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DRAFT

March 2022

TOWN OF
STERLING
MASSACHUSETTS

Department of Public Works
New DPW Facility



MEMORANDUM

TO: Ryan Mouradian
FROM: Della Donahue
DATE: March 16, 2022
SUBJECT: Sterling DPW – Feasibility Study

Introduction

The Project Team at Weston & Sampson has conducted an initial program assessment for the Town of Sterling's Department of Public Works. This report includes the following programmatic documents:

- Staff Interview Notes
- User Program Needs
- Fleet Inventory
- Space Needs Summary
- Zoning & Permitting Memos
- Existing Conditions Assessment
- Conceptual Site Layout Options
 - Existing & Alternate

Program Assessment

The staff interviews conducted by the Project Team and key DPW staff focused on reviewing typical operations and services, program deficiencies, and identifying current and future space requirements. The key drivers in a program assessment are the user groups who will be occupying and utilizing the DPW Facility – this includes both administrative and workforce DPW staff, contractors, Board of Directors, and the general public. In addition to the DPW Building, the facility design must include important site components including: outdoor material storage bins, salt shed, fuel station, and staff/ public parking.

The DPW is currently comprised of four divisions: DPW Administration, Water, Highway/ Parks/ Cemetery, and Fleet Maintenance. It is understood that there is potential future growth and the assessment accounts for anticipated staff development. There is also interest in pursuing a program that includes Sterling's Facilities division. The five user groups and their staffing breakdown is as follows:

Staffing Summary

Division	FT	PT	Future	TOTAL
1. DPW Administration	2		2	4
2. Water	4			4
3. Highway/ Parks/ Cemetery	8	6		14
4. Fleet Maintenance	2			2
5. Facilities	3			3
Total	19	6	2	27

The DPW's Fleet Inventory is another key aspect to the program. An overview for the desired indoor storage requirements is as follows:

Indoor Storage Requirements	
Large Vehicles	12
Small Vehicles	10
Trailer / Towed	5

A Space Needs Summary was developed with the insight gained from the Staff Interviews and supported by the project team's knowledge of industry practices. The programming analysis consists of identifying the operational space needs for each user groups. The process included developing a comprehensive space allocation matrix of individual rooms and spaces. The space needs assessment identified an initial program requirement of approximately 38,000 square feet, and the breakdown of area per "building block" is as follows:

Programmatic Building Requirements:	Area (sf)
Administration & Employee Facilities	3,941
Employee Facilities	2,826
Workshops	4,830
Fleet Maintenance	5,766
Wash Bay	1,684
Fleet Storage	19,345
Total Building Area	38,392

Town of Sterling
Department of Public Works
New DPW Facility – Feasibility Study

Staff Interview Notes

Project: New Department of Public Works Facility
Address: 171 Worcester Road, Sterling, MA 01564
Date: July 28, 2021; August 31, 2021
Subject: Kick-Off Meeting & Staff Interview Notes
Attendees: *Weston & Sampson:* Dan Tenney, Mike Richard, Della Donahue
Town of Sterling: Jeff Nutting, Paul Gerardi, Mike Tomaiolo, Patrice Fullhart

STAFF SUMMARY:

Division/ Department	Admin	Workforce	Future	Seasonal	Locker	Parking
Administration	2	-	2 ¹	-	-	Staff – 4 Visitor - 4
Water	2	2	-	-	3 full	4
Highway / Parks / Cemetery	1	7	-	6	8 full 6 half	14
Fleet Maintenance	-	2	-	-	2 full	2
Facilities	1	2	-	-	3	3
TOTAL:	6	13	2	6	16 full 6 half	31

1. Future GIS administrative position, plus a future open position to allow for flexibility/ growth (i.e. future Stormwater Foreman, interns)

The following is a summary of the DPW Divisions:

- Administration
- Water
- Highway
- Parks
- Cemetery
- Fleet Maintenance
- Facilities

Administration:

- Staffing: Superintendent, Admin Assistant
 - o Consideration for a future GIS Specialist position
 - o Superintendent is also the Tree Warden
- Public, front desk interaction - billing, permitting, managing DPW operations
 - o Vestibule, public lobby sized to handle 2-3 visitors at a time
 - o Reception area/counter with two service windows
 - o Need for a public restroom, single-use, proximity to lobby?
- Conference / Training Room to support DPW meetings, training sessions, and Board of Director meetings
 - o Sized to fit +/- 20 people, multiple tables, flexibility in space for furniture layouts
 - o Secured access so the rest of the building can remain locked during evening meetings
 - Adjacency to public lobby for ease of access
 - o Provisions for presentations, tel/data,
- Admin assistant workstation in an open, shared office area with water admin
 - o (2) workstations, file cabinets, access to front desk/reception windows
 - o Include a third desk for occasional interns?
- Private offices:
 - o Superintendent Office sized for desk, small meeting table, basic storage
 - o GIS Specialist Office –anticipating the growing GIS operations/the need for this position
 - o Include an additional private office space for future thinking, flex space
- Need both active/archive file and record storage
 - o Existing file storage = 8" x 16", not adequate space, overflows throughout building
 - o Need Active file storage room, at least
 - o Need Archive file storage room, smaller, excess files can be stored on mezzanine
 - o Provisions for layout space in Active File storage room? Or provide a separate, formal layout room?
- Office support areas:
 - o Copy/mail area - small alcove for basic office needs, counter, cabinets, copy machine
 - o Kitchenette – small alcove with counter space, cabinets, small sink,
 - Redundant with the muster room? Maybe – but a nice gesture for admin if the muster room is occupied, without requiring much SF
 - o Office Supply Storage Closet – basic shelving, coat rod,
- Contractors occasionally visit DPW and need space to layout plans – consider their need to access a layout table/conference room
- Mention of possible future growth with Stormwater operations
 - o Additional office? For now, no – but keep this in mind

Water:

- Staffing: Executive Assistant (admin), Foreman, Technician, Truck Driver
- Water admin workstation in an open, shared office area with admin assistant
 - o Exec Asst currently handles water billing, but the Town does not want to continue this operation – if so, do not have to make provisions for billing machine
- Shared Water Office for foreman, technicians, driver (3 workstations), SCADA, and file storage

- Need access to office support areas: file storage, copy/mail area, conference/training room
- Need access to employee facilities: Muster/Training Room and Locker / toilets/ showers
- Locker / toilet / shower needs
 - o Combined, shared staff locker area, minimum 18" x 18"
 - o Separate Men & women workforce restroom facilities
- Water Shop:
 - o Meter test bench
 - o Meter storage for 15-20 meters
 - o Secure brass storage

Highway / Parks / Cemetery:

- Staffing: Foreman, working foreman, lead operator, and (5) truck drivers = 8
 - o Typically, +/- 6 seasonal staff
- Foreman oversees highway, parks, trees, and cemetery work (everything except water & trash/recycling)
 - o Provide a private office
- Parks / fields
 - o Maintain all fields and parks throughout town, including schools
 - Small tool & supply storage area at school – to remain
 - o +/- 6 seasonal staff help with mowing/parks maintenance during summer months
- Cemetery:
 - o Maintain 6 cemeteries and handle public/community interactions/engagement
 - o Small maintenance shed at the cemetery to store tools and supply – to remain
 - o Office space for foreman to meet with residents regarding cemetery events – to remain
- All staff needs access to Muster Room and Conference/Training room
 - o Muster Room: stove, oven, microwaves, fridge, sink, etc.
 - Also doubles as a secondary training space
 - o If not two separate spaces (Muster/Training & Conference/Training, consider a way to combine space with options for partitioning/transforming the space as needed.
- All staff needs access to Lockers / toilets / showers
 - o Combined, shared staff locker area, minimum 18" x 18" for full time workforce
 - Provide smaller or half/stacked lockers for seasonal summer staff
 - o Separate Men & women workforce restroom facilities
 - o Laundry/uniform service –provisions for uniform storage rack and laundry bin
- Shared Workshop:
 - o Provisions for sign assembly
 - o Tool crib, storage racks and hanging tool storage, shared amongst all
 - o Chainsaw sharpening, storage needs
 - o Small engine repair, mower blade sharpening, "rainy-day projects"

Facilities:

- Staffing: Facilities Manager, (2) Custodians = 3
- No public interaction, deal with just facilities directly (7 town buildings)
- Currently operate out of the Town Hall (basement, boiler room)

- Makes sense operationally to program Facilities at the future/new DPW Facility
 - o Lots of overlap and similar services/operations
- Private office for Facilities Manager
- Workshop, woodworking
 - o Storage for tools, parts, bits, etc.
 - o Desk space for (2) custodians
 - o Cork board for communication
 - o Workbenches and typical woodworking equipment
 - Dust collection equipment requested
 - o Lot of painting ops – storage cabinets needed
 - o Would/could do larger projects if they had more space/equipment
 - o Would like to keep gas on site, cabinets for chemical storage
- Currently occupies a 10 x 20 room for both admin and workshop functions
 - o 8' table on one side, 6' table on the other
 - o Limits work, efficiency, and occupant comfort/health
- Lockers for all
- Use of Muster Room
- Parking for (3) personal vehicles,
 - o Facilities Manager also uses a town SUV – does not take home
- Laundry room – industrial washer & dryer for high volume of dirty cleaning towels
- Keen on recycling operations – closet within the building? Shed on site? TBD
 - o Large enough to house recyclables from all (7) facilities she manages

Fleet Maintenance:

- Staffing: Mechanic Foreman, mechanic (currently vacant)
- Office for mechanic, file storage, reference area
- This division maintains vehicle & equipment for all of the DPW
- This division also maintains vehicle & equipment for many other municipal agencies (i.e. police, council on aging)
- (3) maintenance bays, minimum
 - o Designated welding area along/adjacent to maintenance bay
- Tire storage - +/- 20 tires, kept rimmed
- Part Storage: belts, parts, filters, etc.
- Equipment/lifts: Currently only have a 1 ton lift
 - o Need more lifts, at least (1) big lift
 - o Need a monorail for mezzanine ease of access
- Maintenance workshop area
- Fluid Storage Room

Wash Bay:

- Manual wash operations & automatic undercarriage
- Request for catwalks for thorough washing

Fleet Storage:

- Drive-thru, center aisle, angled parking

Salt Shed:

- Request for the largest salt shed possible
- 5,000-7,500 tons
- Mostly straight salt, plus a separate salt/sand mix – 80:20
- De-icing tank

Site Amenities:

- Material Storage Bins: +/-8-10 bins total, 10' x 10' each
 - o Sand (double/triple), stone, loam, gravel(double/triple), cold path (smaller)
- Outdoor Storage Area for temporary fencing, PVC piping, drainage pipe, etc.
 - o Lean-to canopy with overhead coverage, or a rack storage system within the bldg. (i.e. along the fleet storage garage)
- Parking – 27 employees & 4 visitors = 31 parking staff total (1-2 of which are ADA)
- Generator to run the entire facility in emergency event
- Fuel Station – 5k gas & 5k diesel
- Recycled Material Shed? (if not a storage room within the facility – TBD)

Miscellaneous:

- Currently at 50% staffing, and have been for a while now
- Currently store excess fleet items in an area +/-2 miles down the road, behind the police station/beyond a landfill → potential site if a large parcel is required?
- Currently help to store a trailer of fire prevention/association material and a fire vehicle
- Fuel Station is utilized by nearly all other municipal agencies (except school)
 - o i.e. police, fire, animal control

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Department of Public Works
New DPW Facility – Feasibility Study

User Program Needs

User Group Program Needs
Sterling, MA
7/28/2021

		Type	Private Office	Workstation in Shared Office	Lockers	Muster	Parking
DPW Administration 2 FT 2 future	Superintendent	Admin	✓			1	1
	Admin Assistant	Admin		✓			1
	future, GIS Specialist	Admin	✓				1
	future, Open Position (flex)	Admin	✓				1
Water 4 FT	Executive Assistant	Admin		✓			1
	Foreman	Admin		✓	Full	1	1
	Technician	Workforce		✓	Full	1	1
	Truck Driver	Workforce		✓	Full	1	1
Highway / Parks / Cemetery 8 FT 6 summer	Foreman	Admin	✓		Full	1	1
	Working Foreman	Workforce			Full	1	1
	Lead Operator	Workforce			Full	1	1
	Truck Driver	Workforce			Full	1	1
	Truck Driver	Workforce			Full	1	1
	Truck Driver	Workforce			Full	1	1
	Truck Driver	Workforce			Full	1	1
	Truck Driver	Workforce			Full	1	1
	Summer Staff	Seasonal			Half	0.5	1
	Summer Staff	Seasonal			Half	0.5	1
	Summer Staff	Seasonal			Half	0.5	1
	Summer Staff	Seasonal			Half	0.5	1
	Summer Staff	Seasonal			Half	0.5	1
	Summer Staff	Seasonal			Half	0.5	1
Fleet Maintenance 2 FT	Mechanic Foreman	Workforce	✓		Full	1	1
	Mechanic	Workforce			Full	1	1
Facilities 3 FT	Facilities Manager	Admin	✓		Full	1	1
	Custodian	Workforce		✓	Full	1	1
	Custodian	Workforce		✓	Full	1	1
TOTALS:		<u>Admin</u> 8	<u>Office</u> 6	<u>Workstation</u> 7	<u>Full Locker</u> 16 <u>Half Locker</u> 6	<u>Muster</u> 20	<u>Staff Parking</u> 27 <u>Visitor Parking</u> 4

Full = 18" x 18", full length
Half = 12" x 12" and/or stacked

- 2 workstations - admin area
- 3 workstations - shared water office
- Desk alcove in Facilities Workshop

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Fleet Inventory

Sterling, MA - DPW Fleet Inventory

8/11/2021

No.	Type	Description	I/C/O	Comment
	T	Big Tex Utility Trailer	C	
	T	Vgiant Val Leaf Sucker	C	
	T	Carry on Trailer Corp	C	
	T	Carry on Trailer Corp	C	
	T	Stepp Manufacturing Hot Box	I	
	T	Carry on Trailer Corp	C	
	T	Sign Board	I	
	T	Sign Board	I	
	T	Water Emergency Trailer	I	
	T	18' Trailer	I	
	S	Trackless MT6T Loader Rops Cab	I	
	S	Ford F550 Pick Up	I	
	S	Ford F450 Dump	I	
	S	Ford F250 Pick Up	I	
	S	Ford Ranger Puck Up	I	
	S	Ford Tracon XL Van	C	
	S	Ford F250 Pick Up	I	
	S	Ford F350 Pick Up	I	
	S	Kubota 4060 Tractor	I	
	S	Chevy 3500 Pick Up	I	
	S	Ford Transit Ful Size Van	C	
	S	Ford F550 Dump	I	
	L	JD 670A Grader	O	
	L	5600 International Dump Sander	I	
	L	7400 International Dump Sander	I	
	L	5600 International Bucket Truck	I	
	L	Volvo L70E Loader	I	
	L	7400 International Dump Sander	I	
	L	7400 International Dump Sander	I	
	L	Chevy 4500 Dump	I	
	L	FL MZ Dump Sander	I	
	L	FL 108SD Basin Truck	I	
	L	JD 544K Loader	I	
	L	JD 310SL Back Hoe	I	
	L	Elgin Pelican Sweeper	I	

Indoor Storage Requirements (I):

Large (L)	12
Small (S)	10
Trailer/Towed (T)	5

Canopy Storage Requirements (C):

Small (S)	2
Trailer/Towed (T)	5

Town of Sterling
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New DPW Facility – Feasibility Study

Space Needs Summary

Town of Sterling
 Department of Public Works
Space Needs Summary
 8/11/2021

Building Requirements

Area	Description	Size (SF)	Room / Area Dimensions			
			length	width	size	
Office & Office Support Areas	Vestibule/Waiting/Reception	220	--	--	--	
	Admin Open Office	320	16	20	320	
	Superintendent Office	180	12	15	180	
	Future GIS Specialist Office	120	12	10	120	
	Highway/ Parks/ Cemetery Foreman Office	120	12	10	120	
	Future Position Office (flex space)	120	12	10	120	
	Facilities Manager Office	120	12	10	120	
	Shared Water Office	256	16	16	256	
	Copy/Mail Area	96	8	12	96	
	Active File Storage & Layout Room	270	15	18	270	
	Archive File Storage	168	12	14	168	
	Conference/ Training Room	540	18	30	540	
	Admin Kitchenette	50	5	10	50	
	(2) Unisex Toilets	152	8	19	152	
	Office Supply Closet	24	4	6	24	
		Subtotal:	2,756			
		Area Grossing Factor (10%):	276			
		Circulation (30%):	909			
	TOTAL:	3,941				
Employee Facilities	Staff Locker Room	160	10	16	160	
	Male Workforce Restroom	300	15	20	300	
	Female Workforce Restroom	180	12	15	180	
	Muster Room	576	24	24	576	
	Laundry Room	72	9	8	72	
	Supply Closet (i.e. PPE)	80	10	8	80	
	Janitor Closet	36	6	6	36	
	Main Electric Room	140	10	14	140	
	Mechanical Room	192	12	16	192	
	Plumbing/Fire Protection Room	140	10	14	140	
	Tel/Data Room	100	10	10	100	
		Subtotal:	1,976			
		Area Grossing Factor (10%):	198			
		Circulation (30%):	652			
	TOTAL:	2,826				

Town of Sterling
 Department of Public Works
Space Needs Summary
 8/11/2021

Building Requirements

Area	Description	Size (SF)	Room / Area Dimensions			
			length	width	size	
Work Shops & Material Storage	Highway/ Parks/ Cemetery Workshop	1,400	35	40	1,400	
	Tool Crib	150	10	15	150	
	Water & Sewer Workshop	1,386	33	42	1,386	
	Meter Storage	256	16	16	256	
	Brass Storage (secure)	(in shop)	10	12	120	
	Facilities Workshop	750	25	30	750	
	Supply Crib	120	10	12	120	
	Recyclable Material Storage	120	10	12	120	
		Subtotal:	4,182			
		Area Grossing Factor (5%):	209			
		Circulation (10%):	439			
	TOTAL:	4,830				
Fleet Maintenance	Maintenance Bay	1,100	20	55	1,100	
	Maintenance Bay	1,100	20	55	1,100	
	Maintenance Bay	1,100	20	55	1,100	
	Welding Area	300	10	30	300	
	Maintenance Workshop Area	250	10	25	250	
	Fluid Storage Room	224	14	16	224	
	Maintenance Office / Reference Room	168	12	14	168	
	Tire Storage Area	300	12	25	300	
	Parts Storage Room	450	15	30	450	
	Compressor Room	(on mezz)	12	12	144	
		Subtotal:	4,992			
	Area Grossing Factor (5%):	250				
	Circulation (10%):	524				
	TOTAL:	5,766				
Wash Area	Wash Bay	1,540	28	55	1,540	
	Wash Equipment Room	144	18	8	144	
		Subtotal:	1,684			
		Circulation:	n/a			
	TOTAL:	1,684				
Fleet Storage	Vehicle / Equipment Storage	18,424	98	188	18,424	
		Subtotal:	18,424			
		Area Grossing Factor (5%):	921			
		Circulation:	n/a			
		TOTAL:	19,345			
TOTAL:		38,393				

Town of Sterling
Department of Public Works
New DPW Facility – Feasibility Study

Zoning & Permitting Memos

MEMORANDUM

TO: File

FROM: Colleen Kennedy

DATE: September 8, 2021

SUBJECT: Sterling Public Works Zoning/Permitting Review

SITE INFORMATION:

Parameter	Information	Notes:
Site Address:	129-135 Leominster Rd	
Map/Lot:	66/9	
Size (acres):	12.4 acres	
Zoning District	Light Industrial	
Book/Page:	06050/0084	

ZONING INFORMATION:

Zoning District: Light Industrial

Zoning Map Date: May 2019

Zoning By-Law Date: Updated June 6, 2020

Overlay Districts:

District	Applicable	Notes:
Aquifer Protection (Zone II)	YES	
Floodplain (FEMA 100 Year Data used here, FIRM data applies to bylaw)	YES	
Stillwater River Protection	NO	
Wireless Communication (Wireless Communications Facilities allowed in sectioned area only)	YES	

DIMENSIONAL REGULATIONS:

DIMENSION	Required	Provided (existing)	Notes
Min. Lot Area (s.f.)	-	12.4 ac	
Min. Lot Frontage (ft.)	-	483'	
Min. Lot Width (ft.)	-	468'	
Min. Front Yard (ft.)	40'	129'	
Min. Side Yard (ft.)	35'	66'	
Min. Rear Yard (ft.)	40'	743'	
Floor Area Ratio	0.4		Building % = 1.4%
Building Height	36'	-	

Notes:

PERMITTING SUMMARY:

- 1.) Sterling Conservation Commission - Stormwater Management Permit
 - Permit applies to all new development and redevelopment projects
 - Approved Wellhead Protection Zone II

- 2.) Notice of Intent
 - 200-foot Riverfront area: a stream runs through rear of the parcel discharging to Bartlett's Pond Conservation Area)
 - Wetlands: Freshwater Wetlands are located to the rear of the parcel.

- 3.) Sterling Landfill: A large portion of the parcel is located within the Sterling Landfill
MassDEP Solid Waste Facilities Information (Master List Updated Jan. 2020):
 - Active Year: 1971
 - Class Group: Land Disposal
 - Description: Closed Landfill with Env. Monitoring Required
 - Close Year: 1995
 - **Closure Status: Capped**
 - Waste Category: MSW (Municipal Solid Waste)
 - Liner Status: Not Lined

- 4.) Sterling Planning Board – Site Plan Review
 - Review applies to all construction, exterior alteration, or exterior expansion of, or change of use within a municipal, institutional, commercial, industrial, or multifamily structure involving more than 500 square feet.

Note: Municipal use is exempt per section 301-2.3.1. of the Zoning Bylaws in “Table of Principal Uses.” Additional research with the Building Commissioner will be necessary to determine if a site plan review will be required.

5.) Sterling Planning Board – Earth Removal Permit

- An Earth Removal Permit is required for any excavation amount exceeding 1,000 cy

DESIGN AND PERMITTING CONSIDERATIONS:

Zoning Bylaws	Notes
63-4 Earth Removal Permit required.	
<p>a. No earth in the amount equal to or in excess of 1,000 cubic yards shall be moved from any parcel of land within the Town of Sterling to another parcel either within or without the Town unless such removal is authorized by a permit issued by the Board and the parcel is in a district where earth removal is an allowed use in Section 2.3.1D7 of the Protective Bylaw or a variance for such removal has been granted by the Board of Appeals under Section 6.2.2.A4 of the Protective Bylaw. Any removal over 1,000 cubic yards without a permit will be deemed a violation of this bylaw.</p>	An Earth Removal Permit is required for any excavation amount exceeding 1,000 cy
<p>b. Removal of earth in an amount up to but not including 1,000 cubic yards shall require a permit but will be exempt from § 63-5, Public hearing, of this bylaw. Any or all of the requirements under § 63-6, Application for permit, may be waived at the discretion of the Board.</p>	
<p>The removal of earth materials from any parcel of land in a definitive subdivision that has been approved by the Planning Board shall be allowed in the same manner as removal from other parcels of land in the Town of Sterling zoned Light Industrial. Consequently, tentative or final approval of a subdivision plan by the Planning Board shall not be construed as authorizing the removal of earth materials from the premises, even though it is in connection with the construction of streets shown on the plan.</p>	
63-12 Exemptions	
<p>This bylaw shall not apply to the removal of earth as defined herein in amounts less than 1,000 cubic yards (except for requirements outlined in § 63-4B of the bylaw) in connection with the construction of any building, septic system and appurtenant walk or driveway for which a permit has been granted by the Select Board or other licensing body or the construction of a street that has been approved by the Planning Board, provided that the quantity of material removed does not exceed that displaced by the portion of building, walk, driveway, street or similar appurtenance below finished grade, or to removal in the course of customary use of the land for a farm, garden or nursery. The above exemptions do not cover removal of earth materials from the premises involving topographical changes or soil stripping or loam-stripping activities, nor shall the tentative or final approval of subdivision plans be construed as authorizing the removal of earth material from the premises, even though in connection with the construction of streets as shown on the plan, without the issuance of an earth removal permit under this bylaw.</p>	Permit would still be required for excavation for subsurface stormwater BMPs and grading changes
162-6 Prohibited activities (Storm Drains)	
<p>a. Illegal discharges. No person shall dump, discharge, cause or allow to be discharged any pollutant or non-stormwater discharge into storm drain systems, watercourses, or into the waters of the commonwealth.</p>	
<p>b. Illicit connections. No person shall construct, use, allow, maintain, or continue any illicit connection to storm drain systems, regardless of whether the connection was permissible under applicable law, regulation or custom at the time of connection.</p>	

c. Obstruction of storm drain systems. No person shall obstruct or interfere with the normal flow of stormwater in or out of storm drain systems without prior approval from the Board of Public Works or its designated agent.	
142 Retention/Detention Ponds/Basins	
142-1 Determination of necessity for enclosure Outdoor, man-made retention/detention ponds/basins, as may be required to be built by the Planning Board under its Subdivision Rules and Regulations, may be required by the Building Inspector to be protected by a fence, wall or other enclosure, or combination thereof, of durable material if he/she determines that such is necessary for the protection of children. Consideration will be given to the slope and materials of construction of the banks and to the depth of the retained water.	Design Parameter – If proposing an infiltration/detention basin, the Building Inspector may require it to be enclosed with fencing
142-2 Barrier Requirements The barrier, if such is required, shall be constructed so as to afford no external handholds or footholds, of materials which are impenetrable by toddlers, at least four feet in height so that a toddler cannot grasp its top by jumping or reaching, and equipped with a self-enclosing and positive self-latching closure mechanism at a height above the reach of toddlers and provided with hardware for permanent locking. Sufficiently wide gated access shall be provided for maintenance purposes.	Fencing shall be at least 4' high
164-5 Applicability; stormwater management permit	
A. This bylaw shall apply to all new development and redevelopment, including, but not limited to, site plan applications, subdivision applications, land grading applications, or land use conversion applications. This bylaw shall also apply to other activities that will increase the amount of stormwater runoff or pollutants from a parcel of land, or any activity that will alter the drainage characteristics of a parcel of land, unless exempt pursuant to § 164-5D of this bylaw. All new development and redevelopment under the jurisdiction of this bylaw as prescribed in this bylaw shall be required to obtain a stormwater management permit.	Permitting – Stormwater Management Permit
301-2.3. Use Regulations	
301-2.3.1. Table of Principal Uses	
B. Exempt Uses and Community Facilities	
5. Municipal Facility – Y in Commercial District	*Municipal Exemption*
301-4.6.2. Geographical applicability and powers.	
2. The Water Resource Protection Districts are all land areas in the Town of Sterling which are within either a delineated Zone II or are within a one-half mile radius of an existing municipal well which has no delineated Zone II.	
301-4.6 Aquifer (A) and Water Resource Protection (W) Districts	
1.a. Underground storage of liquid petroleum products of any kind, excluding the liquefied petroleum gases propane, propylene, butanes, butylenes and liquefied natural gas, except for replacement of tanks existing at the time of adoption of the bylaw	Prohibited Use (A) & (W)

<p>1.b. Storage of liquid petroleum products of any kind excluding the liquefied petroleum gases propane, propylene, butanes, butylenes and liquefied natural gas except those incidentals to:</p> <ol style="list-style-type: none"> 1. Normal household use and outdoor maintenance or the heating of a structure. 2. Waste oil retention facilities required by MGL c. 21, § 52A. 3. Emergency generators required by statute, rule or regulation. 4. Treatment works required by the DEP designed in accordance with 314 CMR 5.00 for the treatment of contaminated ground or surface waters, such storage to conform to § 301-4.6.5.1 and 2 below. 	Prohibited Use (A)
<p>1.c. Underground storage of any liquid material or chemical which could degrade the quality of the groundwater should it be released into or onto the ground. (Allowed aboveground storage of such liquids must conform to § 301-4.6.5.1 and 2 below.)</p>	Prohibited Use (A) & (W)
<p>2.a. Any use which involves the manufacture, generation, processing, packaging, repackaging, use, storage, treatment disposal or transportation of toxic or hazardous materials or waste, except the following:</p> <ol style="list-style-type: none"> 1. Very small quantity generators as defined under 310 CMR 30.00. 2. Household hazardous waste collection centers and events under 310 CMR 30.390. 3. Waste oil retention facilities required by MGL c. 21, § 52A. 4. Water remediation treatment works approved under 314 CMR 5.00. 	Prohibited Use (A) & (W)
<p>2.b The outdoor storage of road salt or other deicing chemicals.</p>	Prohibited Use (A) & (W) Design Parameter - Salt Shed
<p>2.c The outdoor storage of fertilizers, soil conditioners, herbicides, and pesticides.</p>	Prohibited Use (W)
<p>2.d Sanitary landfill or other disposal of solid waste, not including brush and stumps.</p>	Prohibited Use (A) & (W) Sterling Landfill is located outside of the Zone II Limits
<p>2.e Municipal sewage treatment facilities.</p>	Prohibited Use (A) & (W)
<p>2.f Privately owned sewage treatment facilities.</p>	Prohibited Use (A) & (W)
<p>2.g The placement of the leaching field of a subsurface wastewater disposal system less than six feet above the maximum water table level as measured at the time of annual high-water table.</p>	Prohibited Use (W) (Septic System)
<p>2.h On-site discharge of greater than 10,000 gallons per day of wastewater other than stormwater.</p>	Prohibited Use (A) & (W)
<p>2.i The excavation of gravel, sand or rock in any form to a depth greater than six feet above the historic high ground water table, except when incidental to the construction of a foundation or basement of a permitted structure for which a foundation or building permit has been obtained.</p>	Prohibited Use (A) & (W)
<p>2.j The processing and washing of earth materials.</p>	Prohibited Use (A) & (W)

2.k The rendering impervious of more than 50% of any lot.	Prohibited Use (A) & (W)
2.l The rendering impervious of more than 15% or 2,500 square feet of any lot, unless artificial recharge for excess runoff is provided (see § 301-4.6.5.3 below) not to exceed 50% of any one lot.	Prohibited Use (W)
2.m Dumping of snow and ice from outside of the district.	Prohibited Use (A) & (W)
2.n Junk and salvage yards and automobile graveyards.	Prohibited Use (A) & (W)
2.o Truck and bus terminals.	Prohibited Use (A) & (W)
2.p. Automobile distribution centers.	Prohibited Use (A) & (W)
2.q. Automotive service stations and repair shops.	Prohibited Use (A) & (W)
2.r. Car and truck washes.	Prohibited Use (A) & (W)
2. s. Dry-cleaning establishments.	Prohibited Use (A) & (W)
2.t. Storage of manure or other animal wastes generated from outside the Protection District.	Prohibited Use (A) & (W)
2.u. Storage of animal manure unless covered and contained in accordance with the specifications of the U.S. Soil Conservation Service.	Prohibited Use (W)
2.v. Storage of sludge or septage.	Prohibited Use (A) & (W)
2.w. Land filling of sludge and septage as defined in 310 CMR 32.05.	Prohibited Use (A) & (W)
2.x. Individual sewage disposal systems designed in accordance with 310 CMR 15.00 to receive more than 110 gallons of sewage per quarter acre under one ownership per day, or more than 440 gallons of sewage per acre under one ownership per day.	Prohibited Use (A) & (W)
3.a. The outdoor application of any pesticide on the most current groundwater protection list without adoption of, or inconsistent with, a Department of Food and Agriculture approved integrated pest management program or pesticide management plan pursuant to 333 CMR 12.00, save for products that are: aerosol products, paint products, finished bait products or products applied directly to humans, domestic animals, or livestock.	Prohibited Use (W)
301-4.6.5. Additional requirements for permitted uses.	
1. Outdoor aboveground storage tanks for liquid petroleum products and liquid hazardous materials will be surrounded by secure secondary storage and containment areas capable of holding at least 150% of the sum total volume of the tanks. The containment areas will be protected from the accumulation of stormwater and will be kept in sound condition at all times.	Design Parameter – Outdoor Above Ground Storage Tank
2. Liquid petroleum products and liquid hazardous materials stored within a building shall be placed on a diked, impermeable surface capable of retaining at least 150% of their sum total volume, to prevent spills or leaks from reaching groundwater.	

<p>3. All runoff from impervious surfaces or otherwise due to industrial and commercial development, or due to the construction of new roads, shall be recharged on site by being diverted to stormwater infiltration basins covered with natural vegetation for surface infiltration to the greatest extent possible, or as otherwise directed jointly by the Sterling Department of Public Works and the Sterling Conservation Commission. Stormwater infiltration basins must be designed to handle a fifty-year storm. Dry wells and leaching catch basins, when allowed by the Sterling Department of Public Works and the Sterling Conservation Commission, must be preceded by oil, grease and sedimentation traps to facilitate removal of contaminants. Any and all infiltration and recharge structures shall be kept permanently in full working order by the owner of the site. An annual maintenance plan shall be submitted to, and approved by, the Building Inspector and the Sterling Department of Public Works to assure that the methods used for on-site recharge and infiltration shall remain effective</p>	<p>Stormwater Infiltration Design Parameter</p>
<p>301-4.6.6. Pre-existing uses and structures</p>	
<p>1. Structures. Any existing structure, or use of such structure, lawful on the effective date of this § 301-4.6 may continue although such structure or use does not conform to the requirements of this § 301-4.6. Any such existing structure may be repaired, enlarged, maintained, and improved; however, any enlargement must conform to the regulations contained in this § 301-4.6.</p>	
<p>2. Uses. Any existing use lawful on the effective date of this § 301-4.6 may continue although such use does not conform to the requirements of this § 301-4.6. Any change, expansion, extension or repair of such nonconforming use must, however, conform to the regulations contained in this § 301-4.6, save for the repair or replacement, not to result in an increase in design capacity above the original design, of a private on-site wastewater disposal system which must conform as much as possible, in the opinion of the Sterling Board of Health, to the regulations contained in this section and to the regulations of the Sterling Board of Health.</p>	
<p>301-4.6.7. Variance</p>	
<p>Use variance solely from the provisions of § 301-4.6 may be granted by the Sterling Board of Health, acting as the permit granting authority in the stead of the Board of Appeals following the provisions of Section 1.4.3.1(a) and (b) and any applicable sections of Chapter 40A, Massachusetts General Laws, as amended.</p>	
<p>S301-6.4 Site plan review.</p>	
<p>6.4.1. Applicability. The following types of activities and uses require site plan review by the Planning Board:</p> <ol style="list-style-type: none"> 1. Construction, exterior alteration, or exterior expansion of, or change of use within a municipal, institutional, commercial, industrial, or multifamily structure involving more than 500 square feet. 2. Construction or expansion of a parking lot for a municipal, institutional, commercial, industrial, or multifamily structure or purpose. 3. Grading or clearing more than 10% of a lot, except for the following: landscaping on a lot with an existing structure or a proposed single- or two-family dwelling; clearing necessary for percolation and other site tests; work incidental to agricultural activity, work in conjunction with an approved subdivision plan, or work pursuant to an earth removal permit. 	<p>Yes, This Site requires a Site Plan Review</p>

Sterling, MA Subdivision Regulations	
4330. Storm Drains	
4331. Except where drainage swales are used, catch basins will be required on both sides of the roadway on continuous grades at intervals of not more than two-hundred fifty (250) feet. Storm drains and culverts shall be no less than twelve (12) inches inside diameter and shall be of greater size if required by design considerations. All drains shall have a minimum of three (3) foot cover, except where reinforced concrete pipe is used and there the minimum cover shall be two (2) feet. Pipe approved by the Massachusetts Department of Public Works (DPW) shall be installed in accordance with DPW requirements. The sub-divider shall specify the class of pipe to be used.	Design Parameter – Stormwater Design
4332. Proper connections shall be made with any existing drains in adjacent streets or easements where they may exist and prove adequate to accommodate the drainage flow from the subdivision, and in the absence of such facilities, or the adequacy of the same, it shall be the responsibility of the development to extend drains from the subdivision as required a manner determined by the Department of Public Works, or Planning Board.	
4333. Side drain during construction may be required by the Department of Public Works. Six (6) inch subdrains, five (5) feet off the sideline may be required in all cuts over three (3) feet.	
4340. Catch Basins	
Catch basins shall be provided with grates installed and approved as to design by the Board. Manholes shall be provided at changes in direction, whenever there is a change in size of pipe and so as to eliminate the draining of one basin into another basin. Catch basins and manholes shall be constructed with standard concrete. Catch basins shall be fitted with a grease trap of a design to be approved by the Board and with a minimum two-foot sump available below the trap inlet. Catch basins will be provided with granite curb inlets with a six (6) inch reveal and with three (3) inch vertical openings along the entire length of the grates. The curb inlets will be blended to the bituminous berms with beveled granite transition pieces. Where the curb inlets are located on a curve, they will be curved to match the curvature of the paved surface.	Design Parameter – Stormwater Design

CMR DEP 22.21 Groundwater Supply Protection	
(2) Wellhead Protection Zoning and Nonzoning Controls	
(a) Wellhead protection zoning and non-zoning controls submitted to the Department in accordance with 310 CMR 22.21(1), shall collectively prohibit the siting of the following land uses within the Zone II, or Zone III if the criteria of 310 CMR 22.21(1)(f) have been met, of the proposed well, wellfield, or spring, whichever is applicable:	
1. landfills and open dumps, as defined in 310 CMR 19.006: Definitions;	Sterling Landfill is located outside of the Zone II Limits

<p>2. landfills receiving only wastewater residuals and/or septage (wastewater residuals "monofils") approved by the Department pursuant to M.G.L. c. 21, § 26 through 53; M.G.L. c. 111, § 17; M.G.L. c. 83, §§ 6 and 7, and any regulations promulgated thereunder.</p>	<p>Sterling Landfill is located outside of the Zone II Limits</p>
<p>3. automobile graveyards and junkyard, as defined in M.G.L. c. 140B, § 1;</p>	
<p>4. stockpiling and disposal of snow or ice removed from highways and streets located outside of Zone II that contains sodium chloride, chemically treated abrasives or other chemicals used for snow and ice removal</p>	<p>Design Parameter – Salt Shed</p>
<p>5. petroleum, fuel oil and heating oil bulk stations and terminals, including, but not limited to, those listed under Standard Industrial Classification (SIC) Codes 5171 (not including liquified petroleum gas) and 5983. SIC Codes are established by the U.S. Office of Management and Budget and may be determined by referring to the publication, Standard Industrial Classification Manual</p>	<p>Design Parameter - Fueling station</p>
<p>6. treatment or disposal works subject to 314 CMR 5.00: Ground Water Discharge Permit Program for wastewater other than sanitary sewage. This prohibition includes, but is not limited to, treatment or disposal works related to activities under the Standard Industrial Classification (SIC) Codes set forth in 310 CMR 15.004(6) (Title 5), except the following:</p> <ul style="list-style-type: none"> a. the replacement or repair of an existing system(s) that will not result in a design capacity greater than the design capacity of the existing system(s); and b. treatment works approved by the Department designed for the treatment of contaminated ground or surface waters and operated in compliance with 314 CMR5.05(3) or (13); and c. publicly owned treatment works, or POTWs. 	
<p>7. facilities that generate, treat, store or dispose of hazardous waste that are subject to M.G.L. c. 21C and 310 CMR 30.000: Hazardous Waste, except for the following:</p> <ul style="list-style-type: none"> a. very small quantity generators, as defined by 310 CMR 30.00: Hazardous Waste. b. household hazardous waste collection centers or events operated pursuant to 310 CMR 30.390: Special Provisions for Accumulation of Household Hazardous Waste And/or Hazardous Waste Generated by Very Small Quantity Generators. c. waste oil retention facilities required by M.G.L. c. 21, § 52A; and d. treatment works approved by the Department designed in accordance with 314 CMR 5.00: Ground Water Discharge Permit Program for the treatment of contaminated ground or surface waters. 	<p>Design Parameter – Hazardous Waste Removal</p>
<p>8. any floor drainage systems in existing facilities, in industrial or commercial hazardous material and/or hazardous waste process areas or storage areas, which discharge to the ground without a DEP permit or authorization. Any existing facility with such a drainage system shall be required to either seal the floor drain (in accordance with the state plumbing code, 248 CMR 10.00: Uniform State Plumbing Code), connect the drain to a municipal sewer system (with all appropriate permits and pre-treatment), or connect the drain to a holding tank meeting the requirements of all appropriate DEP regulations and policies.</p>	

<p>(b) Wellhead protection zoning and non-zoning controls submitted to the Department in accordance with 310 CMR 22.21(1), shall collectively prohibit the siting of the following and uses within the Zone II, or Zone III if the criteria of 310 CMR 22.21(1)(f) have been met, of the proposed well, wellfield, or spring, whichever is applicable, unless designed in accordance with the performance standards specified below in 310 CMR 22.21(2)(b)1. through 7.:</p>	
<p>1. storage of sludge and septage, as defined in 310 CMR 32.05: Definitions, unless such storage is in compliance with 310 CMR 32.30: Requirements for Any Storage of Sludge or Septage and 32.31: Additional Requirements for Long-term Storage of Sludge or Septage;</p>	
<p>2. storage of sodium chloride, chemically treated abrasives or other chemicals used for the removal of ice and snow on roads, unless such storage is within a structure designed to prevent the generation and escape of contaminated runoff or leachate;</p>	Design Parameter – Salt Shed
<p>3. storage of commercial fertilizers, as defined in M.G.L. c. 128, § 64, unless such storage is within a structure designed to prevent the generation and escape of contaminated runoff or leachate;</p>	Design Parameter – If fertilizers are being stored on site
<p>4. storage of animal manures, unless such storage is within a structure designed to prevent the generation and escape of contaminated runoff and leachate;</p>	
<p>5. storage of liquid hazardous materials, as defined in M.G.L. c. 21E, and/or liquid petroleum products unless such storage is:</p> <ul style="list-style-type: none"> a. above ground level. b. on an impervious surface; and c. either: <ul style="list-style-type: none"> (i) in container(s) or above-ground tank(s) within a building; or (ii) outdoors in covered container(s) or above-ground tank(s) in an area that has a containment system designed and operated to hold either 10% of the total possible storage capacity of all containers, or 110% of the largest container's storage capacity, whichever is greater; however, these storage requirements shall not apply to the replacement of existing tanks or systems for the keeping, dispensing, or storing of gasoline provided the replacement is performed in a manner consistent with state and local requirements 	Design Parameter – Storage Tanks
<p>6. the removal of soil, loam, sand, gravel or any other mineral substances within four feet of the historical high groundwater table elevation (as determined from monitoring wells and historical water table fluctuation data compiled by the United States Geological Survey), unless the substances removed are redeposited within 45 days of removal on site to achieve a final grading greater than four feet above the historical high water mark, and except for excavations for the construction of building foundations or the installation of utility works, or wetland restoration work conducted in accordance with a valid Order of Condition issued pursuant to M.G.L. c. 131, § 40;</p>	Design Parameter – Stormwater Design
<p>7. and land uses that result in the rendering impervious of more than 15% or 2500 square feet of any lot or parcel, whichever is greater, unless a system for artificial recharge of precipitation is provided that will not result in the degradation of groundwater quality.</p>	Design Parameter – Impervious Area

MEMORANDUM

TO: File

FROM: Colleen Kennedy

DATE: August 26, 2021

SUBJECT: Sterling Public Works Zoning and Permitting Review

SITE INFORMATION:

Parameter	Information	Notes:
Site Address:	171 Worcester Rd	
Map/Lot:	114/62	
Size (acres):	3.6 acres	
Zoning District	Commercial	
Book/Page:	03944/0551	

ZONING INFORMATION:

Zoning District: Commercial

Zoning Map Date: May 2019

Zoning By-Law Date: Updated June 6, 2020

Overlay Districts:

District	Applicable	Notes:
Aquifer Protection (Zone II)	YES	
Floodplain (FEMA 100 Year Data used here, FIRM data applies to bylaw)	NO	
Stillwater River Protection	NO	
Wireless Communication (Wireless Communications Facilities allowed in sectioned area only)	YES	

DIMENSIONAL REGULATIONS:

DIMENSION	Required	Provided (existing)	Notes
Min. Lot Area (s.f.)	-	3.6 ac	
Min. Lot Frontage (ft.)	-	636'	
Min. Lot Width (ft.)	-	240'	
Min. Front Yard (ft.)	40'	25'	Existing front setback does not meet reg
Min. Side Yard (ft.)	20'	123'	
Min. Rear Yard (ft.)	25'	27'	
Floor Area Ratio	0.5		Building % = 8.3%
Building Height	36'	-	

Notes:

PERMITTING SUMMARY:

1.) Sterling Conservation Commission - Stormwater Management Permit

- Permit applies to all new development and redevelopment projects
- Approved Wellhead Protection Zone II
- Public Water Supply Protection Area Zone A
- Watershed protection zone buffer
- 200-foot Riverfront area (stream on adjacent parcel)
- Parcel is located within 100' Wetland buffer of wetlands on adjacent parcel
- Wachusett Reservoir

2.) Sterling Planning Board – Site Plan Review

- Review applies to all construction, exterior alteration, or exterior expansion of, or change of use within a municipal, institutional, commercial, industrial, or multifamily structure involving more than 500 square feet.

Note: Municipal use is exempt per section 301-2.3.1. of the Zoning Bylaws in “Table of Principal Uses.” Additional research with the Building Commissioner will be necessary to determine if a site plan review will be required.

3.) Sterling Planning Board – Earth Removal Permit

- An Earth Removal Permit is required for any excavation amount exceeding 1,000 cy

DESIGN AND PERMITTING CONSIDERATIONS:

Zoning Bylaws	Notes
63-4 Earth Removal Permit required.	
<p>a. No earth in the amount equal to or in excess of 1,000 cubic yards shall be moved from any parcel of land within the Town of Sterling to another parcel either within or without the Town unless such removal is authorized by a permit issued by the Board and the parcel is in a district where earth removal is an allowed use in Section 2.3.1D7 of the Protective Bylaw or a variance for such removal has been granted by the Board of Appeals under Section 6.2.2.A4 of the Protective Bylaw. Any removal over 1,000 cubic yards without a permit will be deemed a violation of this bylaw.</p>	An Earth Removal Permit is required for any excavation amount exceeding 1,000 cy
<p>b. Removal of earth in an amount up to but not including 1,000 cubic yards shall require a permit but will be exempt from § 63-5, Public hearing, of this bylaw. Any or all of the requirements under § 63-6, Application for permit, may be waived at the discretion of the Board.</p>	
<p>The removal of earth materials from any parcel of land in a definitive subdivision that has been approved by the Planning Board shall be allowed in the same manner as removal from other parcels of land in the Town of Sterling zoned Light Industrial. Consequently, tentative or final approval of a subdivision plan by the Planning Board shall not be construed as authorizing the removal of earth materials from the premises, even though it is in connection with the construction of streets shown on the plan.</p>	
63-12 Exemptions	
<p>This bylaw shall not apply to the removal of earth as defined herein in amounts less than 1,000 cubic yards (except for requirements outlined in § 63-4B of the bylaw) in connection with the construction of any building, septic system and appurtenant walk or driveway for which a permit has been granted by the Select Board or other licensing body or the construction of a street that has been approved by the Planning Board, provided that the quantity of material removed does not exceed that displaced by the portion of building, walk, driveway, street or similar appurtenance below finished grade, or to removal in the course of customary use of the land for a farm, garden or nursery. The above exemptions do not cover removal of earth materials from the premises involving topographical changes or soil stripping or loam-stripping activities, nor shall the tentative or final approval of subdivision plans be construed as authorizing the removal of earth material from the premises, even though in connection with the construction of streets as shown on the plan, without the issuance of an earth removal permit under this bylaw.</p>	Permit would still be required for excavation for subsurface stormwater BMPs and grading changes
162-6 Prohibited activities (Storm Drains)	
<p>a. Illegal discharges. No person shall dump, discharge, cause or allow to be discharged any pollutant or non-stormwater discharge into storm drain systems, watercourses, or into the waters of the commonwealth.</p>	
<p>b. Illicit connections. No person shall construct, use, allow, maintain, or continue any illicit connection to storm drain systems, regardless of whether the connection was permissible under applicable law, regulation or custom at the time of connection.</p>	

c. Obstruction of storm drain systems. No person shall obstruct or interfere with the normal flow of stormwater in or out of storm drain systems without prior approval from the Board of Public Works or its designated agent.	
142 Retention/Detention Ponds/Basins	
142-1 Determination of necessity for enclosure Outdoor, man-made retention/detention ponds/basins, as may be required to be built by the Planning Board under its Subdivision Rules and Regulations, may be required by the Building Inspector to be protected by a fence, wall or other enclosure, or combination thereof, of durable material if he/she determines that such is necessary for the protection of children. Consideration will be given to the slope and materials of construction of the banks and to the depth of the retained water.	Design Parameter – If proposing an infiltration/detention basin, the Building Inspector may require it to be enclosed with fencing
142-2 Barrier Requirements The barrier, if such is required, shall be constructed so as to afford no external handholds or footholds, of materials which are impenetrable by toddlers, at least four feet in height so that a toddler cannot grasp its top by jumping or reaching, and equipped with a self-enclosing and positive self-latching closure mechanism at a height above the reach of toddlers and provided with hardware for permanent locking. Sufficiently wide gated access shall be provided for maintenance purposes.	Fencing shall be at least 4' high
164-5 Applicability; stormwater management permit	
A. This bylaw shall apply to all new development and redevelopment, including, but not limited to, site plan applications, subdivision applications, land grading applications, or land use conversion applications. This bylaw shall also apply to other activities that will increase the amount of stormwater runoff or pollutants from a parcel of land, or any activity that will alter the drainage characteristics of a parcel of land, unless exempt pursuant to § 164-5D of this bylaw. All new development and redevelopment under the jurisdiction of this bylaw as prescribed in this bylaw shall be required to obtain a stormwater management permit.	Permitting – Stormwater Management Permit
301-2.3. Use Regulations	
301-2.3.1. Table of Principal Uses	
B. Exempt Uses and Community Facilities	
5. Municipal Facility – Y in Commercial District	*Municipal Exemption*
301-4.6.2. Geographical applicability and powers.	
2. The Water Resource Protection Districts are all land areas in the Town of Sterling which are within either a delineated Zone II or are within a one-half mile radius of an existing municipal well which has no delineated Zone II.	
301-4.6 Aquifer (A) and Water Resource Protection (W) Districts	
1.a. Underground storage of liquid petroleum products of any kind, excluding the liquefied petroleum gases propane, propylene, butanes, butylenes and liquefied natural gas, except for replacement of tanks existing at the time of adoption of the bylaw	Prohibited Use (A) & (W)

<p>1.b. Storage of liquid petroleum products of any kind excluding the liquefied petroleum gases propane, propylene, butanes, butylenes and liquefied natural gas except those incidentals to:</p> <ol style="list-style-type: none"> 1. Normal household use and outdoor maintenance or the heating of a structure. 2. Waste oil retention facilities required by MGL c. 21, § 52A. 3. Emergency generators required by statute, rule or regulation. 4. Treatment works required by the DEP designed in accordance with 314 CMR 5.00 for the treatment of contaminated ground or surface waters, such storage to conform to § 301-4.6.5.1 and 2 below. 	Prohibited Use (A)
<p>1.c. Underground storage of any liquid material or chemical which could degrade the quality of the groundwater should it be released into or onto the ground. (Allowed aboveground storage of such liquids must conform to § 301-4.6.5.1 and 2 below.)</p>	Prohibited Use (A) & (W)
<p>2.a. Any use which involves the manufacture, generation, processing, packaging, repackaging, use, storage, treatment disposal or transportation of toxic or hazardous materials or waste, except the following:</p> <ol style="list-style-type: none"> 1. Very small quantity generators as defined under 310 CMR 30.00. 2. Household hazardous waste collection centers and events under 310 CMR 30.390. 3. Waste oil retention facilities required by MGL c. 21, § 52A. 4. Water remediation treatment works approved under 314 CMR 5.00. 	Prohibited Use (A) & (W)
<p>2.b The outdoor storage of road salt or other deicing chemicals.</p>	Prohibited Use (A) & (W) Design Parameter - Salt Shed
<p>2.c The outdoor storage of fertilizers, soil conditioners, herbicides, and pesticides.</p>	Prohibited Use (W)
<p>2.d Sanitary landfill or other disposal of solid waste, not including brush and stumps.</p>	Prohibited Use (A) & (W)
<p>2.e Municipal sewage treatment facilities.</p>	Prohibited Use (A) & (W)
<p>2.f Privately owned sewage treatment facilities.</p>	Prohibited Use (A) & (W)
<p>2.g The placement of the leaching field of a subsurface wastewater disposal system less than six feet above the maximum water table level as measured at the time of annual high-water table.</p>	Prohibited Use (W) (Septic System)
<p>2.h On-site discharge of greater than 10,000 gallons per day of wastewater other than stormwater.</p>	Prohibited Use (A) & (W)
<p>2.i The excavation of gravel, sand or rock in any form to a depth greater than six feet above the historic high ground water table, except when incidental to the construction of a foundation or basement of a permitted structure for which a foundation or building permit has been obtained.</p>	Prohibited Use (A) & (W)
<p>2.j The processing and washing of earth materials.</p>	Prohibited Use (A) & (W)
<p>2.k The rendering impervious of more than 50% of any lot.</p>	Prohibited Use (A) & (W)

2.l The rendering impervious of more than 15% or 2,500 square feet of any lot, unless artificial recharge for excess runoff is provided (see § 301-4.6.5.3 below) not to exceed 50% of any one lot.	Prohibited Use (W)
2.m Dumping of snow and ice from outside of the district.	Prohibited Use (A) & (W)
2.n Junk and salvage yards and automobile graveyards.	Prohibited Use (A) & (W)
2.o Truck and bus terminals.	Prohibited Use (A) & (W)
2.p. Automobile distribution centers.	Prohibited Use (A) & (W)
2.q. Automotive service stations and repair shops.	Prohibited Use (A) & (W)
2.r. Car and truck washes.	Prohibited Use (A) & (W)
2. s. Dry-cleaning establishments.	Prohibited Use (A) & (W)
2.t. Storage of manure or other animal wastes generated from outside the Protection District.	Prohibited Use (A) & (W)
2.u. Storage of animal manure unless covered and contained in accordance with the specifications of the U.S. Soil Conservation Service.	Prohibited Use (W)
2.v. Storage of sludge or septage.	Prohibited Use (A) & (W)
2.w. Land filling of sludge and septage as defined in 310 CMR 32.05.	Prohibited Use (A) & (W)
2.x. Individual sewage disposal systems designed in accordance with 310 CMR 15.00 to receive more than 110 gallons of sewage per quarter acre under one ownership per day, or more than 440 gallons of sewage per acre under one ownership per day.	Prohibited Use (A) & (W)
3.a. The outdoor application of any pesticide on the most current groundwater protection list without adoption of, or inconsistent with, a Department of Food and Agriculture approved integrated pest management program or pesticide management plan pursuant to 333 CMR 12.00, save for products that are: aerosol products, paint products, finished bait products or products applied directly to humans, domestic animals, or livestock.	Prohibited Use (W)
301-4.6.5. Additional requirements for permitted uses.	
1. Outdoor aboveground storage tanks for liquid petroleum products and liquid hazardous materials will be surrounded by secure secondary storage and containment areas capable of holding at least 150% of the sum total volume of the tanks. The containment areas will be protected from the accumulation of stormwater and will be kept in sound condition at all times.	Design Parameter – Outdoor Above Ground Storage Tank
2. Liquid petroleum products and liquid hazardous materials stored within a building shall be placed on a diked, impermeable surface capable of retaining at least 150% of their sum total volume, to prevent spills or leaks from reaching groundwater.	

<p>3. All runoff from impervious surfaces or otherwise due to industrial and commercial development, or due to the construction of new roads, shall be recharged on site by being diverted to stormwater infiltration basins covered with natural vegetation for surface infiltration to the greatest extent possible, or as otherwise directed jointly by the Sterling Department of Public Works and the Sterling Conservation Commission. Stormwater infiltration basins must be designed to handle a fifty-year storm. Dry wells and leaching catch basins, when allowed by the Sterling Department of Public Works and the Sterling Conservation Commission, must be preceded by oil, grease and sedimentation traps to facilitate removal of contaminants. Any and all infiltration and recharge structures shall be kept permanently in full working order by the owner of the site. An annual maintenance plan shall be submitted to, and approved by, the Building Inspector and the Sterling Department of Public Works to assure that the methods used for on-site recharge and infiltration shall remain effective</p>	<p>Stormwater Infiltration Design Parameter</p>
<p>301-4.6.6. Pre-existing uses and structures</p>	
<p>1. Structures. Any existing structure, or use of such structure, lawful on the effective date of this § 301-4.6 may continue although such structure or use does not conform to the requirements of this § 301-4.6. Any such existing structure may be repaired, enlarged, maintained, and improved; however, any enlargement must conform to the regulations contained in this § 301-4.6.</p>	
<p>2. Uses. Any existing use lawful on the effective date of this § 301-4.6 may continue although such use does not conform to the requirements of this § 301-4.6. Any change, expansion, extension or repair of such nonconforming use must, however, conform to the regulations contained in this § 301-4.6, save for the repair or replacement, not to result in an increase in design capacity above the original design, of a private on-site wastewater disposal system which must conform as much as possible, in the opinion of the Sterling Board of Health, to the regulations contained in this section and to the regulations of the Sterling Board of Health.</p>	
<p>301-4.6.7. Variance</p>	
<p>Use variance solely from the provisions of § 301-4.6 may be granted by the Sterling Board of Health, acting as the permit granting authority in the stead of the Board of Appeals following the provisions of Section 1.4.3.1(a) and (b) and any applicable sections of Chapter 40A, Massachusetts General Laws, as amended.</p>	
<p>S301-6.4 Site plan review.</p>	
<p>6.4.1. Applicability. The following types of activities and uses require site plan review by the Planning Board:</p> <ol style="list-style-type: none"> 1. Construction, exterior alteration, or exterior expansion of, or change of use within a municipal, institutional, commercial, industrial, or multifamily structure involving more than 500 square feet. 2. Construction or expansion of a parking lot for a municipal, institutional, commercial, industrial, or multifamily structure or purpose. 3. Grading or clearing more than 10% of a lot, except for the following: landscaping on a lot with an existing structure or a proposed single- or two-family dwelling; clearing necessary for percolation and other site tests; work incidental to agricultural activity, work in conjunction with an approved subdivision plan, or work pursuant to an earth removal permit. 	<p>Yes, This Site requires a Site Plan Review</p>

Sterling, MA Subdivision Regulations	
4330. Storm Drains	
4331. Except where drainage swales are used, catch basins will be required on both sides of the roadway on continuous grades at intervals of not more than two-hundred fifty (250) feet. Storm drains and culverts shall be no less than twelve (12) inches inside diameter and shall be of greater size if required by design considerations. All drains shall have a minimum of three (3) foot cover, except where reinforced concrete pipe is used and there the minimum cover shall be two (2) feet. Pipe approved by the Massachusetts Department of Public Works (DPW) shall be installed in accordance with DPW requirements. The sub-divider shall specific the class of pipe to be used.	Design Parameter – Stormwater Design
4332. Proper connections shall be made with any existing drains in adjacent streets or easements where they may exist and prove adequate to accommodate the drainage flow from the subdivision, and in the absence of such facilities, or the adequacy of the same, it shall be the responsibility of the development to extend drains from the subdivision as required a manner determined by the Department of Public Works, or Planning Board.	
4333. Side drain during construction may be required by the Department of Public Works. Six (6) inch subdrains, five (5) feet off the sideline may be required in all cuts over three (3) feet.	
4340. Catch Basins	
Catch basins shall be provided with grates installed and approved as to design by the Board. Manholes shall be provided at changes in direction, whenever there is a change in size of pipe and so as to eliminate the draining of one basin into another basin. Catch basins and manholes shall be constructed with standard concrete. Catch basins shall be fitted with a grease trap of a design to be approved by the Board and with a minimum two-foot sump available below the trap inlet. Catch basins will be provided with granite curb inlets with a six (6) inch reveal and with three (3) inch vertical openings along the entire length of the grates. The curb inlets will be blended to the bituminous berms with beveled granite transition pieces. Where the curb inlets are located on a curve, they will be curved to match the curvature of the paved surface.	Design Parameter – Stormwater Design

CMR DEP 22.21 Groundwater Supply Protection	
(2) Wellhead Protection Zoning and Nonzoning Controls	
(a) Wellhead protection zoning and non-zoning controls submitted to the Department in accordance with 310 CMR 22.21(1), shall collectively prohibit the siting of the following land uses within the Zone II, or Zone III if the criteria of 310 CMR 22.21(1)(f) have been met, of the proposed well, wellfield, or spring, whichever is applicable:	
1. landfills and open dumps, as defined in 310 CMR 19.006: Definitions;	
2. landfills receiving only wastewater residuals and/or septage (wastewater residuals "monofils") approved by the Department pursuant to M.G.L. c. 21, § 26 through 53; M.G.L. c. 111, § 17; M.G.L. c. 83, §§ 6 and 7, and any regulations promulgated thereunder.	
3. automobile graveyards and junkyard, as defined in M.G.L. c. 140B, § 1;	

<p>4. stockpiling and disposal of snow or ice removed from highways and streets located outside of Zone II that contains sodium chloride, chemically treated abrasives or other chemicals used for snow and ice removal</p>	<p>Design Parameter – Salt Shed</p>
<p>5. petroleum, fuel oil and heating oil bulk stations and terminals, including, but not limited to, those listed under Standard Industrial Classification (SIC) Codes 5171 (not including liquified petroleum gas) and 5983. SIC Codes are established by the U.S. Office of Management and Budget and may be determined by referring to the publication, Standard Industrial Classification Manual</p>	<p>Design Parameter - Fueling station</p>
<p>6. treatment or disposal works subject to 314 CMR 5.00: Ground Water Discharge Permit Program for wastewater other than sanitary sewage. This prohibition includes, but is not limited to, treatment or disposal works related to activities under the Standard Industrial Classification (SIC) Codes set forth in 310 CMR 15.004(6) (Title 5), except the following:</p> <ul style="list-style-type: none"> a. the replacement or repair of an existing system(s) that will not result in a design capacity greater than the design capacity of the existing system(s); and b. treatment works approved by the Department designed for the treatment of contaminated ground or surface waters and operated in compliance with 314 CMR 5.05(3) or (13); and c. publicly owned treatment works, or POTWs. 	
<p>7. facilities that generate, treat, store or dispose of hazardous waste that are subject to M.G.L. c. 21C and 310 CMR 30.000: Hazardous Waste, except for the following:</p> <ul style="list-style-type: none"> a. very small quantity generators, as defined by 310 CMR 30.00: Hazardous Waste. b. household hazardous waste collection centers or events operated pursuant to 310 CMR 30.390: Special Provisions for Accumulation of Household Hazardous Waste And/or Hazardous Waste Generated by Very Small Quantity Generators. c. waste oil retention facilities required by M.G.L. c. 21, § 52A; and d. treatment works approved by the Department designed in accordance with 314 CMR 5.00: Ground Water Discharge Permit Program for the treatment of contaminated ground or surface waters. 	<p>Design Parameter – Hazardous Waste Removal</p>
<p>8. any floor drainage systems in existing facilities, in industrial or commercial hazardous material and/or hazardous waste process areas or storage areas, which discharge to the ground without a DEP permit or authorization. Any existing facility with such a drainage system shall be required to either seal the floor drain (in accordance with the state plumbing code, 248 CMR 10.00: Uniform State Plumbing Code), connect the drain to a municipal sewer system (with all appropriate permits and pre-treatment), or connect the drain to a holding tank meeting the requirements of all appropriate DEP regulations and policies.</p>	

<p>(b) Wellhead protection zoning and non-zoning controls submitted to the Department in accordance with 310 CMR 22.21(1), shall collectively prohibit the siting of the following and uses within the Zone II, or Zone III if the criteria of 310 CMR 22.21(1)(f) have been met, of the proposed well, wellfield, or spring, whichever is applicable, unless designed in accordance with the performance standards specified below in 310 CMR 22.21(2)(b)1. through 7.:</p>	
<p>1. storage of sludge and septage, as defined in 310 CMR 32.05: Definitions, unless such storage is in compliance with 310 CMR 32.30: Requirements for Any Storage of Sludge or Septage and 32.31: Additional Requirements for Long-term Storage of Sludge or Septage;</p>	
<p>2. storage of sodium chloride, chemically treated abrasives or other chemicals used for the removal of ice and snow on roads, unless such storage is within a structure designed to prevent the generation and escape of contaminated runoff or leachate;</p>	Design Parameter – Salt Shed
<p>3. storage of commercial fertilizers, as defined in M.G.L. c. 128, § 64, unless such storage is within a structure designed to prevent the generation and escape of contaminated runoff or leachate;</p>	Design Parameter – If fertilizers are being stored on site
<p>4. storage of animal manures, unless such storage is within a structure designed to prevent the generation and escape of contaminated runoff and leachate;</p>	
<p>5. storage of liquid hazardous materials, as defined in M.G.L. c. 21E, and/or liquid petroleum products unless such storage is:</p> <ul style="list-style-type: none"> a. above ground level. b. on an impervious surface; and c. either: <ul style="list-style-type: none"> (i) in container(s) or above-ground tank(s) within a building; or (ii) outdoors in covered container(s) or above-ground tank(s) in an area that has a containment system designed and operated to hold either 10% of the total possible storage capacity of all containers, or 110% of the largest container's storage capacity, whichever is greater; however, these storage requirements shall not apply to the replacement of existing tanks or systems for the keeping, dispensing, or storing of gasoline provided the replacement is performed in a manner consistent with state and local requirements 	Design Parameter – Storage Tanks
<p>6. the removal of soil, loam, sand, gravel or any other mineral substances within four feet of the historical high groundwater table elevation (as determined from monitoring wells and historical water table fluctuation data compiled by the United States Geological Survey), unless the substances removed are redeposited within 45 days of removal on site to achieve a final grading greater than four feet above the historical high water mark, and except for excavations for the construction of building foundations or the installation of utility works, or wetland restoration work conducted in accordance with a valid Order of Condition issued pursuant to M.G.L. c. 131, § 40;</p>	Design Parameter – Stormwater Design
<p>7. and land uses that result in the rendering impervious of more than 15% or 2500 square feet of any lot or parcel, whichever is greater, unless a system for artificial recharge of precipitation is provided that will not result in the degradation of groundwater quality.</p>	Design Parameter – Impervious Area

Town of Sterling
Department of Public Works
New DPW Facility – Feasibility Study

Existing Conditions Assessment

MEMORANDUM

TO: Town of Sterling
FROM: Daniel G. Tenney III, AIA
DATE: As observed July 28, 2021
SUBJECT: Sterling Department of Public Works Facility Assessment

ADMINISTRATION / STAFF AREA

Description

The administration / staff area is the two-story portion of the attached office/staff/garage building, closest to the street. It contains administrative offices and toilet rooms on the ground floor, with a combined break/meeting room, staff locker room, a toilet room and file storage at the second floor. There are two stairs and an enclosed chair lift for second-floor access. There is no basement or attic.

This portion of the building was originally a single story; the second floor, stairwells and chair lift shaft were added later.



Substructure: Foundations were not observable, and no existing documentation was available for review. It is assumed that this portion of the building is supported on conventional shallow footings, and that the first floor is a concrete slab-on-grade. No signs of deterioration or differential settlement were observed.

Superstructure: All interior areas are fully finished, so the wall, floor and roof structural systems could not be observed. It is likely that structural materials and framing vary with the age of construction. There were no observed signs of structural distress or failure. It is assumed that all structural elements were in conformance with applicable codes at the time of construction.

Exterior Envelope: This portion of the building has a low-slope roof which is reported to leak in certain areas. There is evidence of water spilling over the roof edge in several areas, which may indicate failure of roof drains or parapet assemblies. The projecting soffit at the street side of the building is significantly stained and may be structurally compromised. If uncorrected this can lead to further leakage and deterioration of the roof edge and supporting wall structure below. The separate sloped roof section over the left-hand entrance and lift shaft appears to be in serviceable condition.



There are three or more different exterior wall finishes in this portion of the building – all appear to be in generally serviceable condition.



Exterior Openings: Exterior entry doors are in fair condition, although progressive corrosion of door bottoms and frames was observed. Thresholds do not meet ADA/MAAB accessibility standards. Frames are not thermally-broken.

Windows at the older lower story of this portion of the building are in fair to poor condition; failed sealant and fogging of some insulated glass panes were noted. It is not known if the window frames and/or sash are thermally-broken, but their performance should be considered marginal.



Interior Construction & Finishes: The observed conditions of floor, wall and ceiling finishes was generally good. Some staining of ceiling tiles due to roof leaks was noted at the second floor. Some areas, including the first-floor toilet rooms and main entrance lobby were under renovation at the time of our visit, apparently for the replacement of finishes. However, the overall configuration of partitions, doorways, etc., did not appear to be undergoing alteration.



Building Systems

- *Fire Protection:* An automatic fire sprinkler system is present in this area, but does not extend to all rooms and spaces. The first-floor corridor and the entire upper floor are sprinklered, but the first-floor offices and main entrance lobby are not. This is generally not in conformance with Building Code and NFPA standards, which typically require that all contiguous areas of any building be sprinklered. It is possible that the current fire protection configuration in the building was correctly permitted at the time of its installation, but this has not been verified. Compliance alternatives might include fire-rated separations, enhanced alarm systems, etc., but the presence of such measures has not been verified.
- *Plumbing:* No deficiencies in the plumbing system were noted or reported. However, toilet rooms, shower and kitchen area plumbing does not generally conform to ADA and MAAB requirements. In addition, the quantity of Men's, Women's and Unisex toilet rooms and fixtures should be verified against Plumbing Code requirements and the composition of staff and public users. This may be critical in the case of large number of attendees at public meetings or group training sessions.
- *Mechanical:* This portion of the complex is heated by a ducted warm-air system, with heated water supplied by the central oil-fired boiler. Fresh-air makeup provisions, if any, were not noted. It is assumed that exhaust air is extracted directly by ducted fans in toilet room and kitchen areas. Some second-floor areas are cooled by window-type air conditioners. No central air conditioning was noted.
- *Electrical:* There is a 50 kVA standby generator located near the main (left) entrance. Its Automatic Transfer Switch is located in the small office adjacent to the main entrance and distribution panels are located in the adjacent Electric/Water/Tel Data room. Only certain electrical loads are supplied by the generator, these appear to be distributed via breaker panel P3.



The interior switchgear and distribution panels appear to be relatively new and in good condition, although their location is cramped.

Lighting in this area is relatively new and illumination levels appear adequate. Lighting controls and emergency operation were not verified.

- *Alarms/Communications:* Tel/Data servers, patch panels, wiring and communication service points are chaotically arranged the Electric/Water/Tel Data room, and do not appear to be a robust and serviceable installation. Incoming and outgoing services, connections and capacities were not reviewed.



Accessibility: This portion of the building is generally accessible to persons with disabilities, although certain non-conforming conditions were observed. These include:

- **Accessible route** (Main Entrance) – broken asphalt paving and raised concrete slab edge do not meet ADA/MAAB standards. Some effort has been made to chamfer the slab edge, but differential settlement of the asphalt pavement has resulted in a non-conforming vertical “step”.
 - Note: similar conditions were noted at the employee entrance, although this is not designated as a public entrance.
 - There is no pavement marking for the accessible parking space(s). At least one van-accessible space is required.



- **Entry door threshold** – at both the public and employee entrances, the thresholds exceed the maximum ½” permitted under ADA and MAAB standards.

- **Chair lift door clearance** – the required 18” clearance at the latch/pull side of the chair lift doors was not present due to inadequate offset from the corners and intrusion of construction elements into the required clear floor space.
- **Door clearances and hardware** – there are multiple locations where the ADA/MAAB-required latch/pull and latch/push clearances were not present. The small office adjacent to the main entrance lacks accessible lever-type hardware.



- **Toilet and Shower rooms** – the first-floor toilet rooms were under renovation at the time of our inspection, so accessibility could not be fully evaluated. The second-floor toilet/shower room lacks required clearances and an accessible shower. These rooms generally do not appear to be large enough to accommodate the required fixtures and clearances. No insulation of under-sink plumbing was noted.



- **Kitchen Facilities** – the oven/cooktop and sink at the second floor break/meeting room do not meet ADA/ADA height and reach requirements.



Functionality / Operations: This portion of the DPW complex is generally usable for its required functions, although certain inherent deficiencies and conflicts were noted. These include the following:

- Lack of dedicated employee break room
- Location of employee facilities (locker room, toilet/shower room, break/meeting room at second floor
- Lack of accessible toilet, shower, and kitchen facilities
- Limited employee toilet facilities
- Limited storage space for files, plans, etc.; upper-floor location not convenient to Administrative and management staff
- Lack of dedicated Tel/Data space
- Overlap of public and DPW use of second-floor break/meeting room
- Lack of separate/secure access to public meeting room
- Inconsistent sprinkler system coverage
- Limited standby generator capacity – can't support 100% operations

MAINTENANCE SHOP, STORAGE GARAGE AND SHEDS



Description

This is combined single-story rear extension of the main DPW building, running from the rear of the Administration/Staff spaces towards the rear of the site. It is comprised of multiple individual attached elements, including the following in approximate sequence of construction:

1. The original garage – a CMU-block structure with a steel-framed gable roof containing approximately five (5) vehicle bays.
2. Attached sheds at the left side of the garage, including boiler room and storage spaces
3. The rear garage extension – a steel-framed multi-bay structure with a slightly lower gable roof than the original garage
4. Vehicle Maintenance bays extension – a 3-bay steel framed structure added to the right-hand side of the original garage, with additional interior height

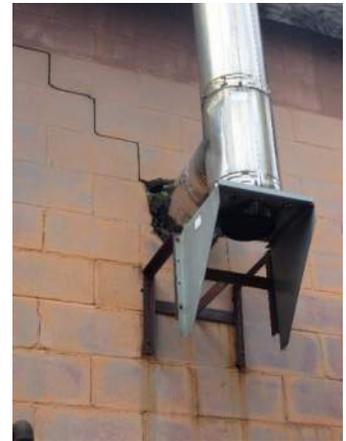
These areas contain several internal storage rooms and mezzanines. There are no basements or attic areas.

Substructure: Foundations were not observable, and no existing documentation was available for review. It is assumed that these portions of the building are supported on conventional shallow footings, and that the first floor is a concrete slab-on-grade. There are several areas where the CMU block walls of the original Garage structure, as well as the cast-in-place foundation walls of the rear garage extension are cracked and displaced, presumably due to some degree of differential foundation settlement or ground movement. It is not known if these conditions are on-going, but some degree of structural instability is evident. Further investigation and testing are recommended to establish the likelihood of continued structural movement or failure.



Superstructure: As noted above, structural materials and framing vary with the age of construction. It is assumed that all structural elements were in conformance with applicable codes at the time of their original construction.

The CMU walls of the original Garage show considerable signs of movement and cracking, typically in zig-zag patterns through the mortar joints, but also at continuous elements such as door lintels, etc. There is evidence of past repair efforts. There is a suspended ceiling in this area which did not allow observation of the underside of the roof framing, insulation, etc.



The attached sheds at the left-hand side of the Garage are in fair to poor condition. Sidewall cladding and flashing between the shed roof and the main Garage are deteriorated and failing. Chimney and vent penetrations are typically in poor condition.

The extended bays at the right-hand side of the Garage are the newest element, and appear to be in good condition overall. No signs of structural distress or displacement were noted in this area.

Exterior Envelope: These portions of the building have a range of roof and wall assemblies. All are in fair to poor condition as noted above, with the exception of the right-hand garage bay extension which is in good condition. Metal siding at the rear garage extension has been damaged in multiple locations by impact with vehicles or equipment. The walls and roof of the garage extension are not visibly insulated. Overall, the weathertightness and energy efficiency of the roofs and walls is substandard, leading to wind and water infiltration and excessive heating costs.



Exterior Openings: Exterior entry doors and overhead are in fair condition, although progressive corrosion of door bottoms and frames was observed. Overhead door operation and weatherstripping were not verified in detail. Frames and most door panels are not thermally-broken.

There are no windows in these portions of the building, but the rear garage extension has translucent fiberglass panels at the upper portion of its exterior walls. These provide some daylighting but are thermally inefficient and not fully weathertight.

Interior Construction & Finishes: There are few applied finishes in these portions of the building. There are some interior wood-framed storage rooms and mezzanines which are in usable condition; however they may not be in conformance with current building code requirements for non-combustible construction.

The original Garage area has a suspended acoustic tile (ACT) ceiling which incorporates lighting and some air-handling grilles. The ACT shows considerable staining and displacement of tiles and is in generally poor condition.



Building Systems

- *Fire Protection:* An automatic fire sprinkler system is present in this area, but is limited to the newer Garage bay extension. There is no apparent fire separation between this area and the rest of the garage. As noted earlier, this is generally not in conformance with Building Code and NFPA standards, which typically require that all contiguous areas of any building be sprinklered.
- *Plumbing:* No deficiencies in the plumbing system in this area were noted or reported.
 - It is not known if oil/water separators are provided for drainage from interior garage areas.
 - One floor drain appeared to have been capped.

- *Mechanical:* This portion of the complex is heated by ceiling-mounted unit heaters, with heated water supplied by the primary oil-fired boiler. The primary boiler is supplemented by an exterior wood-fired boiler as well as two interior two waste-oil-fired forced-air furnaces; however, these supplemental systems are not currently in use. The wood-fired unit is reportedly scheduled for removal. The rear garage extension is not heated.
 - There are ceiling-mounted destratification fans in the original and expended Garage areas.
 - There is some dedicated through-wall exhaust at the extended vehicle service bays. Fresh-air makeup and other exhaust provisions, if any, were not noted.
- *Electrical:* As noted above, the facility is served by a small standby generator with limited capacity. It is not known what circuits or equipment in the Garage areas are served by standby power.
 - Lighting in this area is relatively new and illumination levels appear adequate. Lighting controls and emergency operation were not verified.
- *Alarms/Communications:* -not reviewed for this area -

Accessibility: This portion of the building is typically used by DPW staff only and is not open to the general public. Therefore, conformance with ADA/MAAB accessibility standards is not generally required, although related OSHA requirements and other best practices may apply.

Functionality / Operations

The Garage portion of the DPW complex is generally usable for its required functions, although certain inherent deficiencies and conflicts were noted. These include the following:

- Limited high-bay space for effective vehicle hoisting and service
- No pull-through bay for vehicle service operations
- Limited vehicle lift capacity and location
- No dedicated Wash Bay
- Limited Parts storage space
- No dedicated vehicle exhaust system
- Lack of centralized fluids storage and distribution system
- General lack of compartmentalized, secure and temperature-controlled storage for hand tools, chemicals, supplies, etc.
- Lack of designated storage for flammable fluids
- No separation of Vehicle Maintenance and general-use garage and storage areas
- No separate Mechanics' toilet or locker facilities
- Mechanic's office has poor visibility of vehicle service bays and exterior yard operations
- Insufficient storage space for vehicles and equipment. Much of DPW fleet and equipment such as plows, salt bodies, etc. are stored outdoors.
- Incomplete sprinkler system coverage, risk to fleet and operations.
- Limited standby generator capacity – can't support 100% DPW operations

WOOD-FRAMED SALT SHED AND CANOPY



Description

This is a freestanding wood-framed salt storage barn, with an attached open canopy used for miscellaneous vehicle and equipment storage. There is a single exterior plastic tank for deicing chemicals, but no brine mixing or processing equipment was noted.

There is no basement or attic.

Substructure: Foundations were not observable, and no existing documentation was available for review. It is assumed that this structure is supported on conventional shallow footings. The floor was not visible due to accumulated sand and salt, but is assumed to be either concrete or asphalt. No signs of differential settlement were observed, but may be present in concealed locations.

Superstructure: The salt shed and canopy are of conventional wood-frame construction, with a pole-barn post-and-beam configuration and prefabricated wood truss roof. There are signs of distress in the walls of the salt shed, and it has been prominently marked “Keep Off – No Support”, indicating instability in the upper walls. There are exterior diagonal knee braces reinforcing the lower walls. It is likely that ferrous fasteners used in the construction of this building have



been adversely affected by exposure to salt; this includes the fastener plates used in the assembly of the roof trusses. A more detailed assessment of this structure is recommended to determine its suitability for repair and continued use; at this time it should be considered at risk of failure from vehicle impact or high wind loads.

Exterior Envelope: The salt shed is clad with plywood and miscellaneous composite wood panels; some of which appear to have been installed a part of various repair efforts. There are some translucent fiberglass panels for daylighting at the upper gable wall, opposite the door. The roof is standing-seam metal. There is no insulation. The general wall envelope condition is poor.



Exterior Openings: There is a single large bi-parting barn door at one end of the building. It appears to be in sound condition, but its operation was not verified.

Interior Construction & Finishes: The interior wood plank wall facing at the lower walls is heavily worn and in generally poor to fair condition

Building Systems

- *Fire Protection:* -none-
- *Plumbing:* -not applicable to this structure-
- *Mechanical:* There is a passive ventilation exhaust louver above the barn door. No powered equipment was noted.
- *Electrical:* The salt shed has nominal overhead electrical service and minimal lighting.
- *Alarms/Communications:* -not reviewed for this area -

Accessibility: -not applicable to this structure-

Functionality / Operations

The Salt Shed portion of the DPW complex is generally usable for its required functions, although certain inherent deficiencies and conflicts were noted. These include the following:

- Limited height for large-volume deliveries.
- Poor cosmetic and structural condition.
- Potential groundwater impacts from uncontrolled salt spillage and drainage.

CORRUGATED METAL SALT/SAND SHED



Description

This is a freestanding prefabricated metal storage shed. It is open ended, with interior wood protective panels along both sides.

There is no basement or attic.

Substructure: Foundations were not observable, and no existing documentation was available for review. It is assumed that this structure is supported on conventional shallow footings. The floor was not visible due to accumulated sand and salt, but is assumed to be either concrete or asphalt. No signs of differential settlement were observed, but may be present in concealed locations.

Superstructure: This shed has a vaulted single-thickness corrugated metal exterior shell, which forms its walls and roof. It appears to be relatively new and in serviceable condition, although the edge of the roof has been heavily dented by impact.

Exterior Envelope: -not applicable-

Exterior Openings: -none-

Interior Construction & Finishes: There is protective interior wood paneling along both walls, approximately 4'-0" high. The condition of this assembly was not verified.



Building Systems

- *Fire Protection: None*
- *Plumbing: None*
- *Mechanical: None*
- *Electrical: None*
- *Alarms/Communications: None*

Accessibility: -not applicable to this structure-

Functionality / Operations: -not assessed-

FUEL SHED



Description

This is a small freestanding wood-and-steel framed shed. It has a conventional gable roof and is open at both sides. It houses the fuel dispenser (Diesel and gasoline) and fuel management equipment.

Substructure: Foundations were not observable, and no existing documentation was available for review. It is assumed that this structure is supported on conventional shallow footings or piers. There is a small interior concrete slab which supports the fueling equipment. No signs of differential settlement were observed.

Superstructure: This shed is supported on four cantilevered corner posts (presumed to be steel), with smaller-size secondary framing carrying the roof and wall panels. It appears to be in good serviceable condition.

Exterior Envelope: This shed has a standing-seam metal roof and textured plywood siding. There is no insulation or full weather closure; the wall panels do not reach the ground. Overall condition is good.

Exterior Openings: -none-

Interior Construction & Finishes: -none-

Building Systems

- *Fire Protection:* There is no fire protection system in the shed. Typical fueling systems are provided with a dedicated dry-agent fire extinguishing system. This is recommended good

practice but may not be required for fleet fueling operations which do not serve the general public.

- *Plumbing:* -none-
- *Mechanical:* -none-
- *Electrical:* There is nominal underground electrical supply to the fuel shed. The availability of lighting and convenience receptacles was not verified.
- *Alarms/Communications:* There are underground service connections back to the main DPW building for the fueling system.

Accessibility: -not applicable to this structure-

Functionality / Operations: -not assessed-

Town of Sterling
Department of Public Works
New DPW Facility – Feasibility Study

Conceptual Site Layout Options
(Existing & Alternate)

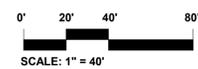
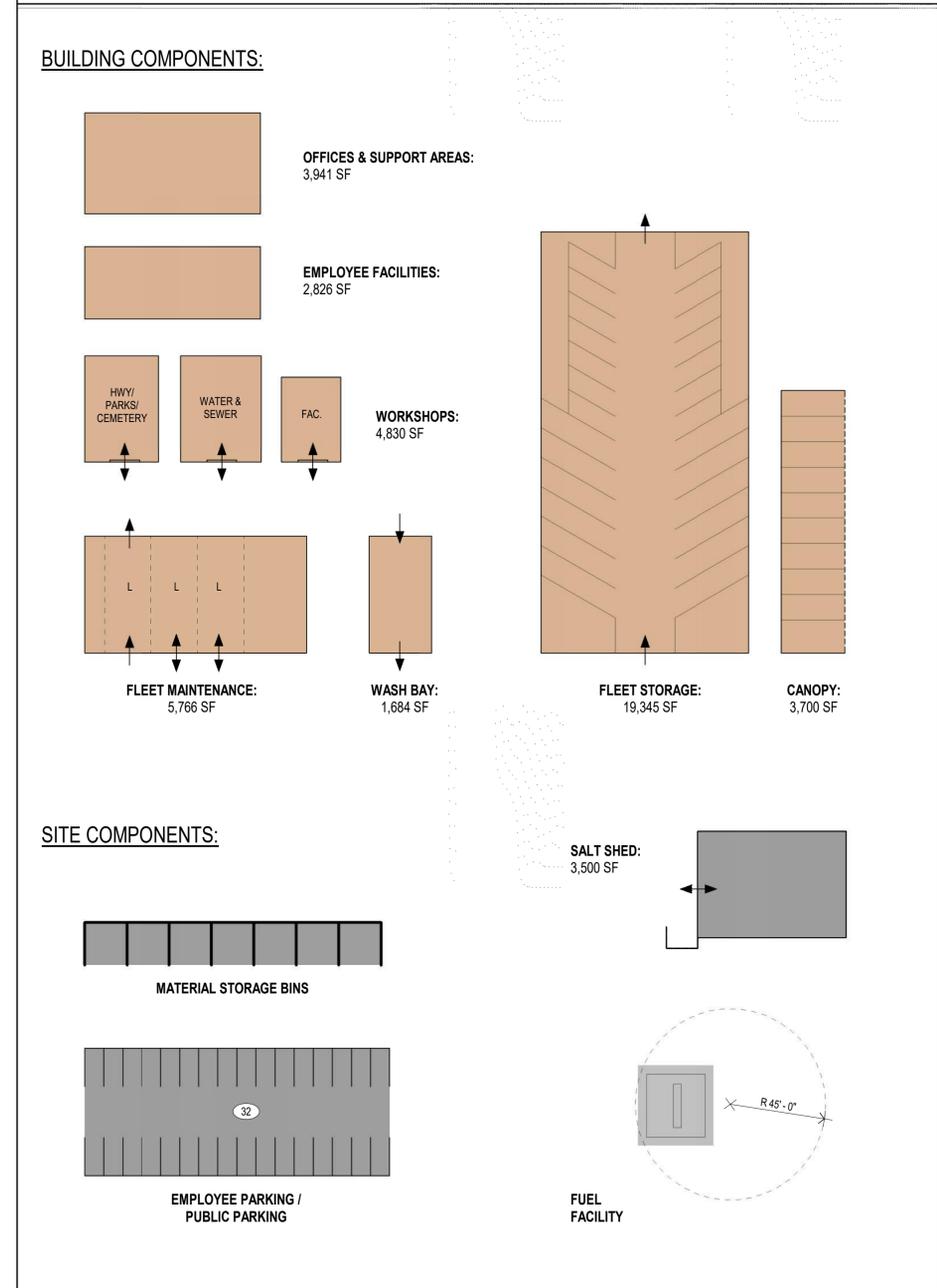


EXISTING SITE OVERVIEW
1" = 40'-0"

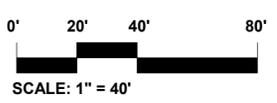
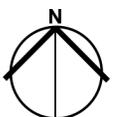
PROPOSED PROGRAM LEGEND:

OFFICES & OFFICE SUPPORT AREAS	3,941 SF
EMPLOYEE FACILITIES	2,826 SF
WORKSHOPS	4,830 SF
FLEET MAINTENANCE	5,766 SF
WASH BAY	1,684 SF
FLEET STORAGE	19,345 SF
DPW BUILDING TOTAL	= 38,393 SF
CANOPY STORAGE	= 3,700 SF

SUMMARY OF PROPOSED DPW PROGRAM / SITE AMENITIES:

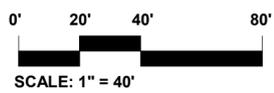


EXISTING SITE & PROGRAM OVERVIEW



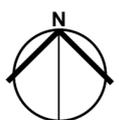
CONCEPTUAL SITE LAYOUT - OPTION 1

NEW DPW FACILITY
 171 WORCESTER ROAD
 STERLING, MA 01564



CONCEPTUAL SITE LAYOUT - OPTION 2

NEW DPW FACILITY
 171 WORCESTER ROAD
 STERLING, MA 01564



CONCEPTUAL SITE LAYOUT - OPTION 3

NEW DPW FACILITY
 171 WORCESTER ROAD
 STERLING, MA 01564



ALT. SITE - OVERVIEW
1" = 160'-0"



ALT. SITE - LAYOUT 1
1" = 60'-0"

ALT. SITE - CONCEPTUAL LAYOUT 1



TRUE

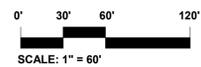
SCALE: AS NOTED



ALT. SITE - LAYOUT 2
1" = 60'-0"



ALT. SITE - LAYOUT 3
1" = 60'-0"



ALT. SITE - CONCEPTUAL LAYOUTS 2 & 3