to daytime hours at residential receptors, day and night at commercial and industrial receptors. Readings for impulsive noise shall be recorded with fast sound level meter response. [Ref. subsection 3(d)(8)]

Prior Campus Sound Analysis

Prior sound analysis work for the CFS campus has been reported by Vibrasure in the document "Environmental Noise Impact Study, Revision 1" dated 2025-05-20 (Rev. 2025-07-03). The Vibrasure report includes a detailed appendix (Appendix A) describing baseline sound monitoring, determination of background sound levels, and resulting variable sound level limits.

Sound modeling of CFS-1 and CFS-2 was performed by Vibrasure. Sound levels were calculated at receptor locations shown in Figure 3. Modeled sound levels due to CFS-1 and CFS-2 are near or equal to the variable sound level limits. Therefore, for the CFS campus to be compliant with the regulation, sound from CFS-3 and CFS-4 must produce sound levels that are sufficiently low that the increase in modeled receptor sound levels is negligible.



**Figure 3. Modeled receptor locations
Commonwealth Fusion Systems, Devens, MA**

Facility Sound Impact Assessment

CFS-3 mechanical equipment sound transmitted to receptor study locations has been estimated using Cadna/A (Datakustik GmbH, Version 2025 MR1), a sound propagation loss computer model. Cadna/A implements the sound propagation loss algorithms of ISO 9613-1 and ISO 9613-2 to estimate source sound levels at community receptor locations. In calculating sound levels at receptor locations, the Cadna model accounts for reductions in facility sound pressure levels associated with propagation distance, shielding by intervening structures and topography, and absorption of sound by the atmosphere and porous surfaces.

The following are the CFS-3 sources included in our analysis. All sources were modeled at full capacity operation. The noise data for these sources have been obtained from manufacturer specifications, attached in Appendix B of this report.

- Thirty-two exhaust fans (EF) for ventilation and process exhaust.
- Eleven makeup air units (MAU).
- Two energy recovery ventilation (ERV) units.
- Three air-source heat pump units (ASHP, each unit comprises 8 cells).

A plan of the facility indicating modeled sound sources is presented in Figure 4. The following strategies have been proposed to limit sound impacts:

- Construct a penthouse to enclose most building mechanical equipment.
- Place intake and exhaust louvers on the west and south sides of the penthouse to reduce exposure of residences to the north and east.
- Apply sound attenuators and/or duct lining to the ductwork between mechanical equipment and louvers.
- Place air-source heat pumps at grade on the west side of the building.

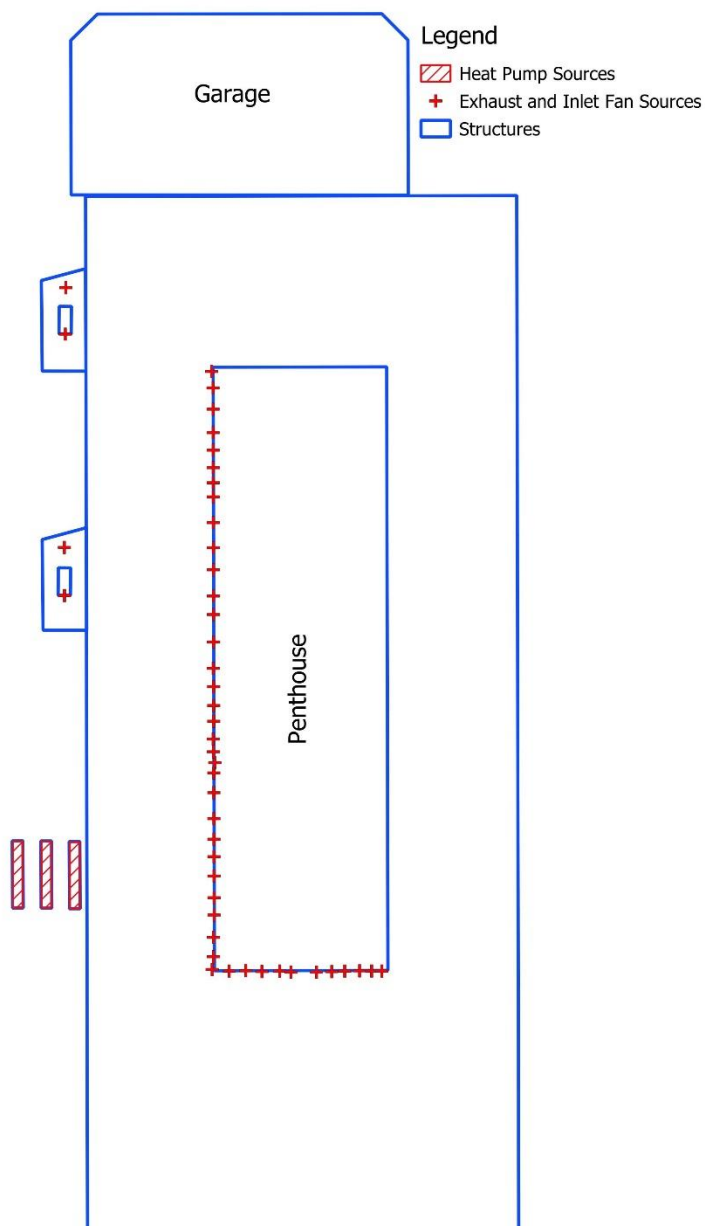


Figure 4. CFS-3 plan with sound sources
CFS-3, Commonwealth Fusion Systems, Devens, MA

Sound levels were calculated for the receptor sites used in previous analysis of CFS-1 and CFS-2, shown in Figure 3.

Table 1 presents estimated sound levels at modeled receptors. The table includes results from previous modeling of CFS-1 and CFS-2, with combined results for all three facilities for comparison to the

applicable IPS variable and fixed sound level limits. Results show no change in combined levels in most cases, and no exceedances of IPS limits.

Receptor	Type	CFS-3	CFS-1, 2 D/E/N	Combined CFS-1, 2, 3 D/E/N	IPS Limits	
					Variable D/E/N	Fixed D/N
Goddard A (1st story)	Residential	16	35 / 35 / 30	35 / 35 / 30	36 / 36 / 33	55/45
Goddard A (2nd story)	Residential	16	36 / 36 / 31	36 / 36 / 31	36 / 36 / 33	55/45
Goddard B (1st story)	Residential	16	35 / 35 / 29	35 / 35 / 29	36 / 36 / 33	60
Goddard B (2nd story)	Residential	17	36 / 36 / 30	36 / 36 / 30	36 / 36 / 33	60
Grant North A (1st story)	Residential	17	35 / 35 / 29	35 / 35 / 29	36 / 36 / 33	60
Grant North A (2nd story)	Residential	17	36 / 36 / 30	36 / 36 / 30	36 / 36 / 33	60
Grant North B (1st story)	Residential	16	31 / 31 / 26	31 / 31 / 26	36 / 36 / 33	60
Grant North B (2nd story)	Residential	17	35 / 35 / 30	35 / 35 / 30	36 / 36 / 33	60
New England Studios	Commercial	24	46 / 46 / 42	46 / 46 / 42	48 / 47 / 47	60
Oxbow Refuge	Commercial	28	38 / 38 / 32	38 / 38 / 33	40 / 42 / 38	60
Perimeter Rd (outside Devens)	Commercial	25	38 / 38 / 32	38 / 38 / 33	40 / 42 / 38	60
Seven Hills Academy	Res (D), Comm (E/N)	22	36 / 36 / 32	36 / 36 / 32	41 / 44 / 41	55/60

**Table 1. Estimated CFS-3 equipment day/evening/night sound levels at modeled receptors – Reference scenario
CFS-3, Commonwealth Fusion Systems, Devens, MA**

Conclusion

Cavanaugh Tocci has evaluated environmental sound produced by mechanical equipment proposed for the CFS-3 facility in the Commonwealth Fusion Systems Campus in Devens, MA. We have presented an equipment configuration that would achieve compliance with IPS limits for combined sound from CFS-1, CFS-2, and CFS-3.

Sincerely,
CAVANAUGH TOCCI

Bradley M. Dunkin, Associate Principal Consultant
25092/CFS-3 acoustic analysis.docx



APPENDIX A

Sound Measurement Terminology

SOUND MEASUREMENT TERMINOLOGY

In order to quantify the amplitude, frequency, and temporal characteristics of sound, various acoustical descriptors are used. The following is an introduction to acoustic terminology that is used in this report.

Sound Level

Sound levels are typically quantified using a logarithmic decibel (dB) scale. The use of a logarithmic scale helps to compress the wide range of human sensitivity to sound amplitude into a scale that ranges from approximately 0 to 180 dB. Note however, that the use of the logarithmic scale prevents simple arithmetic operations when combining the cumulative impact of sources. For example, two sources of equal sound level operated simultaneously results in a combined sound level that is only 3 dB higher than if only one source was operated alone. An important feature of the human perception of continuous sound is that an increase or decrease in sound pressure level by 3 dB or less is barely perceptible, and an increase or decrease by 10 dB is perceived as a doubling or halving of noise level.

A-weighting

Generally, the sensitivity of human hearing is restricted to the frequency range of 20 Hz to 20,000 Hz. However, the human ear is most sensitive to sound in the 500 Hz to 5,000 Hz frequency range. Above and below this range, the ear becomes progressively less sensitive. To account for this feature of human hearing, sound level meters incorporate filtering of acoustic signals that corresponds to the varying sensitivity of the human ear to sound at different frequencies. This filtering is called A-weighting. Sound level measurements that are obtained using this filtering are referred to as A-weighted sound levels and are signified by the identifier, dBA. A-weighted sound levels are widely used for evaluating human exposure to environmental sounds. To help place A-weighted sound levels in perspective, Figure A-1 contains a scale showing typical sound levels for common interior and environmental sound sources.

Spectral Characteristics – Octave and 1/3 Octave Band Sound Levels

To characterize a sound, it is often necessary to evaluate the frequency distribution of the sound energy. As mentioned before, the frequencies of most interest where human exposure is concerned range between 20 Hz and 20,000 Hz. This frequency range is commonly divided into octave bands, where an octave band is a range of frequencies. Each octave band is referred to by its center frequency and has a bandwidth of one octave (a doubling of frequency). To cover the full range of human hearing, it is necessary to measure sound in 10 separate octave bands. Typically, the lowest frequency band measured has a center frequency of 31.5 Hz. The next frequency band has a center frequency of 63 Hz. This geometric series continues to the highest

frequency band that has a center frequency of 16,000 Hz. A set of octave band sound levels to describe a particular sound is called an octave band spectrum. Covering the full range of hearing, an octave band spectrum would have 10 values, one for each band. Under certain circumstances, more frequency resolution in acoustical data is needed to identify the presence of tonal sounds. A 1/3 octave band spectrum uses filters that divide each octave band into 3 separate frequency bands. Note that octave band and 1/3 octave band sound levels are not usually A-weighted, with their units being dB.

Environmental Noise Descriptors

Sound levels in the environment are continuously fluctuating and it is difficult to quantify these time-varying levels with single number descriptors. Statistical approaches, which use *percentile sound levels* and *equivalent sound levels*, are often used to quantify the temporal characteristics of environmental sound.

Percentile sound levels (L_n) are the A-weighted sound levels that are exceeded for specific percentages of time within a noise measurement interval. For example, if a measurement interval is one hour long, the 50th percentile sound level (L_{50}) is the A-weighted sound level that is exceeded for 30 minutes of that interval.

- L_{90} is the sound level in dBA exceeded 90 percent of the time during the measurement period. The 90th percentile sound level represents the nominally lowest level reached during the monitoring interval and is typically influenced by sound of relatively low level, but nearly constant duration, such as distant traffic or continuously operating industrial equipment. The L_{90} is often used in standards to quantify the existing background or residual sound level.
- L_{50} is the median sound level: the sound level in dBA exceeded 50 percent of the time during the measurement period.
- L_{10} is the sound level exceeded only 10 percent of the time. It is close to the maximum level observed during the measurement period. The L_{10} is sometimes called the intrusive sound level because it is caused by occasional louder noises like those from passing motor vehicles or aircraft.

By using percentile sound levels, it is possible to characterize the sound environment in terms of the steady-state background sound (L_{90}) and occasional transient sound (L_{10}).

The equivalent sound level (L_{eq}) is the energy average of the A weighted sound level for the measurement interval. Sounds of low level and long duration, as well as sounds of high level and short duration influence this sound level descriptor.

Noise levels at night generally produce greater annoyance than do the same levels which occur during the day. It is generally agreed that a given level of environmental noise during the day

would appear to be 10 dBA louder at night – at least in terms of potential for causing community concern. The day night average sound level (L_{dn}) is a 24-hour average A-weighted sound level where a 10 dB “penalty” is applied to sound occurring between the hours of 10:00 p.m. and 7:00 a.m. The 10 dB penalty accounts for the heightened sensitivity of a community to noise occurring at night.

When a steady continuous sound is measured, the L_{10} , L_{50} , L_{90} and L_{eq} are all equal. For a constant sound level, such as from a power plant operating continuously for a 24-hour period, the L_{dn} is approximately 6 dBA higher than the directly measured sound level.

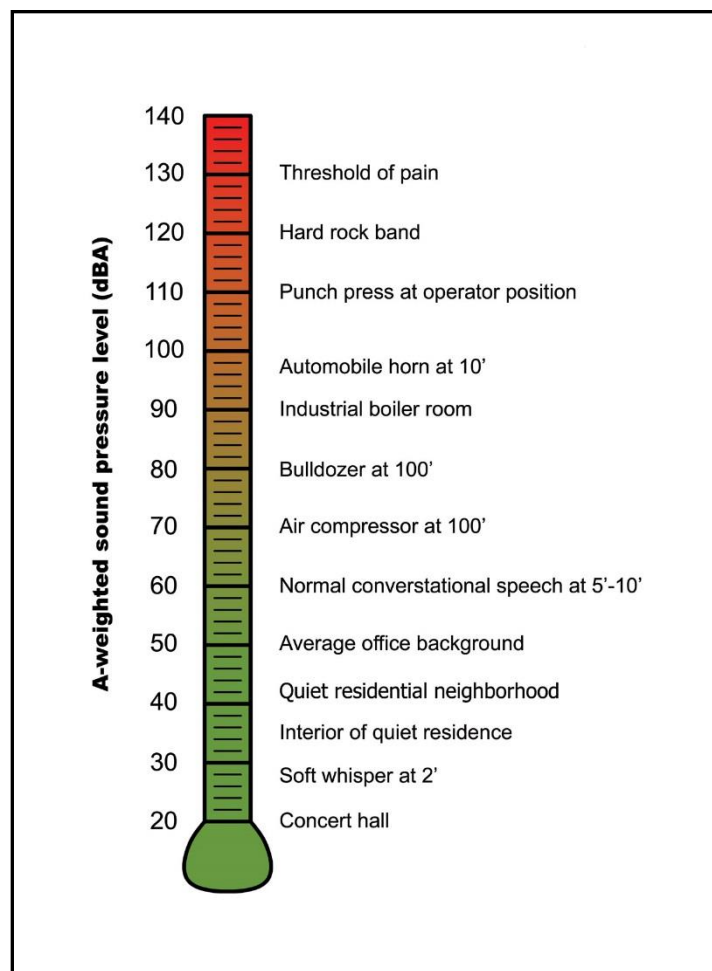


Figure A-1
Typical Sound Levels for Common Interior and Environmental Source



APPENDIX B

Computer Modeling Source Inputs and Parameters

Modeling Technique

Modeling of facility sound was completed using Cadna/A (Datakustik GmbH, Version 2025 MR1). Cadna/A is a computer program that implements the modeling techniques of ISO 9613-1 and ISO 9613-2 to estimate source sound levels at community receptor locations. In calculating sound levels at receptor locations, the Cadna model accounts for reductions in facility sound pressure levels associated with propagation distance, shielding by intervening structures and topography, and absorption of sound by the atmosphere and porous surfaces.

Computer Model Parameters

A receptor elevation of 5 feet above grade has been used in estimating sound levels for commercial receptors and first-floor residential receptors, and 15 feet above grade for second-floor residential receptors.

As sound propagates through the environment, it may encounter boundaries which reflect or absorb some fraction of the incident sound. In our computer model, we have assumed that buildings are acoustically reflective (sound reduction of 1 dB), except where specifically noted. Shielding from topography and existing buildings was included in this analysis. To account for multiple reflectors, two orders of reflection have been included in computer modeling.

Based on our field observations (Google Earth images of the site), we have assigned a Ground Attenuation Coefficient (G) of 0.0 (full sound reflecting surface) for ground conditions on the CFS Campus that are paved and 0.5 (partial sound absorbing surface) for all areas outside the campus. Topography of the surrounding area has been obtained from the United States Geological Survey (USGS) and included in computer modeling.

Equipment Sound Data

Images of sound power data from equipment submittals are presented below.

Exhaust fans EF-1 (4 units), EF-2 (4), EF-4(7), EF-5 (2)

Mark Name	Unit Name	Manufacturer	Airflow (CFM)	Motor (HP)	Fan Speed (RPM)	OB1	OB2	OB3	OB4	OB5	OB6	OB7	OB8	LwA	dBA	Sones
EF-1	270 CPS	COOK	7500	7.5	949	78 / 80	81 / 86	80 / 86	74 / 79	71 / 75	68 / 70	64 / 66	60 / 62	77 / 82	66 / 71	– / –
EF-2	120 CPS	COOK	1000	1	2231	70 / 82	77 / 81	80 / 82	77 / 78	69 / 71	65 / 67	64 / 63	60 / 58	77 / 79	66 / 67	– / –
EF-4	365 ACEB	COOK	10000	2	450	83 / –	83 / –	77 / –	70 / –	69 / –	63 / –	54 / –	49 / –	74 / –	63 / –	13 / –
EF-5	150C08D	COOK	988	0.5	860	65 / –	68 / –	64 / –	58 / –	58 / –	52 / –	48 / –	44 / –	62 / –	51 / –	6 / –

Exhaust fans EF-3 (11 units), EF-6 (4)

Mark Name	Unit Name	Manufacturer	Airflow (CFM)	Motor (HP)	Fan Speed (RPM)	OB1	OB2	OB3	OB4	OB5	OB6	OB7	OB8	LwA	dBA	Sones
EF-6	600QMX	COOK	50000	15	355	83 / 86	80 / 87	80 / 84	77 / 81	72 / 75	66 / 69	59 / 61	52 / 53	78 / 82	66 / 70	– / –
EF-3	70CPS	COOK	500	0.75	2818	78 / 95	90 / 98	88 / 91	82 / 89	78 / 83	69 / 78	65 / 71	58 / 61	84 / 90	73 / 78	– / –

ERV (2 units)

Unit Sound Power Levels (dBs re 1.0 pico-Watts)									
Opening	63	125	250	500	1000	2000	4000	8000	dBA
Supply - Supply Air,Rear-1	82	88	98	91	88	86	82	81	
Supply - Outside Air, MB-1	68	69	66	58	59	58	55	52	65
Return - Exhaust Air,Rear-1	78	79	83	72	73	73	73	72	81
Return - Return Air, MB-1	73	79	83	79	76	73	70	67	
Casing Radiated	74	77	82	71	72	58	52	47	77

MAU (11 units)

Report and Sound Summary:

Unit Sound Power Levels (dBs re 10 ⁻¹² Watts)									
Opening	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Supply Air, Rear, FS-1	81	87	99	93	90	87	86	82	
Outside Air, MB-1	73	72	69	62	59	59	55	47	67
Casing Radiated	71	73	79	69	70	56	51	45	74

ASHP (3) – data is for a 4-cell configuration; each unit is equivalent to two 4-cell sections

Sound Power Levels (In Accordance with AHRI 370)										
Percent Load	Ambient [°F]	Octave Band Center Frequency [Hz]								LWA
		63	125	250	500	1000	2000	4000	8000	
100.0	91.0	85.0	86.0	85.0	84.0	78.0	75.0	73.0	70.0	85.0

Attachment I: Water Resource Protection Compliance Narrative



October 20, 2025

Water Resource Protection Overlay Districts (WRPs) Compliance Narrative

The proposed project site for CFS-3 is located within the Aquifer District of the Water Resource Protection Overlay District. The purpose of this regulation is to protect the ground and surface water resources in Devens and abutting communities, promote surface water quality in the Nashua River Basin, and to prevent the temporary or permanent contamination of soils, surface water, and groundwater. CFS will comply with 974 CMR 4.09 (2)(b) – Aquifer WRP Requirements, while also complying with 974 CMR 4.09 (2)(a) – Watershed WRP Requirements as follows:

974 CMR 4.09 (2)(a): Watershed WRP Requirements:

1. On the CFS Campus, as well as on the CFS-3 proposed site, stormwater is treated and recharged to groundwater systems by routing all stormwater to infiltration basins as described in Attachment C - VHB Stormwater Report.

The Project will require application (and potential storage) of de-icing materials to ensure the safety of staff and visitors and to maintain operation of the facility. Per the Water Protection Report dated Nov 1994, the facility will:

1. Not exceed the low salt application rate of 150 lbs/lane miles for deicing roadways
2. Remove snow from the exterior equipment pads.
3. Prohibit the direct application of 100% road salt to roads.
4. Prohibit the stockpiling and/or disposal of snow or ice containing deicing materials from outside the Aquifer Zone

Hazardous materials from CFS-3 will be transported according to industry practices. Transportation will be performed by licensed haulers. All carriers will use the major roads within Devens that are designated to facilitate the safe transport of the materials. Each carrier may use different roads depending on their direction of travel to the site.

All activities will be performed in accordance with state and federal regulations, including signage/labeling, inspections, and handling. All storage tanks have secondary containment. There are no underground tanks. All hazardous waste will be disposed of or recycled at a licensed hazardous waste disposal facility. Additional information is available in the Hazardous Waste Contingency Plan and the Spill Prevention Control and Countermeasure (SPCC) Plan.

At this stage in development, the sizing and specific location of the tanks are not finalized. Tanks will meet applicable ATSM or ASME construction requirements and be properly permitted to meet state and local regulatory requirements.



No Radioactive Materials will be used in CFS-3. Please note that Commonwealth Fusion Systems is licensed by the Massachusetts Department of Public Health, Division of Radiation Control, for a radioactive materials license.

2. Water Conserving Plumbing and Fixtures will be utilized in the project to the maximum extent feasible and will meet the Massachusetts Plumbing Code.
3. Commonwealth Fusion Systems currently has an SPCC for CFS-1. This plan will be expanded to include CFS-2 once CFS takes occupancy of this building. As CFS-3 is constructed, CFS will further expand the facility SPCC plan to include CFS-3. The plan will be in conformance with 40 CFR 112 and the Devens Master SPCC Plan, dated February 2001. The Facility is not subject to the Facility Response Plan requirements set forth in 40 CFR 112.20.
4. Pesticide applications above one acre are not anticipated for this project as part of a regular maintenance program at this stage of development. Should pesticide application on the Green south of CFS-3 and nearby landscape to total an application area of more than one acre become probable, CFS will prepare and implement an Integrated Pest Management (IPM) Plan in accordance with the Massachusetts Department of Food and Agriculture Pesticide Bureau IPM Kit for Building Managers that will be submitted to the DEC. Blank fertilizer and pesticide applications will be prohibited, and possibility of utilizing organic fertilizers will be prioritized.
5. CFS will not use a motorized off-road recreational vehicle within DREZ.
6. CFS will not receive hazardous waste from external locations.

974 CMR 4.09 (2)(b): Aquifer WRP Requirements:

1. CFS has prepared a Hazardous Waste Contingency Plan that suffices the requirements for a Hazardous Material Spill Response Plan. The CFS Hazardous Waste Contingency Plan is a comprehensive guide that includes methods for the interception and isolation of hazardous waste and hazardous material, spill response plans and chains of command, types of emergencies, emergency routes, and locations of spill response kits in buildings. This plan is written in accordance with the Massachusetts Department of Environmental Protection (MA DEP) hazardous waste regulations (310 CMR 30) and the U.S. Environmental Protection Agency (EPA) hazardous waste regulations (40 CFR 265 Subpart D). This Hazardous Waste Contingency Plan will be amended to include CFS-3 upon further development of floorplan and materials being used and housed within the building.
2. CFS-3 will use a range of hazardous chemicals that are typical for industrial manufacturing including solvents (IPA, acetone), lubricants (cutting oils), welding and soldering supplies (acetylene, tin/lead solder), compressed gas cylinders (helium, argon), epoxy (resins and hardeners), R&D activities, and miscellaneous maintenance supplies (paints, grease). Specific volumes, location, storage, and additional materials are yet to be known at this stage of development.

CFS will continue to submit annual tier-two reports on storage and location of hazardous materials to the State Emergency Response Commission (SERC), the Local Emergency Planning Committee (LEPC), and the local fire department. As design and development of CFS-3 progresses, an updated report of specific materials used and housed in CFS-3, along with their location, storage, and volume will be updated and submitted to the appropriate aforementioned entities, as well as the DEC.



3. CFS will prepare and implement a GWMP in accordance with 310 CMR 30.663.
4. Refer to the VHB Stormwater Report for comprehensive documentation of the stormwater management strategy, which aligns with best practices in sustainable site design, regulatory compliance, and long-term environmental resilience.

974 CMR 4.09 (5) Control of Hazardous Waste and Materials in WRP's

- b) CFS uses hazardous materials in CFS-3 and will comply with the requirements and restrictions of 974 CMR 4.09(5). Specifically:
 1. No direct discharge of hazardous materials to the environment
 2. No use of prohibited septic system additives
 3. Spill prevention in accordance with our SPCC Plan and storage tanks in compliance with 527 CMR 9.00
 4. Proper signage and labeling for hazardous materials and hazardous waste storage
 5. There are no underground storage tanks planned for CFS-3
- c) The section of 974 CMR 4.09(5)(c) – Registration of Hazardous Materials does not apply as CFS is not in a Zone II WRP and does not have any underground storage tanks.
- e) CFS meets the notification and planning aspects of 974 CMR 4.09(5)(e) via the implementation of the campuswide Hazardous Waste Contingency Plan.

974 CMR 4.09 (6) Storage of Fuel, Combustible and Flammable Liquids

The only flammable/combustible materials associated with CFS-3 are hydrogen (flammable, Class I) and diesel fuel (combustible, Class II). The hydrogen will be stored on site in volumes less than the threshold for licensing per 527 CMR 14.03. The diesel storage volume is not yet defined. As design progresses, if it is determined that a license for flammable / combustible storage at CFS-3 is required, CFS will obtain the license via a Level 2 application process.

974 CMR 4.09 (7) Radioactive Materials and Medical Research Wastes

No Radioactive Materials will be used in CFS-3. Please note that Commonwealth Fusion Systems is licensed by the Massachusetts Department of Public Health, Division of Radiation Control for a radioactive materials license. No medical research waste will be generated.

974 CMR 4.09 (8) Floor Drains

There will be no floor drains in CFS-3 that discharge to the ground, a leaching structure, or septic system.

Attachment J: Construction Logistics Plan

BOND

Building

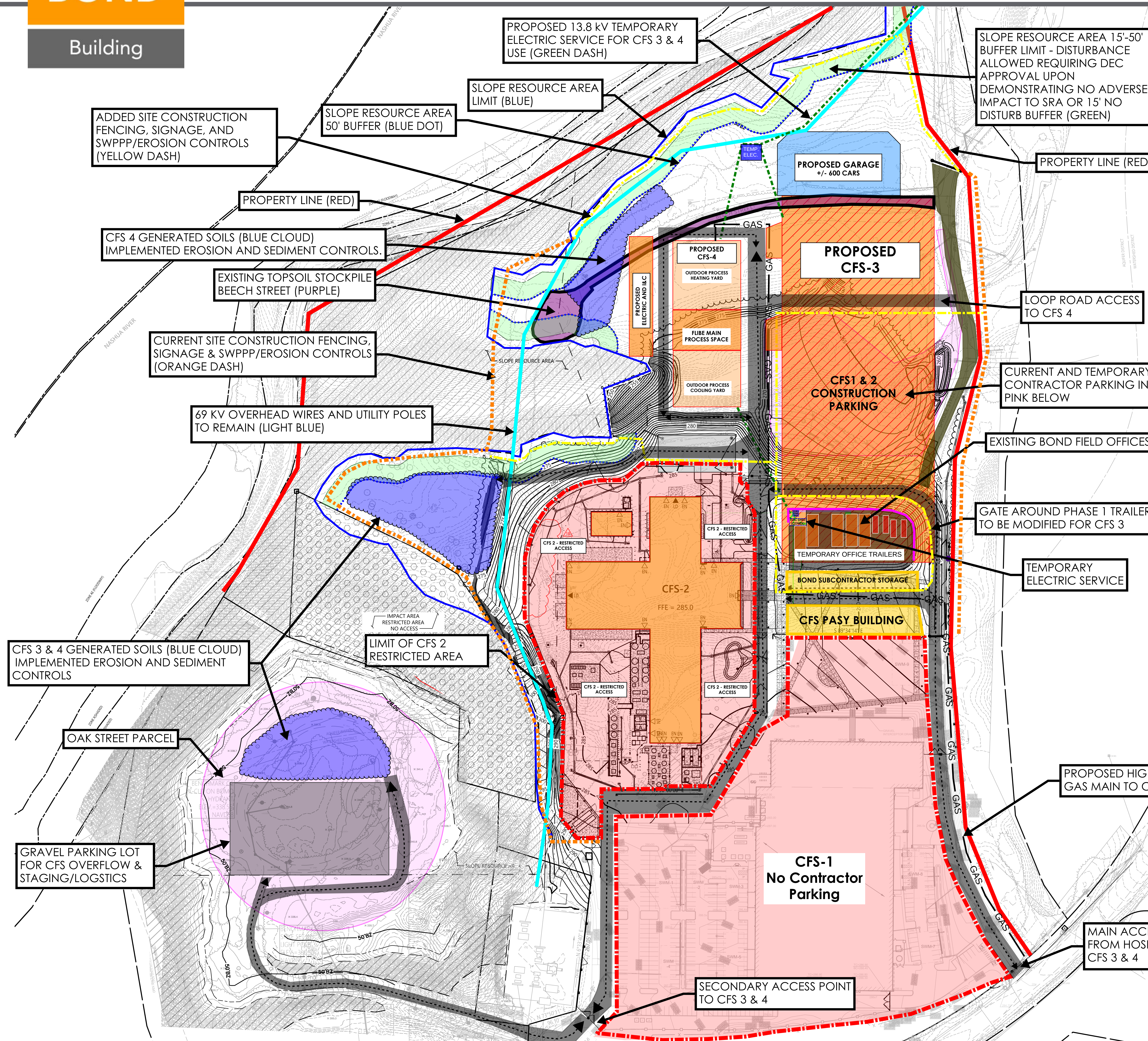
Evans
GENERAL
CONTRACTORS

COMMONWEALTH FUSION SYSTEMS

CFS-3 & 4

LOGISTICS PLAN - PHASE I

OCTOBER 2025



1. BOND TEMPORARY CFS-2 OFFICE LOCATION TO REMAIN IN CURRENT LOCATION THROUGH 2026. ESTABLISH NEW LOCATION TO THE SOUTH OF CFS 4 2027.

2. CURRENT TEMPORARY CONTRACTOR PARKING AT FUTURE CFS3 SITE TO REMAIN THROUGH 2026. ADDITIONAL TEMPORARY LOTS TO BE ADDED PER PLAN.

3. TEMPORARY ELECTRIC SERVICE TO REMAIN IN CURRENT LOCATION THROUGH 2026 AND THEN ESTABLISH NEW TEMPORARY SERVICE TO THE NORTH OF CFS 4.

4. NEW HIGH PRESSURE GAS SERVICE TO BE ROUTED OFF HOSPITAL ROAD ALONG EAST SIDE OF PROPERTY.

5. UTILIZE CURRENT TEMPORARY ROADWAY AT EAST SIDE THROUGH 2026. NEW TEMPORARY ROADWAY ESTABLISHED BETWEEN CFS 3 & 4.

6. CFS -2 PERIMETER RESTRICTED FROM CONSTRUCTION TRAFFIC.

7. BEECH STREET LOAM STOCKPILE GENERATED FROM CFS 1 & 2 TO BE RELOCATED WITHIN SITE BOUNDARY.

8. NEW SOIL STOCKPILE GENERATED FROM CFS 3 & 4 TO REMAIN ON SITE

LEGEND

- UNDERGROUND TEMP ELECTRIC
- GAS — PROPOSED GAS SERVICE
- PROPERTY LINE
- BOND EXISTING SITE FENCE
- BOND PROPOSED SITE FENCE
- 69KV ELECTRICAL POLE SERVICE
- CFS OCCUPIED/RESTRICTED SPACE
- SLOPE RESOURCE AREA LIMIT

BOND

Building

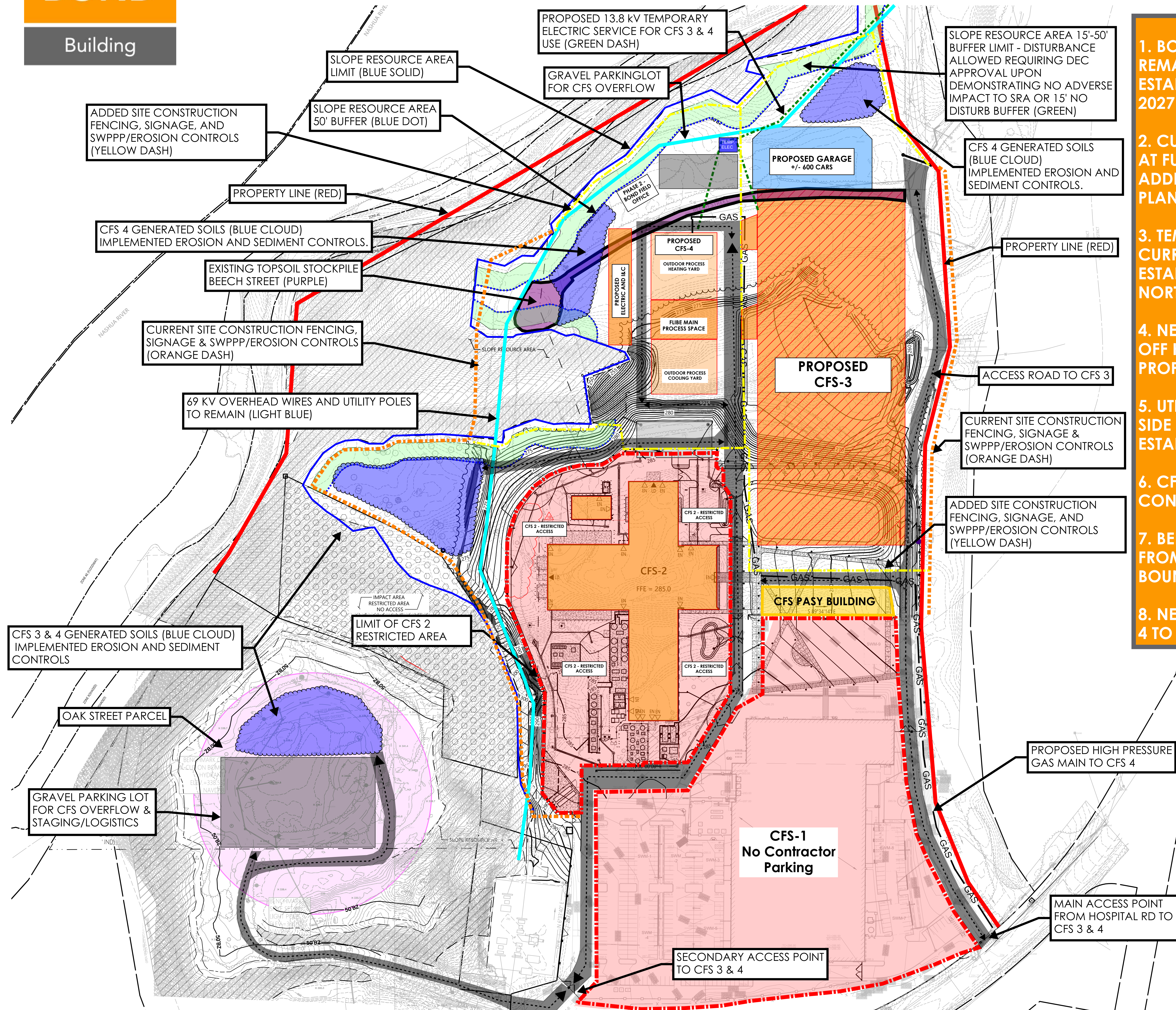
Evans
GENERAL
CONTRACTORS

COMMONWEALTH FUSION SYSTEMS

CFS-3 & 4

LOGISTICS PLAN - PHASE II

OCTOBER 2025



1. BOND TEMPORARY CFS-2 OFFICE LOCATION TO REMAIN IN CURRENT LOCATION THROUGH 2026. ESTABLISH NEW LOCATION TO THE SOUTH OF CFS 4 2027.

2. CURRENT TEMPORARY CONTRACTOR PARKING AT FUTURE CFS3 SITE TO REMAIN THROUGH 2026. ADDITIONAL TEMPORARY LOTS TO BE ADDED PER PLAN.

3. TEMPORARY ELECTRIC SERVICE TO REMAIN IN CURRENT LOCATION THROUGH 2026 AND THEN ESTABLISH NEW TEMPORARY SERVICE TO THE NORTH OF CFS 4.

4. NEW HIGH PRESSURE GAS SERVICE TO BE ROUTED OFF HOSPITAL ROAD ALONG EAST SIDE OF PROPERTY.

5. UTILIZE CURRENT TEMPORARY ROADWAY AT EAST SIDE THROUGH 2026. NEW TEMPORARY ROADWAY ESTABLISHED BETWEEN CFS 3 & 4

6. CFS -2 PERIMETER RESTRICTED FROM CONSTRUCTION TRAFFIC.

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- UNDERGROUND TEMP ELECTRIC
- GAS - PROPOSED GAS SERVICE
- PROPERTY LINE
- BOND EXISTING SITE FENCE
- BOND PROPOSED SITE FENCE
- 69kV ELECTRICAL POLE SERVICE
- CFS OCCUPIED/RESTRICTED SPACE
- SLOPE RESOURCE AREA LIMIT

Attachment K: Embodied Carbon Checklist

Project Checklist for Reducing Embodied Carbon in Devens

A Worksheet for Project Teams

Embodied Carbon Reduction Strategy		Checklist for Schematic Design			Checklist Based on As-Builts		Get Started on Learning More <i>(More to be added in v2!)</i>
0 Process and Tools		Already included	Will pursue?		Achieved?		
	0 Identify Embodied Carbon as a Priority Communicate early in the design process that reducing embodied carbon is a design and procurement priority for the whole team (e.g., structural engineer, architect, contractor, sustainability consultants, mechanical engineers, etc.)	Yes	Yes	<i>The CFS-3 project is currently in the initial design phase. Detailed strategies to achieve the project's carbon reduction and sustainability goals will be integrated as the project progresses and the building design evolves.</i>	SELECT	<i>Add a brief explanation as to whether and how the project incorporated this strategy. If the team intended to pursue this strategy but was not able to, provide insight as to why.</i>	WGBBC Bringing Embodied Carbon Upfront
	0 Set a Project Embodied Carbon Reduction Target Align the design and construction team around an embodied carbon reduction target. Consider targets from organizations around the globe (e.g., C40, Architecture 2030, WGBBC, LETI) to understand what reductions we need now to reach 2030 and 2050 goals. Use life cycle assessment tools (see Sections 0.3 and 0.4 below) to track progress towards reduction goals. See Section "4.1 Integrate Carbon Intensity Limits into Specifications" for information about setting targets for multiple building products.	No	Yes	The CFS-3 project team can establish an embodied carbon reduction target and incorporate practices into the building design and construction that will assist in achieving these reduction targets, as the project progresses from the initial design stages. The intent is to achieve a level of embodied carbon that is below the baseline through building material optimization.	SELECT		C40 Cities Clean Construction Declaration LETI Embodied Carbon Primer: Best Practice Targets Architecture 2030 2030 Challenge for Embodied Carbon
	0 Commit to Using Whole Building (Whole Project) Life Cycle Assessment Perform a whole building life cycle assessment (WBLCA) early in design development to identify the largest opportunities ("hot spots") for emissions reductions. Use the results from WBLCA(s) done throughout design to compare design choices and identify which reduction strategies will have the largest impact. WBLCA can be used to analyze the whole building, tenant improvement projects, or portions of a building	No	No	Due to the unique requirements of the building related to clear span, floor loading, manufacturing processes and acoustical constraints; there is very limited flexibility to consider alternative buildings systems. Thus a whole building Life-Cycle Analysis is not an effective tool. Team will focus on embodied carbon reduction through building material specification and procurement	SELECT		Carbon Leadership Forum LCA Practice Guide AIA-CLF Embodied Carbon Toolkit for Architects (particularly Part 2: Measuring Embodied Carbon)
	0 Use Environmental Product Declarations (EPDs) During Procurement Once a product type has been selected, ask manufacturers (via specifications and the bidding and procurement processes) to provide environmental product declarations (EPDs) of their products to help select the lowest-carbon option.	SELECT	SELECT		SELECT		Embodied Carbon in Construction Calculator (EC3) AIA-CLF Embodied Carbon Toolkit for Architects (particularly Part 2: Measuring Embodied Carbon)
	0 Discuss Whether to Integrate Carbon into the Bid Process Carbon can be evaluated alongside cost, schedule, and other criteria when selecting bids for materials to be used in construction. Alternatively, performance incentives can be provided to contractors who deliver low-embodied-carbon projects or suppliers that deliver materials below a certain carbon threshold. These strategies all require discussion early in the process between the owner, design team, and contractor	No	Yes	The CFS-3 project team will be integrating carbon considerations into the bid process by including requirements aligned with an additional exhibit outlining carbon reduction requirements in the bid package. Bids that do not address the carbon reduction exhibit will be marked incomplete.	SELECT		Steps to Develop a Low Carbon Procurement Policy (Incentives) Owners CAN Embodied Carbon Action Plan Microsoft Case Study
1 Build Less, Reuse More		Already included	Will pursue?		Achieved?		Learn More
	1 Reuse/Retrofit Existing Buildings Re-use or retrofit existing buildings instead of constructing a completely new building. Reductions in new square footage or new structure will translate directly to reductions in embodied carbon.	No	No	<i>This scenario is not applicable for CFS-3. There are no existing building on the CFS campus that can accommodate this program. A new purpose building must be provided to support the CFS-3 processes.</i>	SELECT	<i>Add a brief explanation as to whether and how the project incorporated this strategy. If the team intended to pursue this strategy but was not able to, provide insight as to why.</i>	
	1 Design for Disassembly and Reuse Maximize the reuse potential of building components by detailing connections that can be easily disassembled and reused in future buildings. Avoid lamination and adhesion in assemblies (such as composite decks or hybrid mass timber/concrete assemblies) that prevent deconstruction and reuse. Avoid materials that are difficult to recycle, and avoid coatings that could prevent recycling.	SELECT	SELECT		SELECT		Zero Net Carbon Collaboration Resources AIA's Retrofitting Existing Buildings Guide
	1 Select Salvaged or Refurbished Materials Reuse materials, such as those onsite or from other city properties, or purchase salvaged materials rather than new ones. Consider refurbishing items, such as furniture, instead of throwing them out and re-purchasing them.	SELECT	SELECT		SELECT		Where feasible, take advantage of past EC 'investments' by making use of previously-used building materials rather than newly-produced materials. (AIA, 2019 ; Carbon Leadership Forum Webinar Series, 2018)
2 Design Lighter and Smarter		Already included	Will pursue?		Achieved?		Learn More
	2 Reduce [New] Floor Area Identify opportunities for design and programmatic flexibility to minimize the amount of new floor area. Similar to material and building reuse, reducing new floor area translates to material savings (as well as cost savings) and reduces embodied carbon.	Yes	Yes	<i>The current design of CFS-3 was conceptualized and created with floor area in mind and does not include any more floor area than necessary for daily operations for the project. To address horizontal floor area, the project team opted for a multi floor office area, as to eliminate the need for additional material and land disruption. Building area for this project was limited to only that area which is required to enclose necessary process and necessary support operations of the CFS-3 building.</i>	SELECT	<i>Add a brief explanation as to whether and how the project incorporated this strategy. If the team intended to pursue this strategy but was not able to, provide insight as to why.</i>	

	2 Reduce Below-Grade Construction Reduce or eliminate below-grade parking or interior spaces. Subgrade construction requires a large amount of concrete (a carbon-intensive material) and releases soil carbon during excavation.		Yes	Yes	Grading of site was conceptualized and designed in order to minimize the amount of soil moved off site and was aimed to minimize site disruption to existing topography, given the length of the building and existing topography. Due to the existing sloping of the site, it is necessary that a portion of the project will be below grade. All excavation and subgrade areas will be limited to only that which is required. Along with topographical consideration, a parking deck was incorporated into the design to prioritize vertical construction and reduce the amount of disrupted land area. The majority of the parking levels will be constructed to stand above grade, reducing below-grade construction as much as possible.		SELECT		Canadian Architect, 2021
	2 Select Lighter Materials and Assemblies When possible, selecting lighter materials and assemblies for the structure and envelope systems can reduce the load on structural components (and therefore their size and embodied carbon). Consider lightening slabs through use of void systems, or using lighter structural materials like timber. In some cases, lighter structural loads may be decreased enough to allow for the preservation of an existing structure, unlocking additional carbon savings from building reuse.		SELECT	SELECT			SELECT		
	2 Design Structure for Material Efficiency Using less of a material to do the same work results in large carbon and cost savings. Structural design choices -- such as bay sizing, column and beam spacing, and member cross sections, as well as avoiding structural gymnastics (like cantilevers and transfer beams) -- can all reduce carbon.		SELECT	SELECT			SELECT		SE2050 Structural Engineering Commitment case studies Additional strategies may include using braced frames instead of moment-resisting frames, using lighter shapes like joists/trusses, lightening concrete slabs by using void systems, and "right-sizing" each steel member.
	3 Choose Finishes Carefully The total impact of interior finishes adds up significantly over time. Consider the expected turnover of the space you are designing and whether that matches up with the selected products. Architects and interior designers can collaborate to use salvaged materials and minimize the need for additional finishes where not required for functional performance, particularly in spaces with high occupant turnover and frequent interior fit-outs. These considerations should be included alongside toxicity, cost, and performance requirements when choosing finishes.		SELECT	SELECT			SELECT		Metropolis Magazine's Climate Toolkit for Interior Design CLF LCA of MEP Systems and Tenant Improvement
	3 Minimize Construction and Demolition Waste (Waste Prevention) Before construction, design in modules to minimize waste. During construction, adopt sorting and waste diversion practices on-site to minimize construction waste.		No	Yes	The CFS integrated design team (including the project contractor) has committed to minimizing waste through prefabrication of material and proper material handling and storage on site to avoid any contamination/damage leading to unnecessary waste. Additionally, there will be coordination meetings prior to various site activities to preidentify any feasibility issues and avoid any uninstal of new material.		SELECT		AIA 10 Steps to Reducing Embodied Carbon

3 Use Low-Carbon Alternatives: Substitute Low-Carbon Materials/Systems for High-Carbon Ones
3 Consider Total Carbon when Selecting Envelope Systems Use WBLCA (alongside energy modeling) to help assess the trade-offs in embodied and operational carbon for different envelope options. Typically, lightweight envelope systems are likely to have the lowest embodied carbon (in addition to reducing the embodied carbon of the supporting structure).
3 Select Carbon-Storing Structural, Envelope, and Finish Materials Bio-based materials typically have lower upfront carbon than non-bio-based products, with the added potential to store carbon over the life of the building. The availability of bio-based alternatives to conventional materials -- such as mass timber, laminated bamboo, wood fiberboard, straw, clay-straw, hempcrete, cork, wool, linoleum, cork, and more -- is increasing. Bio-based materials are also often significantly lighter than their alternatives, reducing the load and size of supporting structural members (and therefore reducing carbon).
3 Select Lower-Carbon Refrigerants Refrigerant leakage is one of the biggest contributors to climate change within the building industry. Architects can collaborate with engineers to use passive design strategies, select systems that use low-carbon refrigerants, and encourage clients to adopt building management practices to mitigate refrigerant leakage and ensure 100% refrigerant recovery.
3 Eliminate HFC-Containing Insulation and Select Lower-Carbon Insulation Selecting an insulation that balances operational and embodied carbon trade-offs is key to achieving a total carbon balance for building. Generally, plastic- and chemical-based insulation will have a much higher embodied carbon than bio-based materials. In particular, avoid specifying HFC-containing rigid polyurethane spray foam, sealants, and XPS products that are being banned or significantly restricted in Canada and a growing number of states in the US (including California).

Already included	Will pursue?	
SELECT	SELECT	Add a brief explanation here about how the project may incorporate this strategy into the project and any special considerations necessary
SELECT	SELECT	
SELECT	SELECT	
SELECT	SELECT	

Achieved?
SELECT Add a brief explanation as to whether and how the project incorporated this strategy. If the team intended to pursue this strategy but was not able to, provide insight as to why.
SELECT
SELECT
SELECT

Learn More
Builders for Climate Action's Zero Carbon Resources Buildings as Global Carbon Sinks WoodWorks Carbon Smart Materials Palette
Integral Group's Refrigerants & Environmental Impacts: A Best Practice Guide
HFC bans by region and end-use product (including foams and refrigerants) US EPA Substitutes in Foam Blowing Agents Building Enclosure: " New Climate Regulations Spell Changes for Building Products " (2020)

4 Procure Low(er)-Carbon Products: Specify and Source the Lowest Carbon Product Available

Already included	Will pursue?	
------------------	--------------	--

Achieved?

Learn More

4	Integrate Carbon Intensity Limits into Specifications At a minimum, architects can use template language to incorporate requests for EPDs into their specifications as a part of bid proposal submittals. For products where EPDs are more widely available, architects can integrate carbon intensity limits into performance requirements, requiring an EPD to document compliance with a global warming potential limit (e.g. XX kg CO2e / unit of material).
4	Use Performance-Based Concrete Specifications Use performance-based (rather than prescriptive) requirements for concrete design that is appropriate for each component/mix. If CMU is used in construction, use a specified compressive stress method instead of a prescriptive method to proportion grout mix.
4	Optimize Concrete Mix Design Work with structural engineers to optimize concrete design with strategies such as reducing cement volume, allowing for longer cure times by specifying strength at 56 days instead of 28 days to allow more time for strength gain, looking at carbon implications of higher-quality aggregate, or reducing strength requirements where feasible/appropriate. Minimizing portland cement and/or replacing portland cement with other materials -- such as Type 1L Cement or supplemental cementitious materials (fly ash, slag, etc.) -- also reduces embodied carbon.
4	Source from Lower-Carbon Facilities and Products Manufacturers vary in the sustainability of their facilities and sourcing practices. Two materials with the same performance may differ in their embodied carbon as a result of energy source (fuel type/electricity grid mix), plant energy efficiency, product design and material efficiency, or lower-carbon ingredient sourcing (through using recycled, bio-based, or local ingredients). Due to how products are specified and selected, EPDs are typically the best or only option for a project team to differentiate the carbon intensity of products from different facilities and manufacturers.
5	Source Climate-Smart Wood The full life cycle embodied carbon impacts and benefits of wood are difficult to quantify (and therefore difficult to optimize) because of complex supply chains and differing methods for calculating carbon benefits. Current strategies for optimizing wood sourcing include using reclaimed/salvaged wood, asking for chain-of-custody certificates or other supply chain transparency information, asking for sustainable forest management certifications (such as FSC or SFI), and specifying wood that is locally-harvested or harvested from working (not primary) forests. <i>(Note: An agreed-upon definition for climate-smart wood that can be used in procurement is still in development and should be included once available).</i>
5	Integrate Carbon into the Bid Process Evaluate carbon -- in addition to cost, schedule, and other criteria -- as an awarding criteria when selecting bids for materials to be used in construction. If points are used to differentiate bids, award points for low-carbon procurement. When possible, provide performance incentives to contractors who deliver low-embodied-carbon projects.

SELECT	SELECT	Add a brief explanation here about how the project may incorporate this strategy into the project and any special considerations necessary
SELECT	SELECT	
SELECT	SELECT	
SELECT	SELECT	
SELECT	SELECT	
SELECT	SELECT	

SELECT	Add a brief explanation as to whether and how the project incorporated this strategy. If the team intended to pursue this strategy but was not able to, provide insight as to why.
SELECT	
SELECT	
SELECT	
SELECT	
SELECT	

[Carbon Leadership Forum Material Baselines](#)
[ownersCAN Embodied Carbon Action Plan](#)
[ownersCAN ECAP Specification Matrix and Language](#)

[RMI Concrete Solutions Guide](#)[NRMCA Guide to Specifying](#)!

[Embodied Carbon in Construction Calculator \(EC3\)](#)
[Energy Star Industrial Plant Efficiency Program](#)
[Carbon Smart Materials Palette](#)

[Carbon Leadership Forum's Wood Carbon Seminars](#)
[Climate-Smart Forestry.org](#)

[Steps to Develop a Low Carbon Procurement Policy \(Incentives\)](#)
[OwnersCAN Embodied Carbon Action Plan](#)
[Microsoft Case Study](#)

Attachment L: USGBC – LEED v.4 Green Rating System Project Checklist



LEED v4 for BD+C: New Construction and Major Renovation

Project Checklist

Project Name: CFS - 3

Date: 10/17/2025

Y ? N

1			Credit	Integrative Process	1
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1	3	28	Location and Transportation		16
		16	Credit	LEED for Neighborhood Development Location	16
		1	Credit	Sensitive Land Protection	1
		2	Credit	High Priority Site	2
	1	4	Credit	Surrounding Density and Diverse Uses	5
	1	4	Credit	Access to Quality Transit	5
		1	Credit	Bicycle Facilities	1
1			Credit	Reduced Parking Footprint	1
	1		Credit	Green Vehicles	1

5	2	3	Sustainable Sites		10
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit	Site Assessment	1
	1	1	Credit	Site Development - Protect or Restore Habitat	2
		1	Credit	Open Space	1
1	1	1	Credit	Rainwater Management	3
2			Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1

3	4	4	Water Efficiency		11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
	1	1	Credit	Outdoor Water Use Reduction	2
3	3		Credit	Indoor Water Use Reduction	6
		2	Credit	Cooling Tower Water Use	2
		1	Credit	Water Metering	1

0	0	0	Energy and Atmosphere		33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
			Credit	Enhanced Commissioning	6
			Credit	Optimize Energy Performance	18
			Credit	Advanced Energy Metering	1
			Credit	Demand Response	2
			Credit	Renewable Energy Production	3
			Credit	Enhanced Refrigerant Management	1
			Credit	Green Power and Carbon Offsets	2

0	0	0	Materials and Resources		13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
			Credit	Building Life-Cycle Impact Reduction	5
			Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
			Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
			Credit	Building Product Disclosure and Optimization - Material Ingredients	2
			Credit	Construction and Demolition Waste Management	2

0	0	0	Indoor Environmental Quality		16
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
			Credit	Enhanced Indoor Air Quality Strategies	2
			Credit	Low-Emitting Materials	3
			Credit	Construction Indoor Air Quality Management Plan	1
			Credit	Indoor Air Quality Assessment	2
			Credit	Thermal Comfort	1
			Credit	Interior Lighting	2
			Credit	Daylight	3
			Credit	Quality Views	1
			Credit	Acoustic Performance	1

0	0	0	Innovation		6
			Credit	Innovation	5
			Credit	LEED Accredited Professional	1

0	0	0	Regional Priority		4
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1

10	9	35	TOTALS		Possible Points:	110
Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110						

Attachment M: Landscape Maintenance Memo



Landscape Maintenance Memorandum

CFS Building 3

125 Hospital Road

Devens MA

October 23, 2025



Landscape Maintenance Plan

Introduction

The Owner will provide for landscape maintenance from an experienced local American Association of Nurserymen (AAN) certified nursery business capable of performing the work outlined herein. Maintenance will begin immediately after final approval and acceptance of the landscaping by the Owner's representative.

The area to be maintained under the terms of this contract include all lawns, groundcover, perennial, grasses, and shrub beds, and tree planting within the Owner's property. Landscape maintenance shall include all necessary watering, cultivation, weeding, pruning, wound dressing, disease and insect pest control, replacement of dead plant material (labor only), straightening plants which lean or sag, adjustments of plants which settle, mowing of turf areas, replacement of mulch that has been displaced by erosion, repairing water rings or saucers, and repair of soil erosion by reseeding or replanting affected areas.

Plant disease problems shall be treated following Best Management Practices. Insect infestations shall be treated using Integrated Pest Management practices.

Remove all rubbish and waste used in the execution of the contract at the end of each work day.

During the initial one-year plant guarantee period, any replacement of plant material shall be the responsibility of the general contractor under the original construction contract for the facility. After the lapse of the initial one-year guarantee period, dead plants shall be replaced at the expense of the Owner. Determination of trees to be replaced will be made by an Owner representative. Acceptable trees shall have less than 25% dead branches and branch tips, and shall bear foliage of normal density, size, and color. All plants replaced during the initial one-year plant guarantee period shall be guaranteed for one additional year and their condition reviewed at the end of that year.

Maintenance Operations

Watering and Water Management

To eliminate water consumption for irrigation and meet sustainability goals, a permanent irrigation system is not proposed for the CFS-3 project area. Native plants accustomed to the local climate and rainfall will be utilized.

Temporary irrigation will be provided for one to two years in order to establish the new plant material. The temporary irrigation system shall be used by the maintenance contractor for the establishment watering program, but any failure of the system does not eliminate the Contractor's responsibility of maintaining the desired level of moisture necessary to maintain vigorous, healthy growth. Report irrigation system problems to the Owner's maintenance department immediately.

On-site water for temporary irrigation shall be furnished by the Owner through use of the Devens water system. Hose and other watering equipment shall be furnished by the Contractor.

Note that the Central Campus Green shall be irrigated from the CFS-1 parcel, submitted by others. The north half of the Central Campus Green falls within the CFS-3 project boundary. Irrigation shall be extended from CFS-1 to provide coverage for the entire Campus Green in order to ensure uniformity of appearance at this important campus space.

Weed Control

Maintenance contractor shall monitor all lawn and planting areas for weeds and undesirable grasses. If results of the scouting and monitoring program indicate areas exceed thresholds identified in the project specifications, appropriate controls shall be implemented to address the specific infestation. The identified problem shall first be addressed through the implementation of suitable cultural controls. Generally speaking, the cultural controls will likely result in the least impacts to any adjacent environmentally-sensitive areas.

Cultural controls are mechanical practices that can often provide effective treatment of weed, disease and pest outbreaks. The cultural controls that shall be utilized for lawn areas are summarized below:

- Remove clippings, fallen leaves/limbs and other debris from turf areas
- Minimize shading and optimize air circulation of turf areas
- Hand eradicate outbreaks of weeds when practicable
- Maintain proper soil moisture levels and avoid over watering
- Set mowing heights appropriately for each season
- Increase mowing heights to relieve turf stress as necessary
- Adjust mowing frequency to relieve turf stress as necessary
- When appropriate, apply top dressing following aeration

The application of chemicals to maintained lawn areas shall follow the guidelines below. These controls shall only be utilized if the cultural measures presented above are not effective in treating a particular weed, disease, or pest infestation.

Guidelines for pesticides, herbicides and fungicides are as follows:

- Only use when action thresholds have been exceeded
- Confirm identity of outbreak requiring treatment
- Use organic/environmentally sensitive products when feasible
- Use target specific products
- Calibrate application equipment (sprayer/spreader) prior to use
- Apply to target areas only
- Minimize drift by limiting applications to periods when winds are 5 mph or less

Disease and Insect Pest Control

Inspect all plant material to locate any disease or insect pest infestations on a regular basis. Upon the discovery of any disease or insect pest infestation, identify, or have identified, the nature or species of the infestation. Report this condition to the Owner's maintenance department immediately. A method of control in accordance with common Integrated Pest Management standards shall be immediately implemented.

Fertilizing

Maintenance Contractor is to conduct yearly soil tests at various locations on the lawn to test for plant nutrients and pH. Soil should be amended with a liming, and/or a fertilizer mix at a rate of application as indicated by the soil test.

Fertilization should also be based on visual assessment, as indicated below (i.e. yellowing may indicate nitrogen deficiency, a dark blue-green color and excessive thatch indicate excessive nitrogen.)

Fertilize established turf with a slow release fertilizer.

Fertilize trees and shrubs only if visual assessments and soil tests indicate that it is necessary. Soil should be amended with a fertilizer mix at a rate of application as indicated by the soil test. Follow manufacturer's instructions.

Guidelines for fertilizers are as follows:

- Perform soil nutrient testing at regular intervals
- Use organic/environmentally-sensitive blends when feasible
- Regulate application of nitrogen to optimize turf vigor
- Use slow release nitrogen when possible
- Avoid over application of nitrogen and phosphorus

Liming

Maintenance contractor is to conduct yearly soil tests at various locations on the lawn to determine the pH of the soil. Soil should be kept between pH 6.0 and 7.0. When pH falls below 6.0 the Contractor shall add lime at a rate indicated by the soil test.

Pruning and Repair

The amount of pruning shall be limited to the minimum necessary to remove dead, diseased, or injured branches or to maintain safety in vehicular use areas. Pruning shall be done in such a manner as to not change the natural habit or shape of the plant. All cuts shall be to the branch collar. Do not cut flush with trunk.

Comply with pruning standards in the American National Standards Institute, (ANSI).

Repair eroded lawn areas by loaming, aerating, over-seeding, or topdressing, as needed.

Mowing

Mow at regular intervals to maintain grass height.

Observation of heavily clumped grass clippings is a sign of a too infrequent mowing schedule. The maintenance contractor shall increase the number of mowings to prevent this.

Reduce frequency of lawn mowing during the summer dormant season and periods of stress from drought.

Lawn mower blades shall be kept sharp at all times. Mowing pattern shall be alternated weekly to keep grass blades erect and assure an even cut. Leave light accumulations on the lawn. Remove heavy accumulations of clippings and dispose of off site.

Mow lawns in such a manner as to prevent clippings from blowing onto paved areas and walks. Clean-up after mowing shall include sweeping or blowing paved areas.

Mulching

Mulch for planting bed areas shall be natural, un-dyed, composted double shredded hardwood mulch. Mulch for reforestation plantings shall be leaf mold.

Maintenance contractor shall maintain a bed of mulch in shrub beds and around trees. Mulch shall be 100% organic, composted for a minimum of 6 months, having a maximum moisture content of 40%, and free of any disease and insects. Mulch shall not be placed against root flares of shrubs or trees. Apply mulch yearly or as necessary to replace decomposed mulch. Mulch depth should not exceed 3".

Guying

Maintenance contractor shall adjust tree guys on new trees as necessary to prevent stem injury. Remove all stakes, guys, tree wrap, and rubber hose collars one year after planting.

Sweeping/Raking

Maintenance contractor shall sweep paved surfaces to keep them clean of dirt, sand, litter, and other debris. Lawns and shrub areas shall be raked to remove leaf litter and trash.



Maintenance Task Schedule

March (Weather Permitting)

- Clean up all winter debris, sand, leaves, trash, etc.
- Re-edge mulch beds.
- Prune all dead, broken, and storm damaged branches on trees and shrubs.
- Aerate, over-seed, and top-dress turf with compost, if necessary.
- De-thatch.

April

- Re-seed or sod all bare or thin grass areas.
- Test soil in turf areas for pH and fertility.
- Re-mulch beds, trees, and planted areas as necessary.
- Fertilize turf, if required by test results.
- Lime, if required by test results.
- Start mowing.

May

- Mow.
- Weed as necessary.
- Check for disease and pest problems in both turf and plants.
- Irrigation system startup.

June

- Mow.
- Fertilize turf, if necessary.
- Monitor operation of the irrigation system.
- Weed plant beds and median islands.
- Check for disease and pest problems in both turf and plants; treat immediately if necessary.
- Prune shrubs after flowering.

July - August

- Mow.
- Check for disease, pest and weed problems. Treat as necessary.
- Monitor operation of the irrigation system.
- Prune shrubs.
- Weed plant beds and median islands

September

- Re-seed bare or thin lawn areas.
- Mow.
- Fertilize turf and groundcover/shrub areas with a fertilizer designed for fall season application.
- Monitor operation of the irrigation system.
- Check for disease problems. Treat as necessary using approved.

October

- Mow.
- Clean up leaves, trash. etc.
- Irrigation system shut down.

November

- Final mowing.
- De-thatch lawn areas, if necessary.
- Prune trees and shrubs, if necessary.
- Prune trees adjacent to building to keep plant materials right sized at these locations.
- Final clean-up of leaves and trash.

December, January and February

- Develop schedule, order lawn supplies.
- Prune storm-damaged trees as needed.
- Remove trash as needed.

- Apply wilt-pruf antidessicant to evergreen shrubs.
- Cut off bagworm cocoons.

Meadow/Grass/Wetland Seed Mixes

1. Site Preparation: Site to be covered with black plastic for a whole growing season and may also be covered with thick layers of leaves and grass clippings.
2. Sowing or Planting: Sow in spring or early summer.
3. Post Planting Management:
 - a. Weed Control: A monthly program of weed control should be established. Weeds should be eliminated as soon as they can be recognized, either by pulling, spot-spraying with a general herbicide, or selective cutting with a string trimmer.
 - b. Supplemental Watering: In moist conditions, regular rainfall may make supplemental watering unnecessary. In dry conditions, up to 1/2 inch of supplemental water per week may be required.
 - c. Fertilization: Apply fertilizers at rates indicated in soil test, as necessary. If soil fertility is very low, a low nitrogen fertilizer can be used, or add organic matter.
 - d. Mulching: Any mulch applied to meadow/wetland or native planting areas shall be leaf mold.
 - e. Maintenance:
 - i. Equipment - A flail-type mower is preferred for meadow maintenance as it can mow above the terminal tips of young desired plants as it shreds the cut material and disperses it gently on top of the vegetation. Attachments can be purchased for most riding lawnmowers that allow mowing at 6" height if the meadow is of a larger scale and too large for a string.
 - ii. First Season –
 - a. Monitor plants for invasive species.
 - b. Mow to a height of 4- 6" every 4 to 6 weeks to control annual nonnative and invasive species early in the growing season. Mowing should be conducted prior to weed seed production. Mowing height and timing may need to be adjusted per target species.
 - c. Debris and litter shall be removed from the native areas and storm structures shall be inspected and maintained as necessary.
 - d. Discontinue mowing at the end of the growing season (late October/early November) as plant growth slows
 - iii. Second Season –
 - a. Mow meadow vegetation to the ground annually, either in late winter or early spring, before next year's growth begins. Early spring mowing is preferable as it preserves wildlife habitat during the winter.

- b. Monitor for invasive plants and weeds all season long. Prevent the establishment of biennial and perennial weeds.
 - c. Avoid mowing the meadow stand during bird nesting season to prevent injury to young nesting ground birds. Cease mowing by the end of April and refrain from mowing until late-July.
 - f. Fall Mowing and Cleanup: In some areas closer to the building, a maintained look may be desired during the winter. Mow to a height of four to six inches after the wildflowers have gone to seed. In the third and future years, mow close to the ground. This should be done in late fall, removing the debris from mowing.
4. Reseeding:
- a. Perennial plantings should be reseeded if there are bare spots. In the fall, remove dead seed stalks and excessive plant material by mowing or cutting to a height of 4 to 6 inches. This will allow the reseeding of any viable seeds.
 - b. Fall reseeding should be late enough so that seeds do not germinate until spring. Spring reseeding should be completed as soon as the ground is workable and after the last killing frost.

Erosion Control Seed Mixes

1. Site Preparation: Site to be covered with black plastic for a whole growing season and may also be covered with thick layers of leaves and grass clippings.
2. Sowing or Planting: Sow in spring or early summer.
3. Post Planting Management:
 - a. Weed Control: A monthly program of weed control should be established. Weeds should be eliminated as soon as they can be recognized, either by pulling, spot-spraying with a general herbicide, or selective cutting with a string trimmer.
 - b. Supplemental Watering: In moist conditions, regular rainfall may make supplemental watering unnecessary. In dry conditions, up to 1/2 inch of supplemental water per week may be required.
 - c. Fertilization: Apply fertilizers at rates indicated in soil test, as necessary. If soil fertility is very low, a low nitrogen fertilizer can be used, or add organic matter.
 - d. Mulching: Any mulch applied to seed mix planting areas shall be leaf mold.
 - e. Maintenance:
 - i. The erosion control seed mix is intended to stabilize slopes between 2:1 and 3:1, and therefore mowing will not be part of the ongoing maintenance. The maintenance plan allows for secondary succession.
 - ii. First Season –
 - a. Monitor plants for invasive species.

- b. Weeds should be eliminated as soon as they can be recognized, either by pulling, spot-spraying with a general herbicide, or selective cutting with a string trimmer.
 - iii. Second Season and beyond -
 - a. Mow vegetation to the ground annually, either in late winter or early spring, before next year's growth begins. Early spring mowing is preferable as it preserves wildlife habitat during the winter.
- 4. Reseeding:
 - a. Perennial plantings should be reseeded if there are bare spots. In the fall, remove dead seed stalks and excessive plant material by mowing or cutting to a height of 4 to 6 inches. This will allow the reseeded of any viable seeds.
 - b. Fall reseeded should be late enough so that seeds do not germinate until spring. Spring reseeded should be completed as soon as the ground is workable and after the last killing frost.

Maintenance Report

Maintenance contractor shall provide a schedule and report to the Owner's maintenance department that details his planned maintenance activities and schedule including any subcontractors.