



Town of Truro New Public Works Facility



Update Presentation
August 25, 2023

Town of Truro
New Public Works Facility

Overview of Weston & Sampson

Town of Truro

New Public Works Facility

About Weston & Sampson



SINCE
1899

120+ years in business



Interdisciplinary design,
engineering, and
environmental services



Over 750 professional staff



Offices along the East Coast



Town of Truro New Public Works Facility

Weston & Sampson Facilities (FAC) Program

- Thirty-six (36) staff – 90% of our work is dedicated to Public Works Facility Planning, Design, and Construction Administration
 - Twenty-three (23) Architects
 - Twelve (12) Engineers
 - Includes six (6) Industrial Equipment Engineers
 - One (1) Administrative Assistant



Town of Truro New Public Works Facility

Qualifications

- Experience with more than 150 DPW Facilities in New England
- Extensive DPW Facility Experience on Cape Cod
 - Yarmouth DPW (constructed)
 - Orleans DPW (constructed)
 - Bourne DPW (constructed)
 - Chatham DPW (constructed)
 - Sandwich DPW (feasibility study)
 - Provincetown DPW (feasibility study)
 - Mashpee DPW (feasibility study)
 - Experience with previous employer including Dennis DPW and Falmouth DPW facilities (constructed)
- Operationally based programming / planning approach
- Industry experts specializing in the programming and design of industrial support operations (vehicle maintenance, workshops, wash bay, salt sheds, etc.)



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High-Level Recap of the Feasibility Study

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Project Summary / Timeline

- Initial Feasibility Study completed in June 2019
 - Programming
 - Site selection
 - Cost estimate
- Initial Select Board presentation of feasibility study in December 2019
- Follow up Select Board / update presentations to address questions / comments
 - February 2020
 - February 2022
 - March 2023
- Modified/reduced building program based on input from the Town
- Responded to numerous project inquiries

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Proposed Program

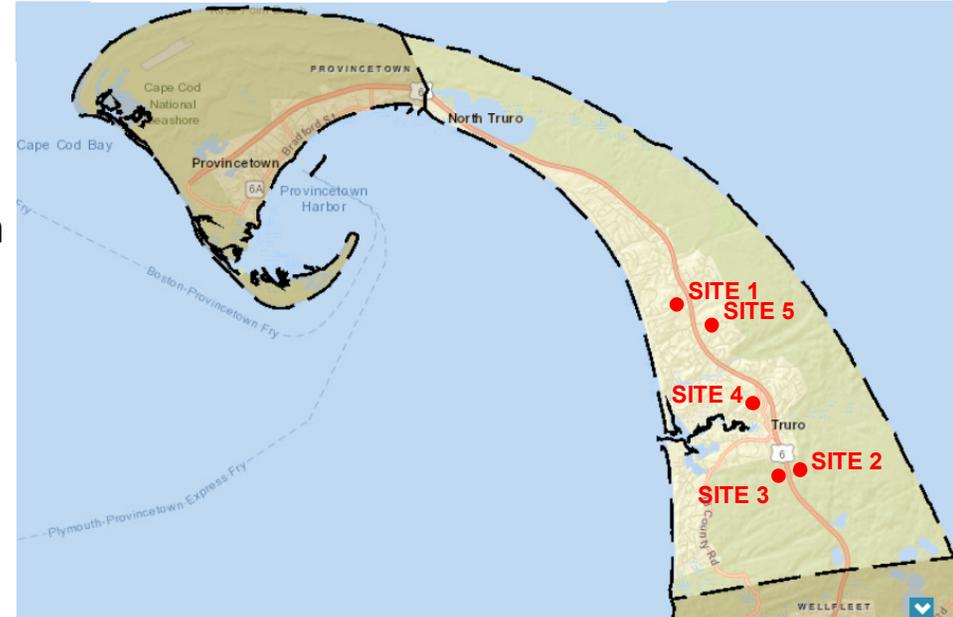
<u>Space Needs Assessment</u>	<u>Initial Needs</u>	<u>Rev 1</u>	<u>Rev 2</u>
• Office / Office Support	2,035 SF	1,525 SF	1,300 SF
• Employee Facilities	2,144 SF	1,936 SF	1,700 SF
• Workshops	3,929 SF	3,192 SF	2,900 SF
• Vehicle Maintenance	7,279 SF	5,532 SF	5,400 SF
• Wash Bay	1,750 SF	1,350 SF	1,350 SF
• Vehicle & Equipment Storage	19,551 SF	18,953 SF	16,958 SF
Subtotal:	36,689 SF	32,487 SF	29,608 SF
		11.5% Reduction	19.3% Reduction

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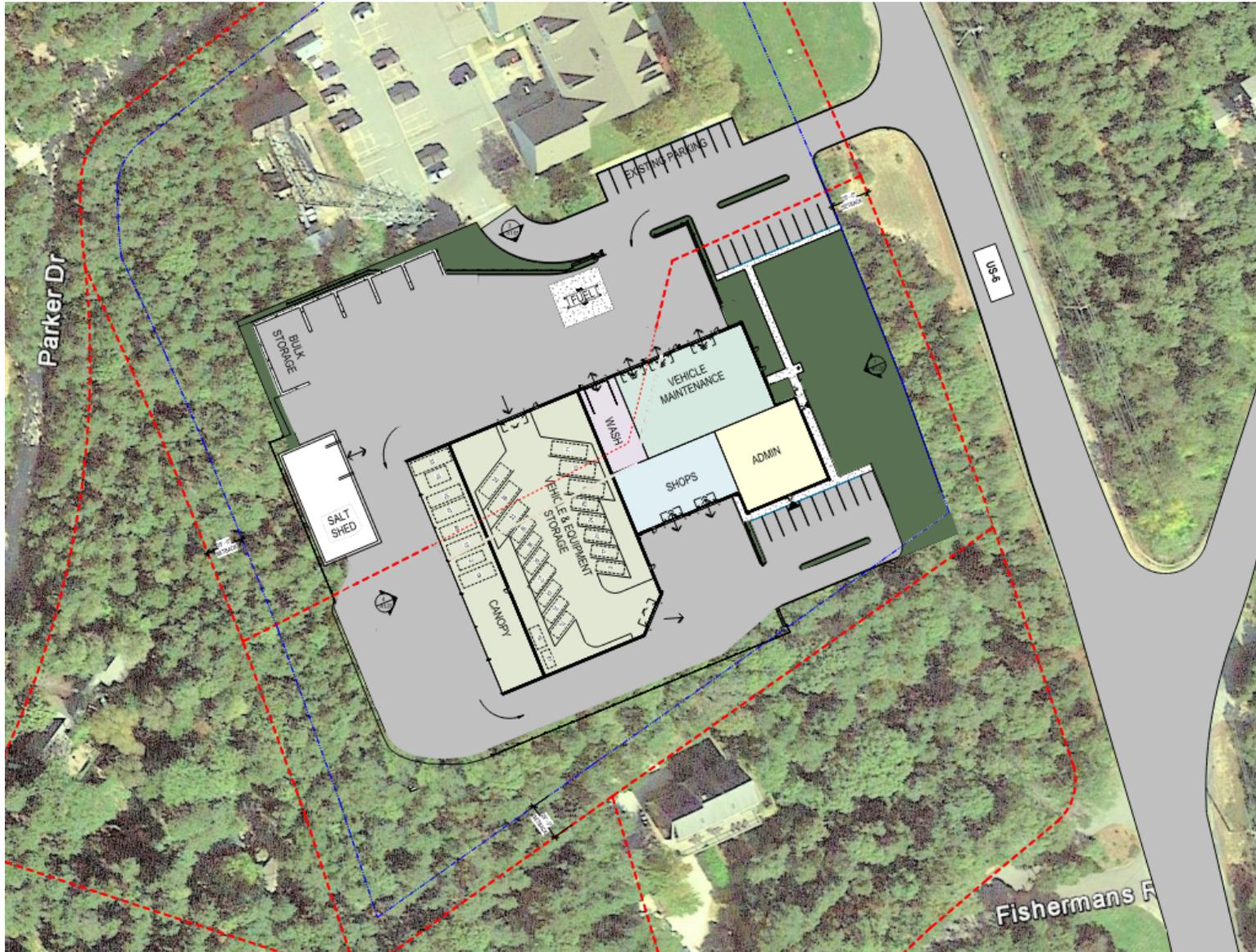
Site Selection Process

- Evaluated numerous sites
 - **Site 1** – 340/344 Route 6 (Town owned)
 - **Site 2** – 5 Town Dump Road Transfer Station (Town owned)
 - **Site 3** – Lot 104 Route 6 Adjacent State Parcel (State owned)
 - **Site 4** – 24 Town Hall Road Existing DPW Site (Town owned)
 - **Site 5** – Walsh Way (Town owned)
 - **Site 6** – 23 Sand Pit – Noons Property (Private)
- Results of test fits scenarios and subsequent site development cost comparisons were prepared and presented to the Town
- Select Board recently selected **Site 1 – 340/344 Route 6** property for the new DPW facility (adjacent to Public Safety Facility)



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Selected Site - 340/344 Route 6



Conceptual Site Plan

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Acknowledgement

We appreciate and value input from Town leaders and residents as demonstrated by the value engineering efforts that have been undertaken since the initial study was completed. We will continue to work with the Town to refine the proposed plan to meet the overall operational needs of DPW while balancing the overall financial needs of the project with Town's fiscal plans.

The plans that have been developed as part of the feasibility study are conceptual in nature for the purpose of evaluating sites. The building and site design will go through a comprehensive design process in the next phase to further refine the plan to create the most cost effective and efficient DPW facility for the selected site. This includes seeking and incorporating input from the Town, including a building committee made up of residents, throughout the design process.

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**High-Level Review of letter from
Dickinson Development**

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Project Comments & Responses

- *Do not condition (A/C) all areas of the multi-purpose structure*
 - Only the office and employee facilities space is proposed to be conditioned (A/C) which is approximately 10% of the overall building
 - *Remaining occupied areas have heat and code required ventilation*
 - *Vehicle / equipment storage areas have minimal heat (45 degree F) and code required ventilation*
- *Use "greenhouse" type structures for unconditioned space*
 - This creates significant moisture problems within the structure based on discussions with communities that have used these structures for DPW operations
- *Store and wash vehicles outdoors*
 - Exterior knockdown/rinsing is allowed but no high pressure / detergent washing is allowed per MADEP
 - Numerous issues with cold storage of equipment as presented in the February 08, 2022 presentation

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Impacts associated with outdoor/cold storage:

- **Vehicle warm-up times will be increased dramatically** resulting in an increase in non-productive labor. It is estimated that the warm-up time will be increased by 15 to 20 minutes per vehicle each day based on actual field tests.
- Any vehicle with a water source will need to be drained and filled each day resulting in an increase in non-productive labor.
- Condensate in air tanks for the vehicle compressed **air braking systems can freeze** requiring the tanks to be defrosted prior to operating.
- Specialty equipment requiring heated storage will not function properly (e.g. emulsion pothole repair equipment, etc.).
- Excess wash water will freeze which can potentially damage vehicle parts such as salt/sand conveyor belts.
- Cold storage results in the **hydraulic oil becoming more viscous**. This overstresses hydraulic pumps which in turn damages or reduces the life expectancy of the pumps.
- Cold storage reduces the flexibility of the hydraulic hoses. Rigid hoses coupled with viscous hydraulic oil increases the **potential for damaged or broken hydraulic hoses**.
- Increase in response times due to no start conditions and increased warm-up periods.
- **Snowpack on vehicles will not melt**. This requires vehicles to be “defrosted” before vehicles are placed back into service or before maintenance activities can be performed.
- **Salt/Sand product in spreader bodies will freeze which can damage the spreader system**. This will require all salt/sand product to be loaded or unloaded each day.
- Cold storage results in diesel fuel becoming more viscous. This contributes to **no-start conditions as well as generates an excessive amount of exhaust** due to incomplete combustion of the fuel source.

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Why put the vehicles and equipment indoors.....



Vehicle starting when stored outdoors

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Project Comments & Responses

- *Build the DPW in phases*
 - Building in phases is an option but typically costs more due to construction pricing escalation
- *Design for solar rooftops and backup power*
 - Weston & Sampson has included these features in the proposed plan which are standard in our designs of DPW facilities



Wayland DPW



Hopkinton DPW



Medford DPW

- *Use local contractors to save money*
 - This is a public project and must follow Massachusetts procurement laws which include bidding in accordance with M.G.L c 149 which will require DCAMM certified contractors (general contractors and filed sub-bidders)

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**High-Level Review of the DPW
Campus Design Prepared by the
Residents DPW Study Group**

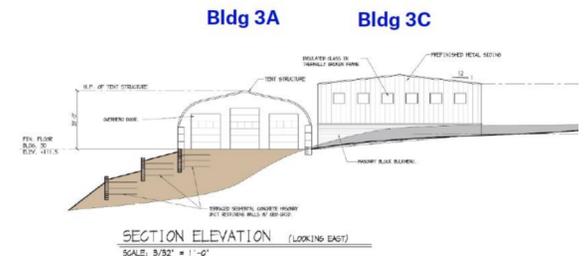
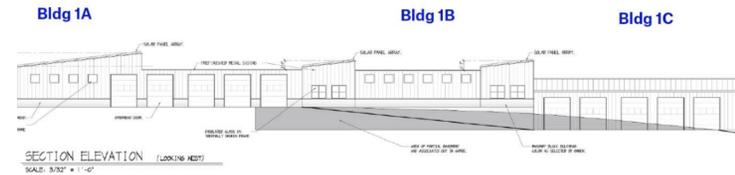
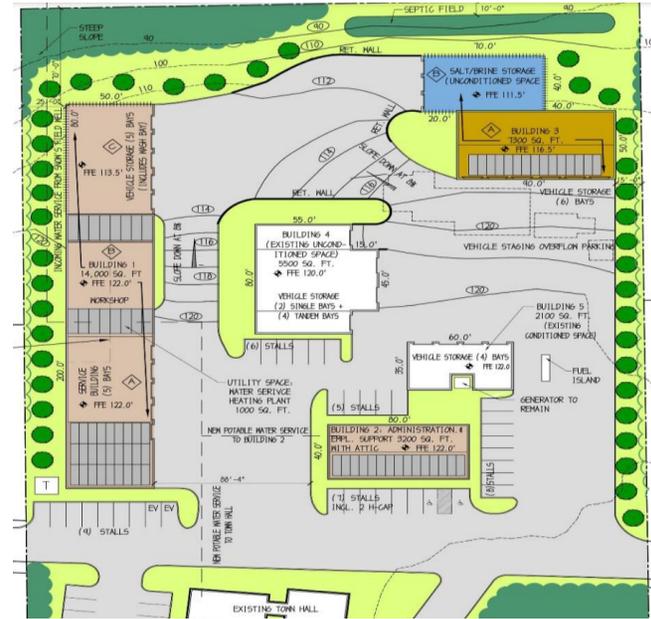
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Resident DPW Study Group Concept

Petition literature states:

- *Better, bigger, cheaper, safer, greener, and faster to implement than the one approved by the SB at the Rt. 6 Public Safety Facility.*
- *It will provide everything requested in a new facility at HALF THE COST, 10% more space, increased beneficial environmental and energy applications,*
- *AND.... Construction can start immediately upon adoption of this article and be completed within two years. The Town anticipates delays of 5-7 years if the Rt. 6 Public Safety Facility is used,*

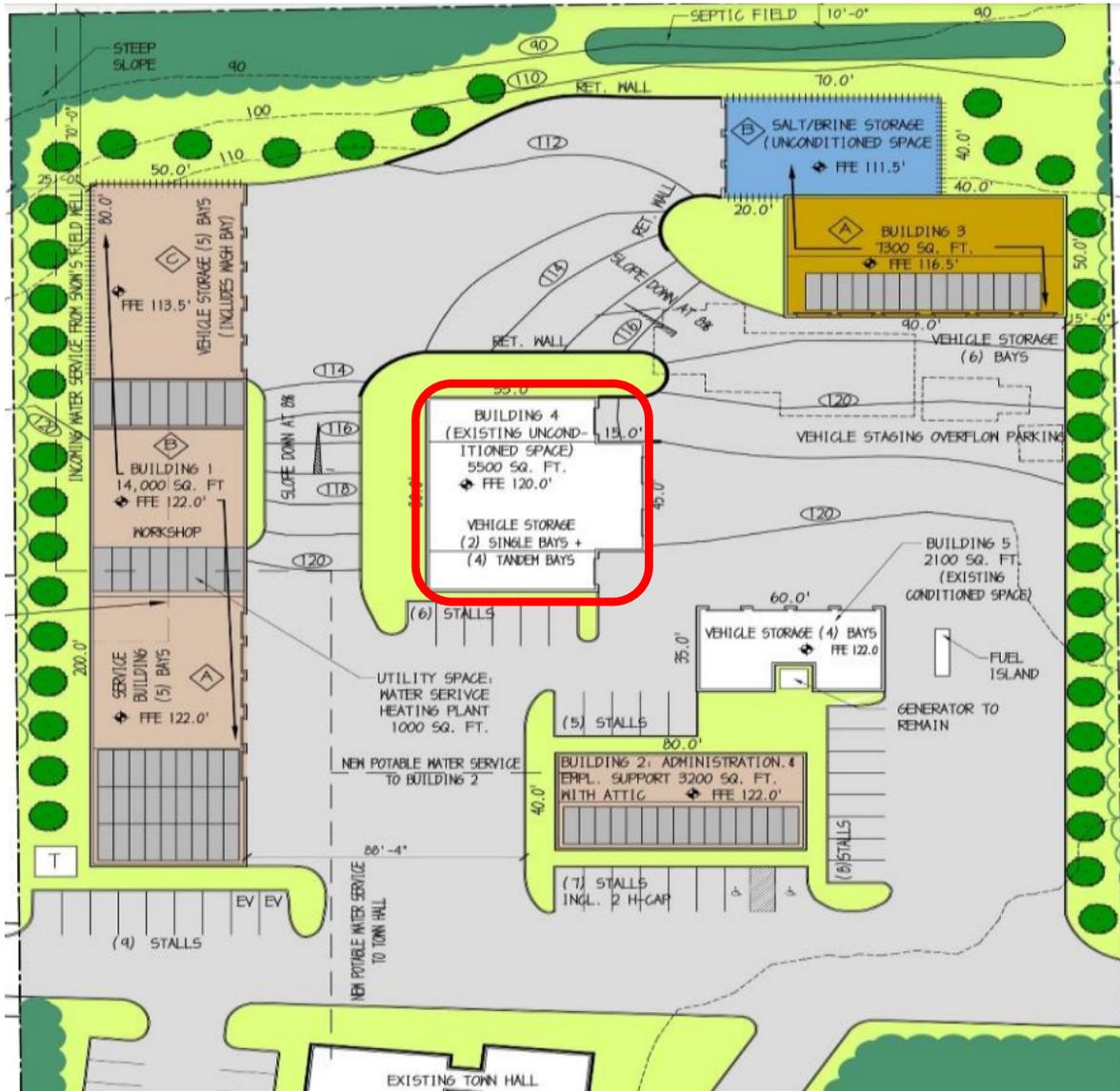
DPW Campus at Town Hall Site
(Prepared by Resident DPW Study Group)



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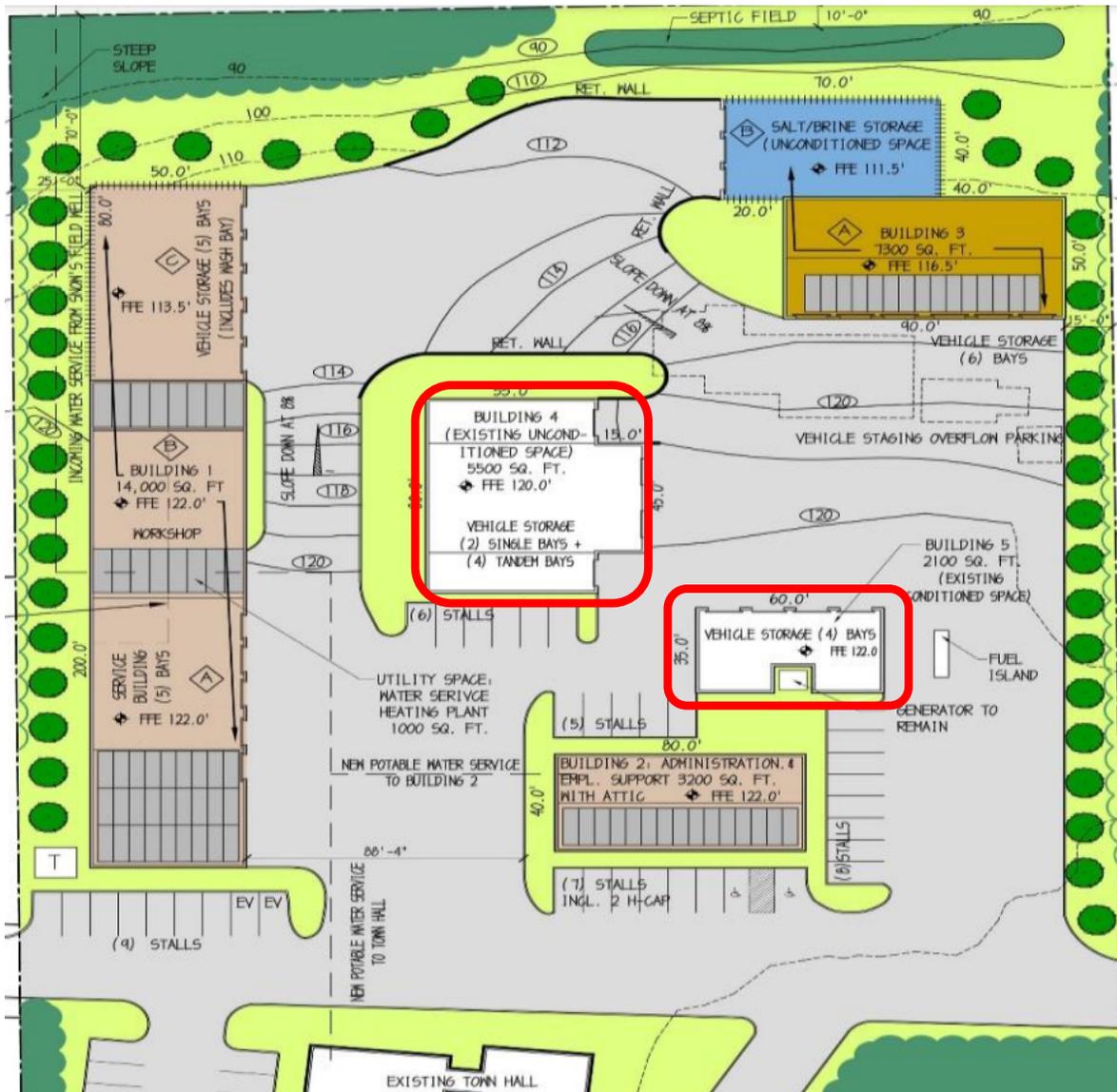
Proposed Site Operational Considerations

- Use of existing old buildings is a short-term solution due to age and condition of existing structures
- Existing DPW buildings on site are 50 – 70 years old
- Change in use will require code upgrades (sprinkler, egress, life safety, etc.)



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Proposed Site Operational Considerations

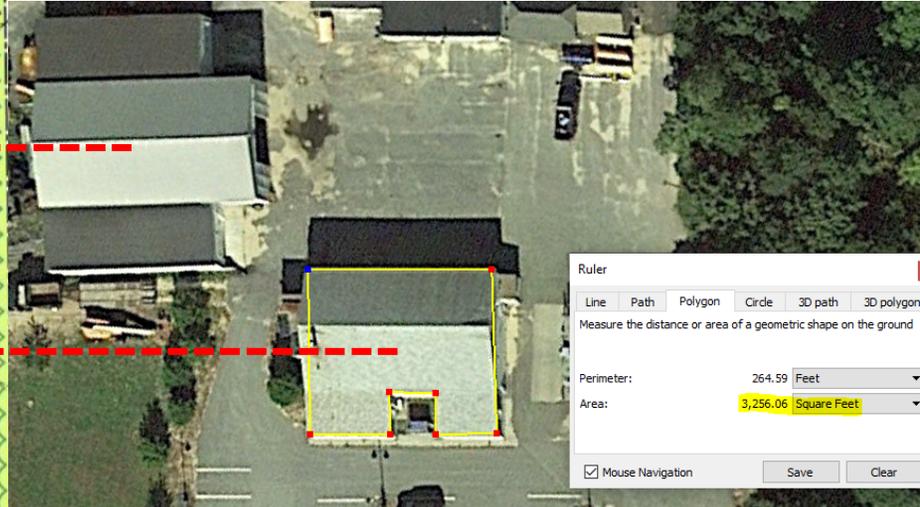
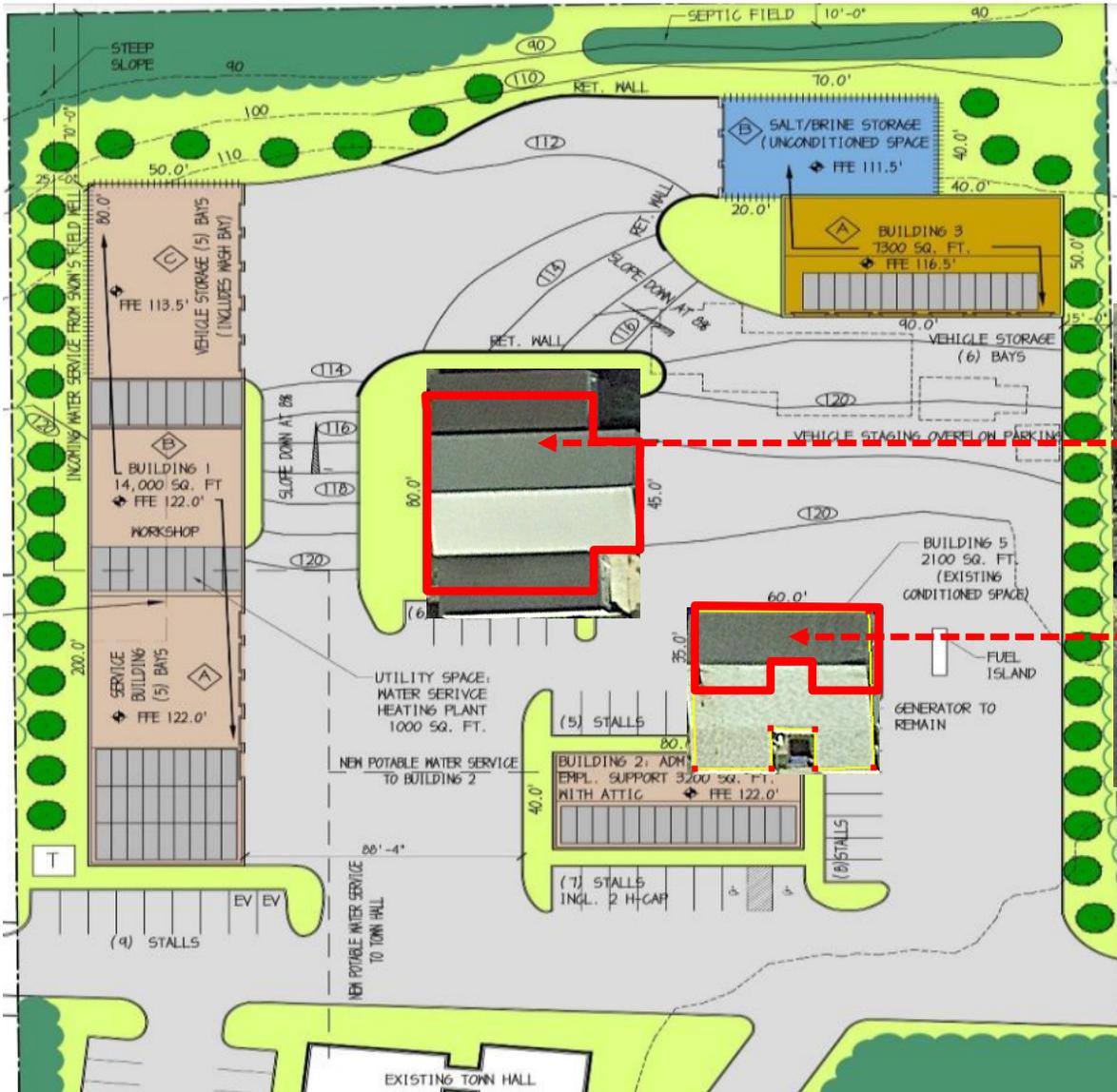


- Use of existing old buildings is a short-term solution.
- Any renovations will likely trigger more significant code required upgrades based on IEBC
 - ADA
 - Seismic
 - Life safety
- Existing 5,500 SF building will require sprinkler per IBC
- Buildings should be renovated to include code required ventilation and gas detection (CO) systems as a minimum

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Proposed Site Operational Considerations

- Note - Building 4 & 5 are not shown correctly on the plan (shown too small)

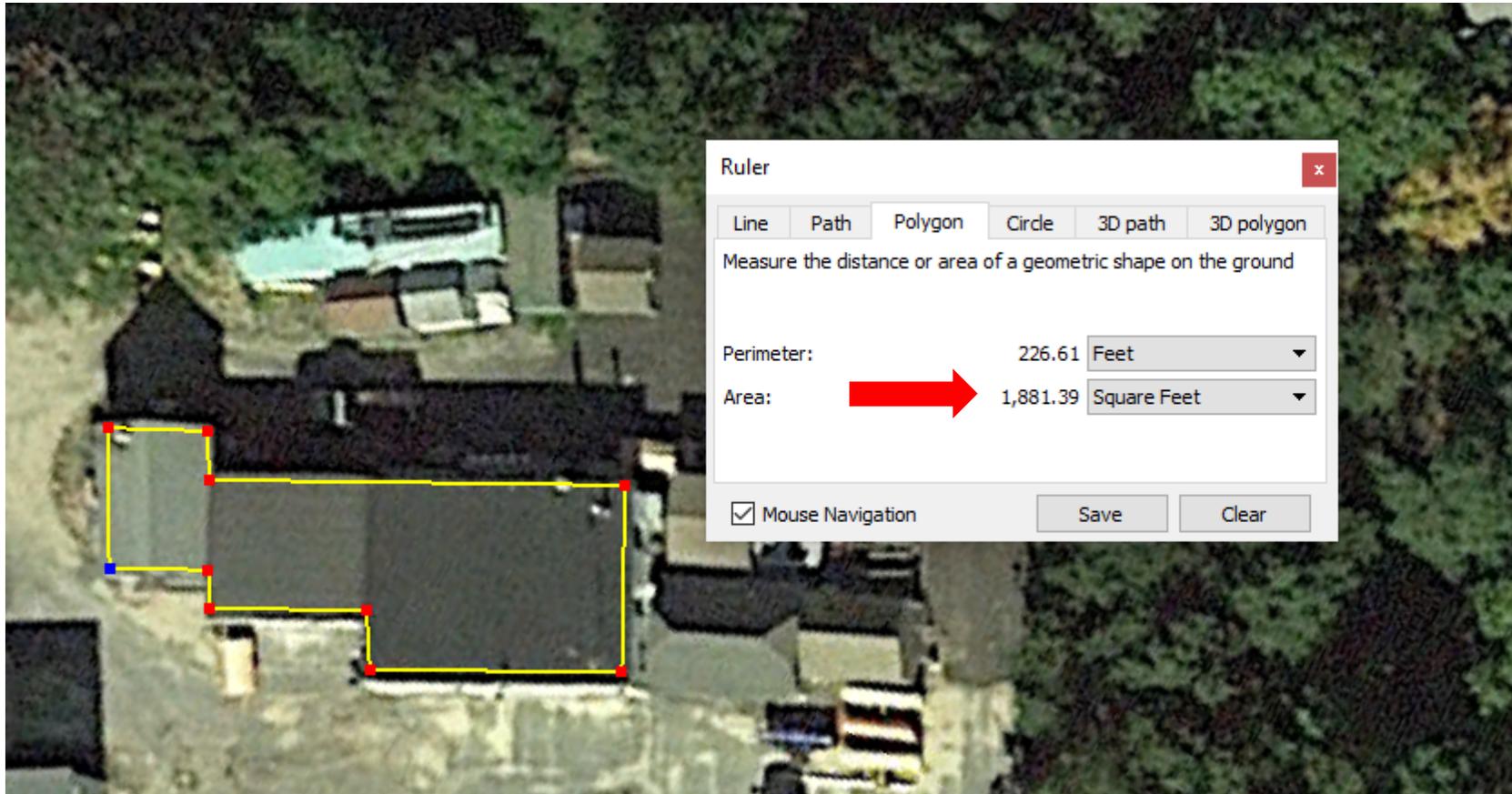


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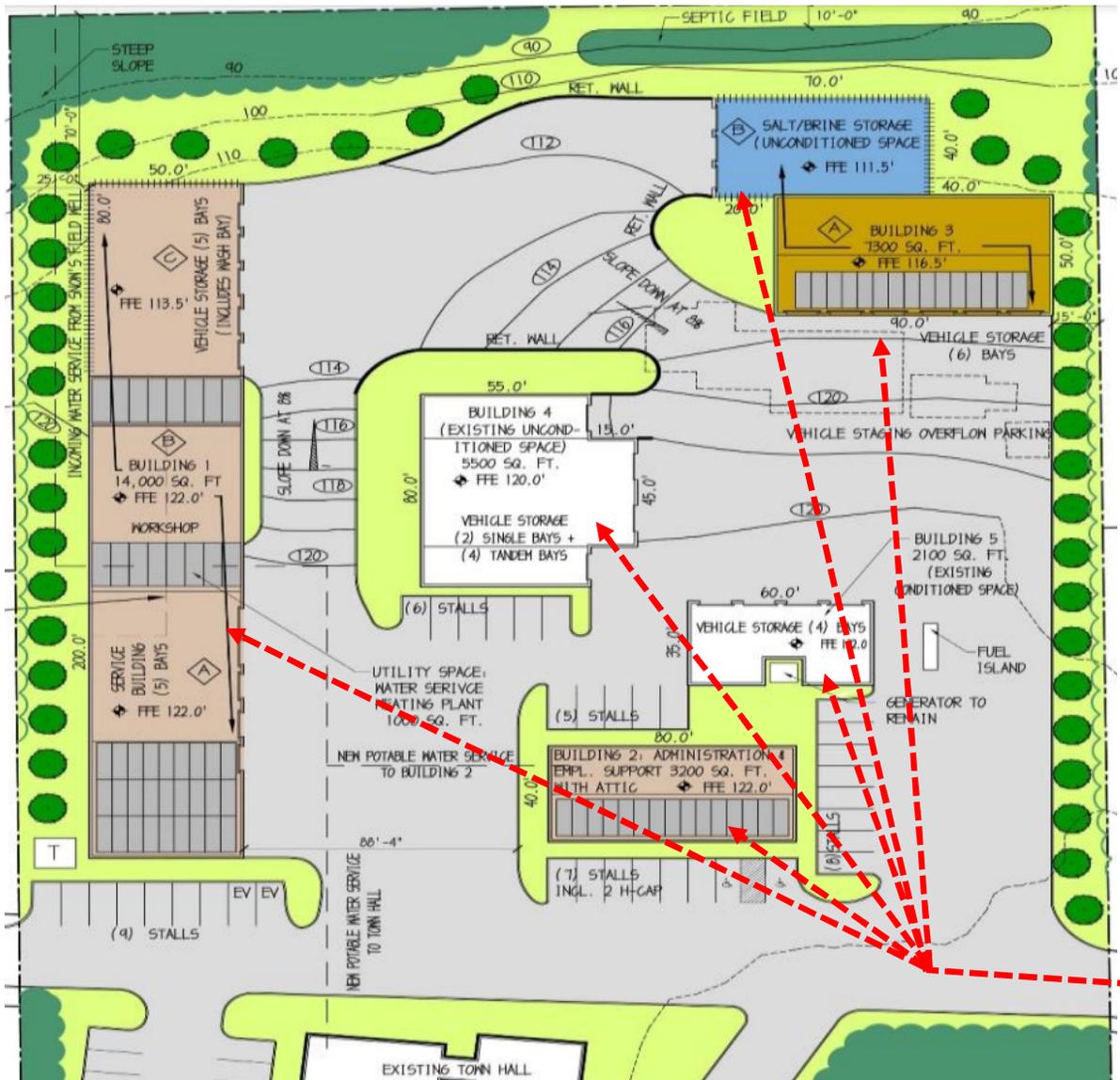
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Proposed Site Operational Considerations

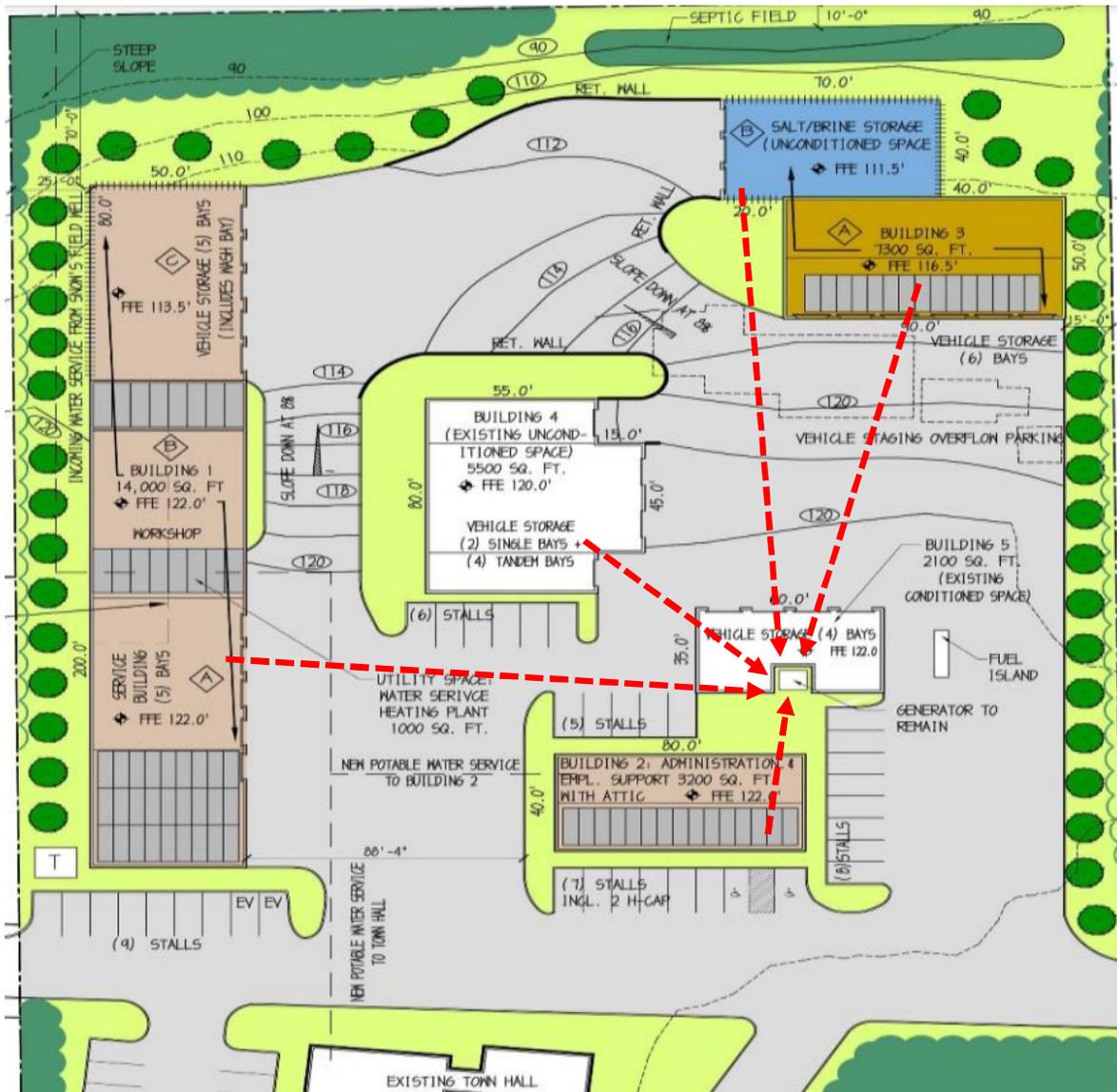
- Six (6) different utility connections
 - Electric
 - Water
 - Sewer/septic
- Generator capacity issues with 6 different secondary feeds (expensive)
- 6 buildings – inefficient for operations



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Proposed Site Operational Considerations

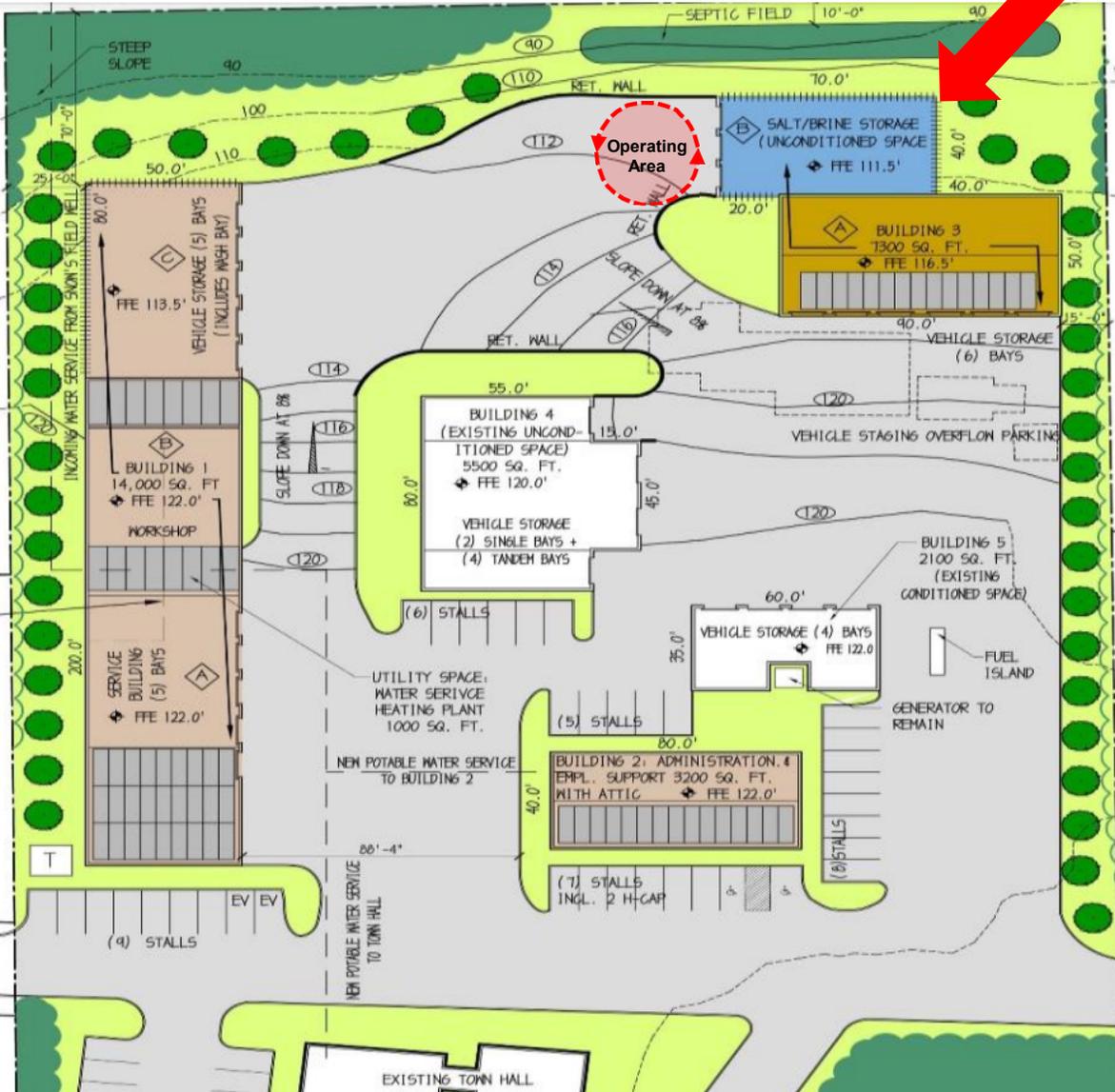
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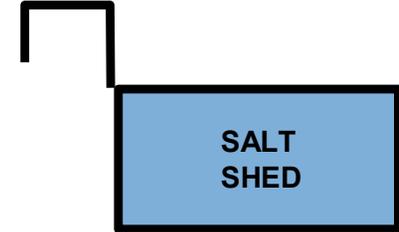
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Proposed Site Operational Considerations

- Salt shed location creates operational and safety challenges



Loading Ramp

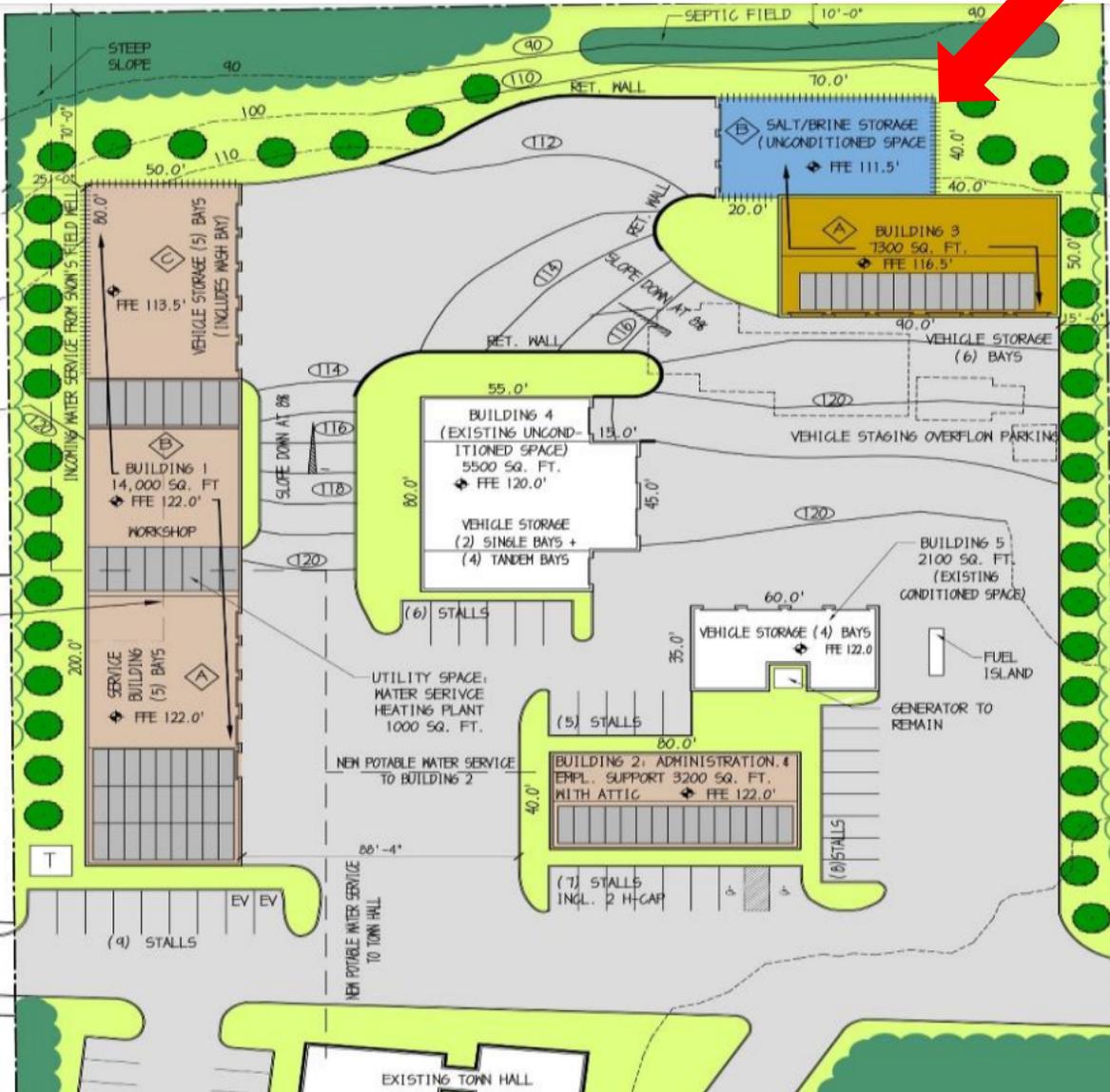
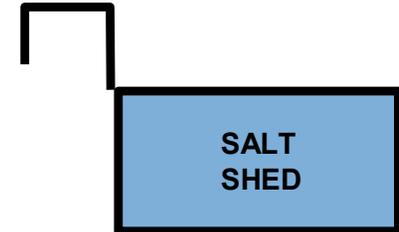


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Proposed Site Operational Considerations

- Salt shed location creates operational and safety challenges

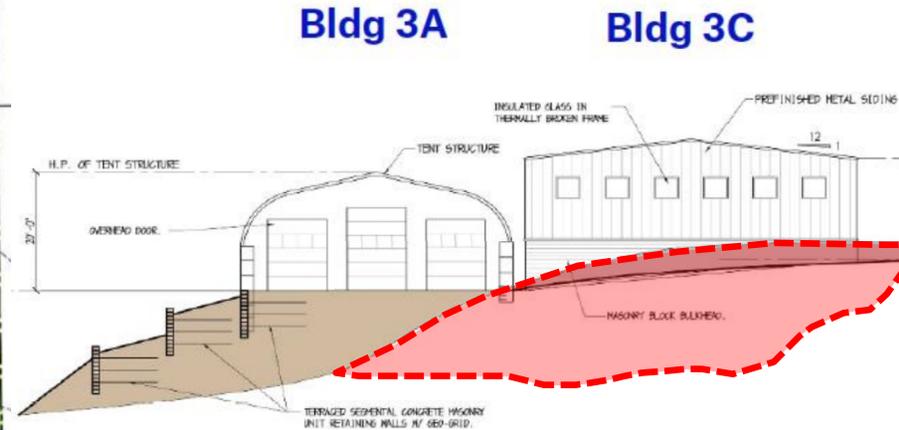
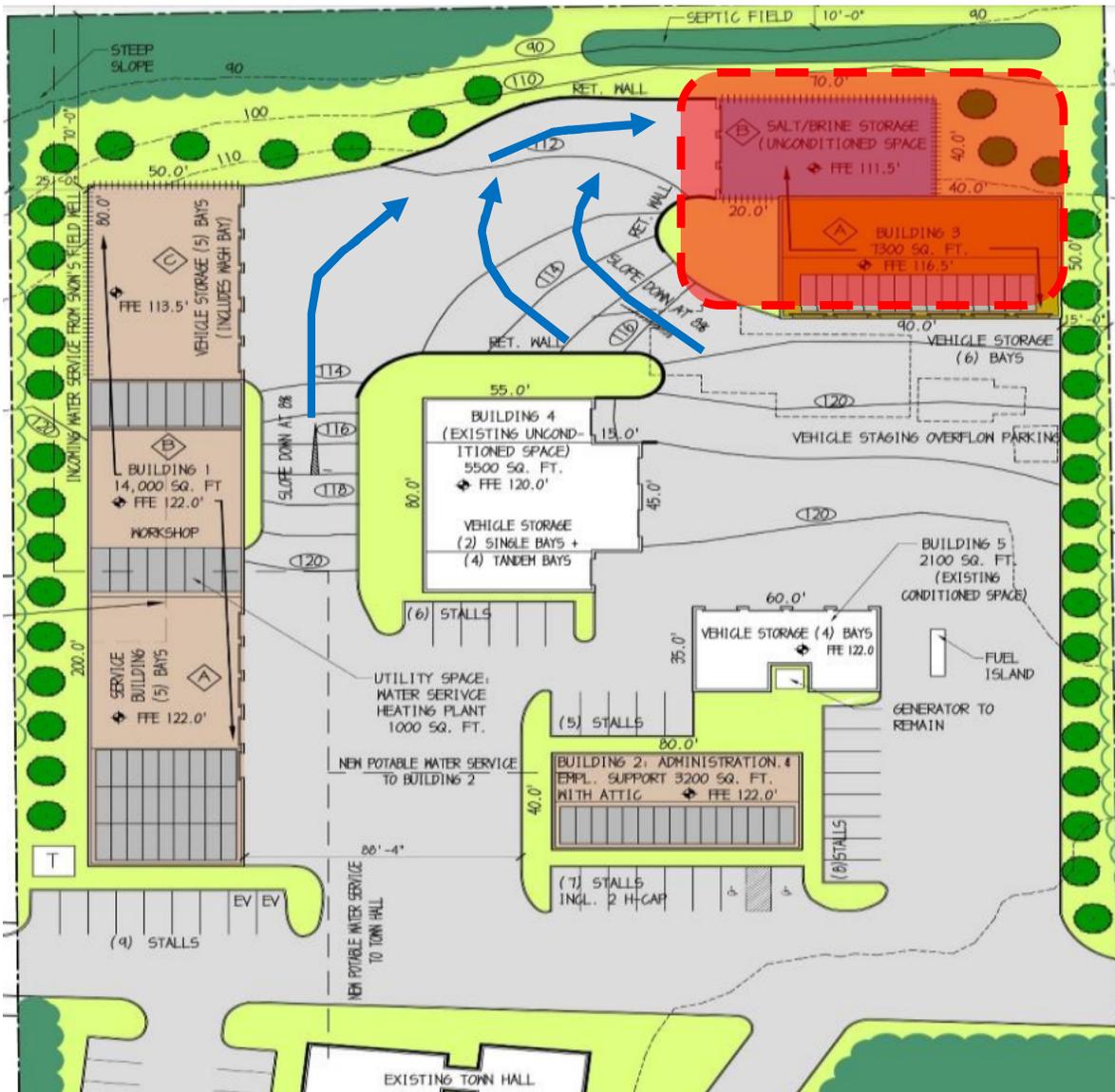
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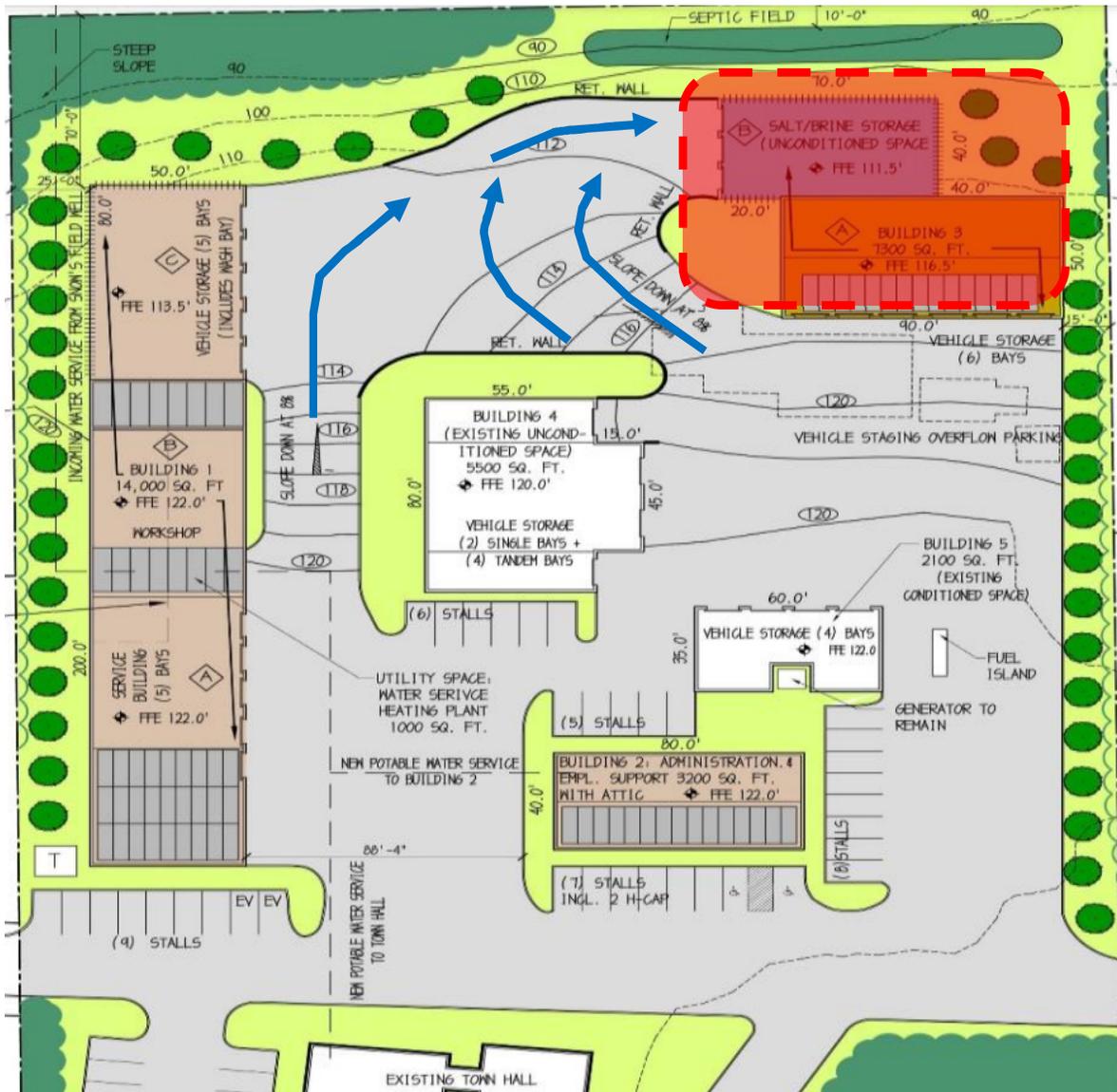
Proposed Site Operational Considerations

- Potential stormwater management issues with water flowing toward salt shed
- Significant undocumented fill located behind existing DPW – anticipate rammed aggregate piers



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Proposed Site Operational Considerations

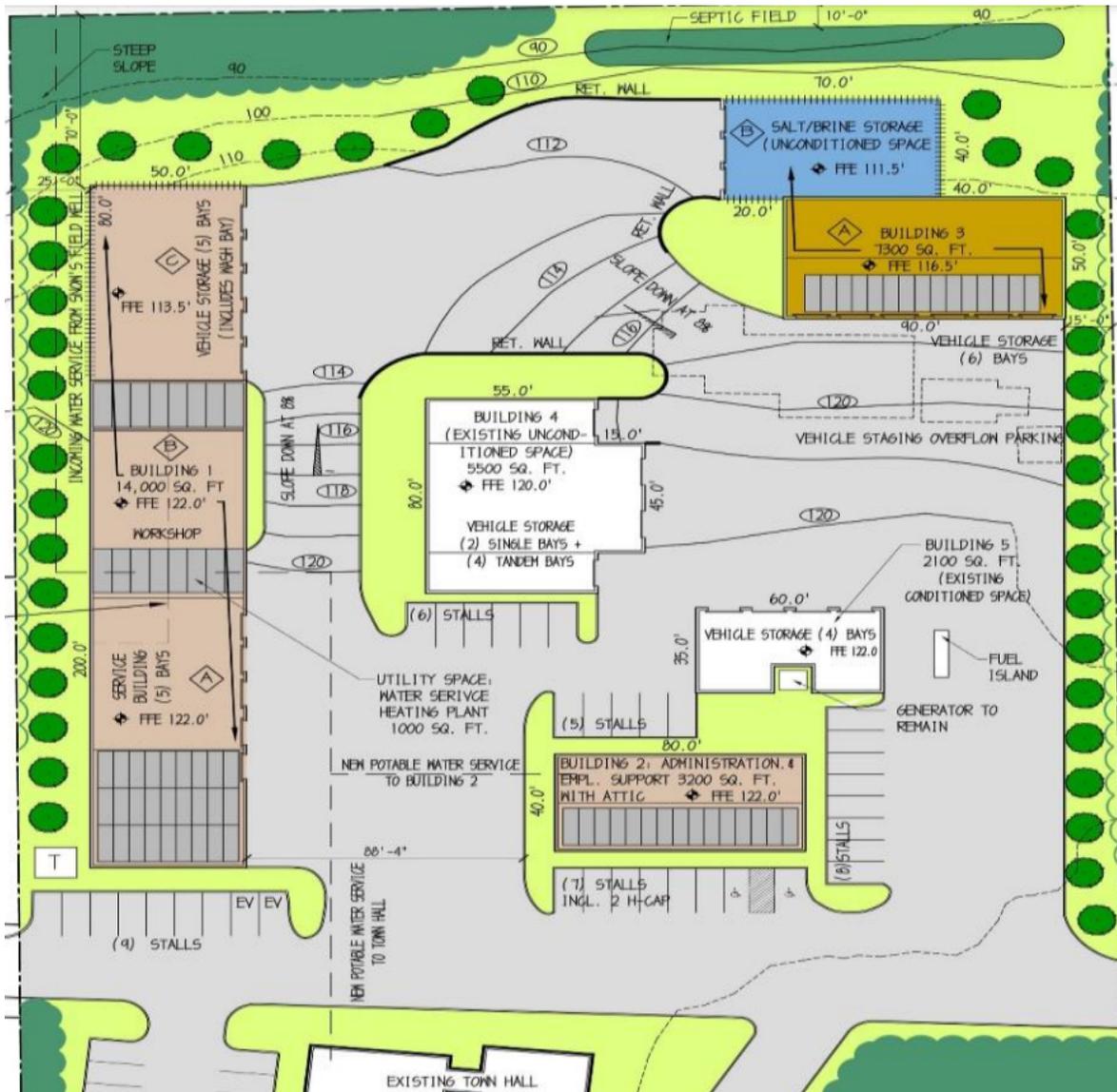


- Potential stormwater management issues with water flowing toward salt shed
- Significant undocumented fill located behind existing DPW – anticipate rammed aggregate piers
- Report from resident committee references a shift from salt to all brine. It should be noted that brine is not a primary snow fighting solution and the DPW does not intend to phase out the use of salt

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Proposed Site Operational Considerations

- Maintenance bays are not deep enough
- Maintenance Bay height is not adequate
- Partial basement is a safety concern due to heavier than air gases accumulating below grade (NEC 511)



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SCHEDULE

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Schedule

- Design: 9 months
(design documents to be prepared in accordance with Chapter 149 public bidding requirements)
- Bidding: 1.5 months
- Construction: 16 months
- Overall Schedule: 26.5 months from approval by the Town
(NOT 5 -7 years as stated in petition literature)

- **The Design-Bid-Build Project Delivery Method (Office of the Inspector General)**

- The design and construction contracting process for public construction projects in Massachusetts typically involves three stages: planning, design and construction.
- In the planning stage, project requirements are defined and often documented in a study, environmental report, or other planning document.
- The design stage results in a complete set of plans and specifications describing the project to be built.
- In the construction stage, bids are solicited on the completed design, and the selected contractor completes the construction. The design-bid-build delivery method is required by M.G.L. c. 149, the public building construction law, and M.G.L. c. 30, § 39M, the public works construction law.

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Cost Considerations

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Project Costs

- Resident DPW Study Group DPW Campus:

Construction Cost: \$15,542,026

Size (SF): 32,600

Const. Cost per SF: \$477

Weston & Sampson believes this price does not reflect current market conditions

- NOTE – The above estimate does not include required soft costs including, but not limited to:

- Furnishings
- Communications System
- Low Voltage / Security System
- Public Bidding Printing Costs / Advertising Costs
- Legal Costs
- Utility Backcharges
- Code Required Commissioning
- Moving Costs
- Code Required Testing & Inspection
- Public Project Required Architectural & Engineering Fees
- Public Project Required Owner's Project Manager Fees
- Construction Contingencies
- Escalation (to mid-point of construction)

- Soft Costs typically add an additional 25% to the construction costs or \$3,900,000

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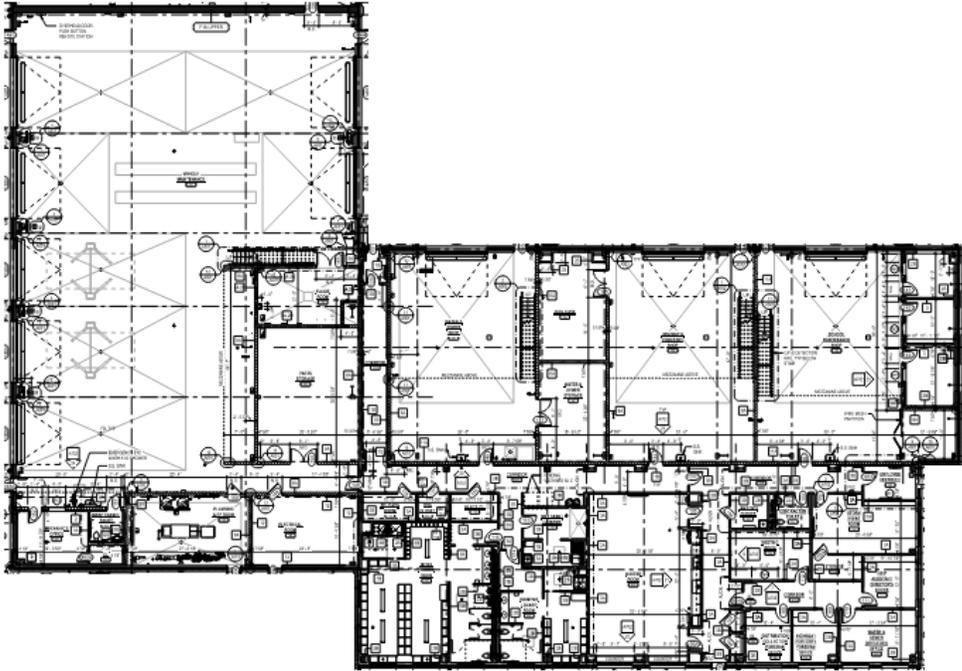
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DPW Project Cost Data						
Description	Size (SF)	Bid Date	Low Bid Price	Low Cost per SF	Average Bid Price	Avg Cost per SF
Wayland Public Works Facility	39,869	2014	\$ 8,877,000	\$ 223	\$ 10,519,754	\$ 264
Medford Public Works Facility	45,000	2014	\$ 12,186,000	\$ 271	\$ 12,340,333	\$ 274
Bourne Public Works Facility	39,040	2014	\$ 10,441,002	\$ 267	\$ 11,063,598	\$ 283
Norwood Public Works Facility	53,870	2014	\$ 14,902,289	\$ 277	\$ 15,437,343	\$ 287
Boylston Highway Facility	13,926	2015	\$ 3,364,000	\$ 242	\$ 3,935,419	\$ 283
Hopkinton Public Works Facility	42,410	2016	\$ 11,532,000	\$ 272	\$ 12,112,833	\$ 286
Orleans Public Works Facility	42,278	2017	\$ 11,774,000	\$ 278	\$ 12,833,834	\$ 304
Andover Municipal Services Facility	54,088	2017	\$ 16,049,000	\$ 297	\$ 18,413,675	\$ 340
Longmeadow Public Works Facility	44,858	2018	\$ 12,707,000	\$ 283	\$ 14,773,364	\$ 329
Rye Brook NY Public Works Facility	32,883	2018	\$ 11,193,943	\$ 340	\$ 13,184,654	\$ 401
Grafton DPW Facility	33,710	2018	\$ 11,713,205	\$ 347	\$ 12,399,201	\$ 368
Middleboro DPW Facility	34,000	2019	\$ 13,673,300	\$ 402	\$ 14,355,199	\$ 422
Yarmouth DPW Facility	37,990	2019	\$ 14,633,435	\$ 385	\$ 16,367,227	\$ 431
Burlington DPW Facility	66,200	2019	\$ 23,925,000	\$ 361	\$ 26,074,333	\$ 394
Holden DPW Facility	42,000	2020	\$ 14,519,200	\$ 346	\$ 15,780,624	\$ 376
Rockport DPW Facility	22,658	2021	\$ 12,550,000	\$ 554	\$ 13,799,954	\$ 609
Arlington DPW Facility (New/Reno)	75,050	2021	\$ 37,350,000	\$ 498	\$ 37,350,000	\$ 498
Marshfield DPW Facility	27,800	2021	\$ 11,070,841	\$ 398	\$ 11,517,899	\$ 414
Ardsley NY DPW Facility	32,540	2022	\$ 17,755,654	\$ 546	\$ 18,743,138	\$ 576
Rockport DPW Re-Bid	22,658	2022	\$ 17,540,800	\$ 774	\$ 17,540,800	\$ 774
Rockport Re-Bid II	20,260	2023	\$ 14,677,723	\$ 724	\$ 16,392,002	\$ 809
Tewksbury DPW	35,760	2023	\$ 23,297,000	\$ 651	\$ 27,331,382	\$ 764

2023 Resident
DPW Study
Group Cost
Estimate:
\$477/ SF

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Tewksbury DPW Facility

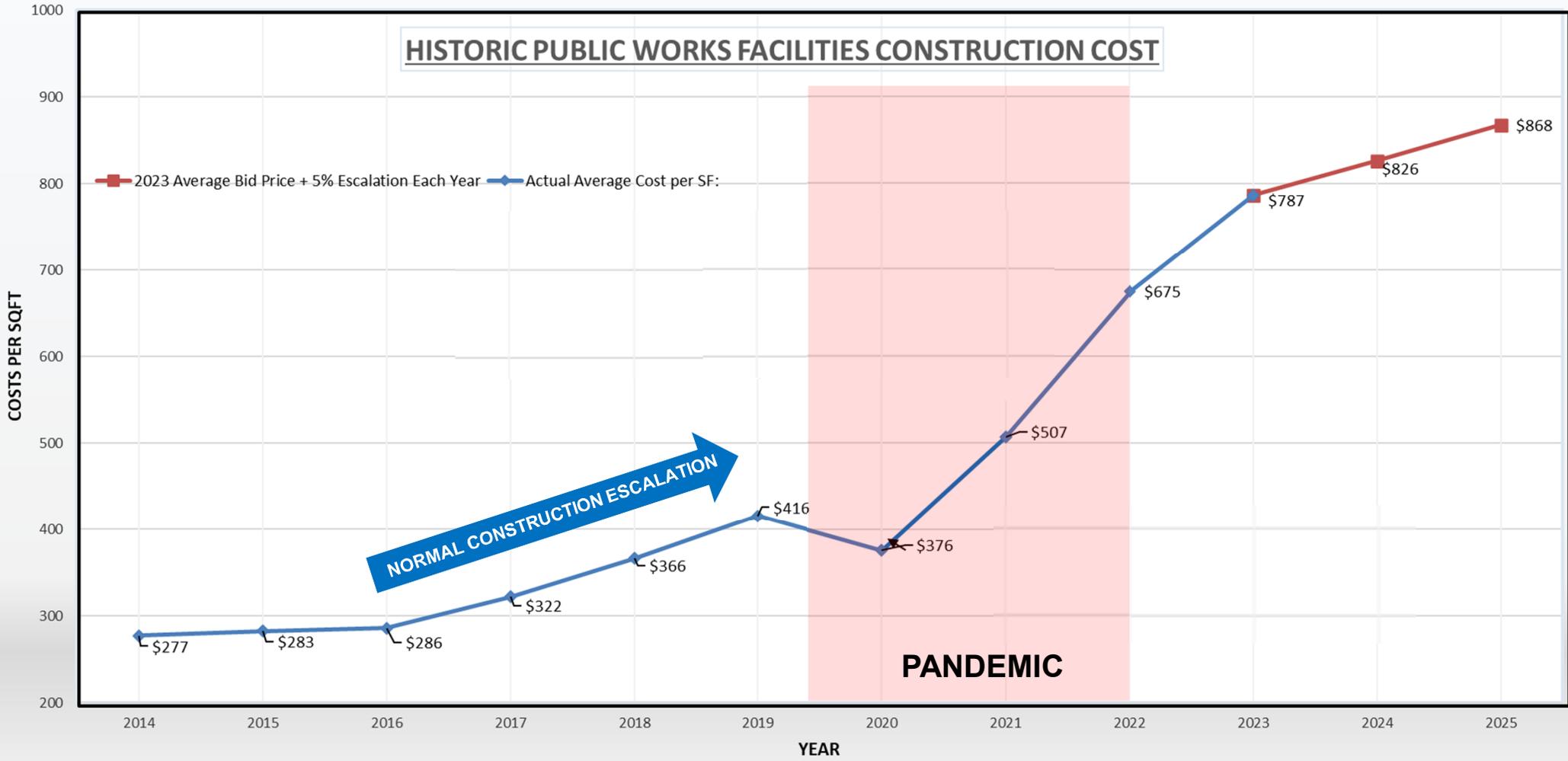


Bid Date: August 2023
Size: 35,760 SF
Low Cost per SF: \$651
Avg Cost per SF: \$764
Type: Pre-engineered metal building

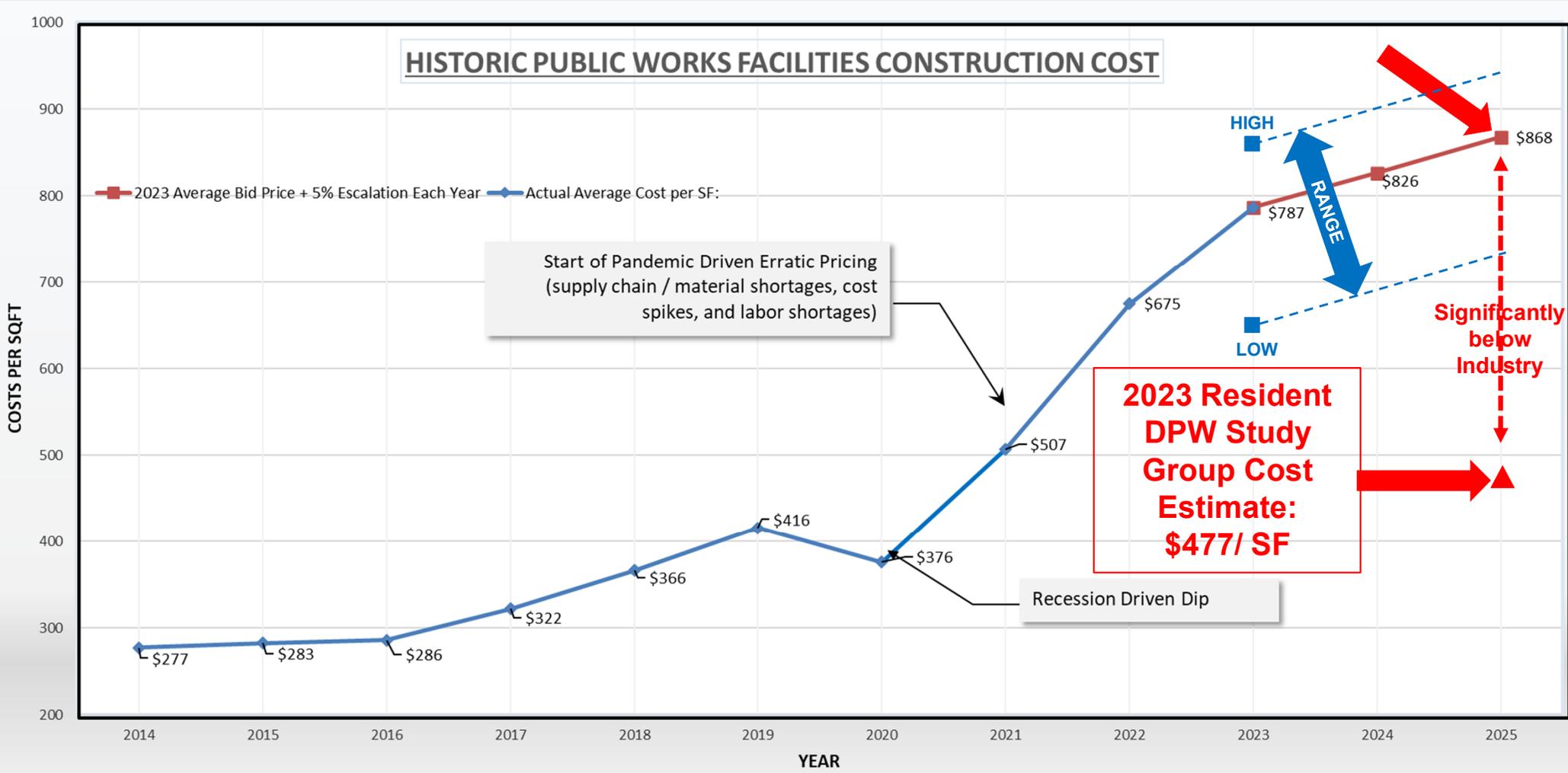


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HISTORIC PUBLIC WORKS FACILITIES CONSTRUCTION COST



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Project Costs Based on Current Market Conditions – AUGUST 2023

· Weston & Sampson Concept:

Size (SF):	29,600
2025 Const. Cost per SF:	\$868
Adjustment for Energy Code:	7% added cost
Soft Costs:	25% added cost

· Construction Cost:	29,600 SF x \$868/SF =	\$25,692,800
· Energy Code Adjustment:	\$25,692,800 x 7% =	<u>\$1,798,496</u>
	Subtotal:	\$27,491,296
· Soft Costs:	\$27,491,296 x 25% =	<u>\$6,872,824</u>

TOTAL PROJECT COST: \$34,364,120

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Thank You