



**TOWN OF CONCORD
COMMUNITY PRESERVATION COMMITTEE**

141 KEYES ROAD, CONCORD, MA 01742
TEL. (978) 318-3290 FAX (978) 318-3291

Application for CPA Funding

Due no later than 4:00pm on Friday, September 20, 2019

Applicant: **Town of Concord, Office of the Town Manager**

Co-Applicant (if applicable): **Concord Recreation Division**

Project Name: **Gerow Park Improvements – Phase I**

Project Location/Address: **369 Commonwealth Ave. Concord, MA 01742**

Purpose: (Select all that apply)

Open Space Community Housing Historic Preservation Recreation

Project Budget:

Amount of CPA Funds Requested: **\$ 500,000**

Amount from Other Funding Sources: **\$600,000 (fy21)**

Total Project Budget: **\$1.7M (Phase I)**

(If multi-year project, note current phase only)

Please check which of the following is included with this Application:

<input checked="" type="checkbox"/> One Paragraph Project Summary *	<input checked="" type="checkbox"/> Timeline *
<input checked="" type="checkbox"/> Map (if applicable)	<input checked="" type="checkbox"/> Architectural plans, site plans, photographs (if appropriate)
<input checked="" type="checkbox"/> Narrative *	<input type="checkbox"/> Copy of Audit or most recent Financial Information (<u>Non Profit Organizations Only</u>)*
<input checked="" type="checkbox"/> Selection Criteria and Needs Assessment	<input checked="" type="checkbox"/> Letters of Support (if any)
<input checked="" type="checkbox"/> Detailed Project Budget *	
<input type="checkbox"/> Feasibility Assessment	
<input checked="" type="checkbox"/> Statement of Sustainability (if applicable)	

* Required Documentation

The Contact Person for this Project is: **Kate Hodges, Deputy Town Manager**

All Correspondence should be mailed to: **Kate Hodges, Town Manager's Office, Town House**

The Contact Person can be reached by phone at: **978-318-3000** or by email at: **khodges@concordma.gov**

Signature of Applicant: 

Signature of Property Owner (if different): n/a

For Historic Preservation Projects Only – please check the box below left and acknowledge:

I/We have read the **U.S. Secretary of the Interior's Standards for the Treatment of Historic Properties** and understand that planning for and execution of this project must meet these standards.



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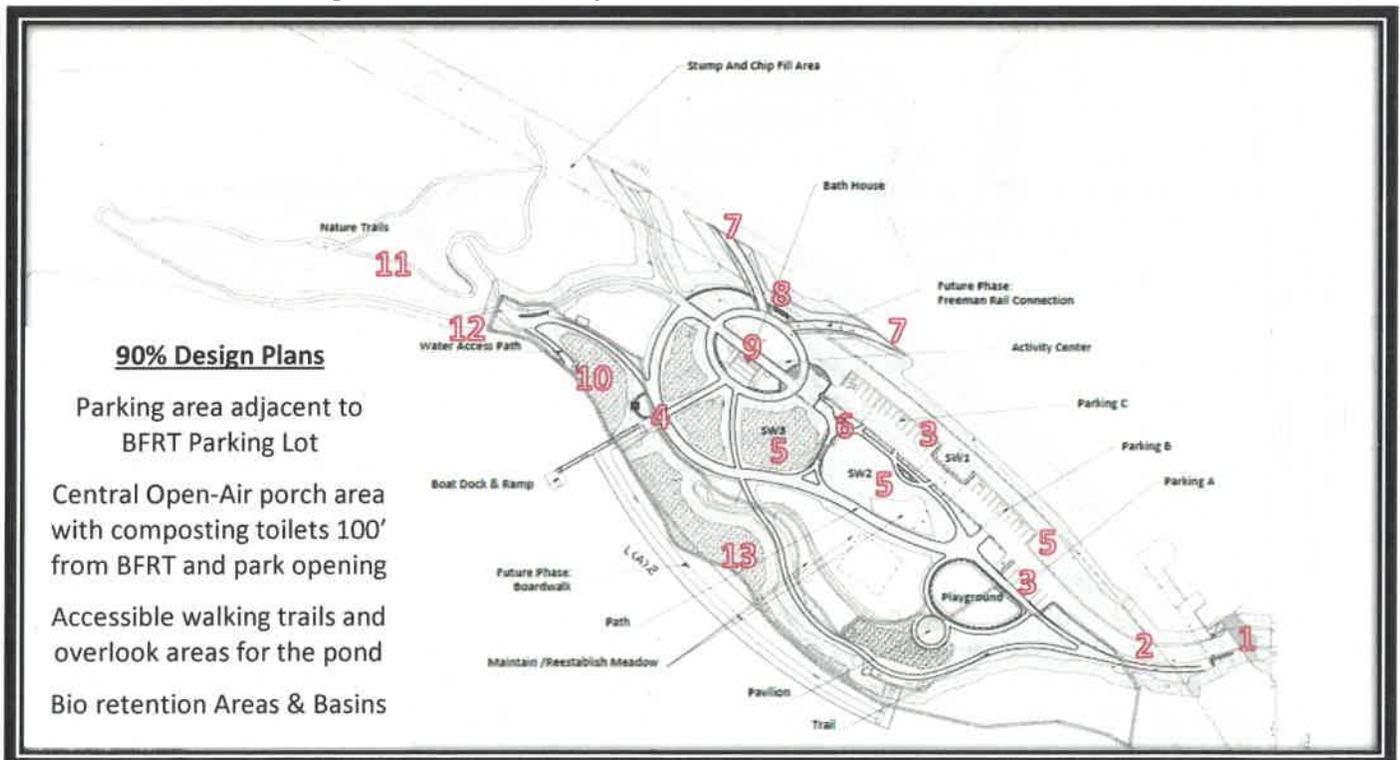
MEMO

TO: Community Preservation Committee
FROM: Kate Hodges, Deputy Town Manager
DATE: September 16, 2019
RE: FY2021 CPA Application – Gerow Park Area Improvements, Phase II

Project Summary:

The Town, after authorization at the 2017 Town Meeting, purchased and took ownership of seven acres of property along Commonwealth Avenue now referred to as Gerow Park. In July 2018, the Town immediately began schematic design and feasibility studies to develop the parcel as an open space and recreational park. Thus far, we have completed the initial master planning efforts and design analysis relative to Phases I and II. Phase I construction is slated to commence during the spring of 2020, once the design, parking management plan and storm water analysis have been finalized and approved. Those actions will take place fall and winter. We are seeking \$500,000 from CPC to further develop *and* construct an accessible year-round composting toilet facility and to construct additional access paths along the elevated ridge of the property adjacent to the pond. The restroom facility, once complete, will be Concord’s first publically accessible composting toilet facility; the walkways as planned will allow gradual and picturesque sloping access for members of the community to enjoy the beauty of Warner’s Pond.

Exhibit A: MAP -- 90% Design Schematic Plans, as of 9/15/2019





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Narrative:

The Town committed a sum of \$400,000 from the FY2020 Capital Plan and CPC awarded an additional \$200,000 for the park development and improvements during last years' town meeting. Greenman-Peterson, Inc. (GPI) was hired by the Town after an extensive RFP process and completed a full topography and boundary survey in May. Additionally, GPI developed several concept designs which worked to maintain the natural boundaries and slopes of the property. Phase I's construction drawing was finalized in September after a series of public information sessions and forums; the plan is shown on page 1.

Needs Assessment:

The Town and GPI have spent a little more than six months assembling data, materials and other permitting items in order to have a complete bid package set and available by November 30, 2019. Before construction documents are able to be finalized, a number of permits need completion. These additional studies, reports and information may be made available upon request, but were not included in this submission as they total several hundred pages.

The following schedule details several pre-bid tasks and their respective timeframes:

- | | | |
|---|------------------------|----------------|
| 1. Scope of Services for GPI support, oversight & inspections | <i>completed as of</i> | Aug. 31, 2019 |
| 2. Local and State permits applied for and received | <i>completed as of</i> | Sept. 16, 2019 |
| 3. Storm Water Management Plan finalized and approved | <i>pending as of</i> | Sept. 30, 2019 |
| 4. Design plans and 100% construction bid documents completed | <i>target date</i> | Oct. 4, 2019 |
| 5. Planting plan and walk-through schedule set | <i>on or before</i> | Dec. 10, 201 |

Phase I action items and site improvements are to include

(Numbers below correspond to those shown on the attached pg. 1 '90% design plan'):

1. New driveway crossing BFRT parking area off Commonwealth Ave.
2. Asphalt driveway/entrance leading to parking areas
3. *Hardpack* paving surface for parking spaces
4. *Hardpack* surface for ADA walking trail systems within the cleared park envelope
5. Storm water basins (3) at center of park and parking areas
6. Wood bridge and sustainable gardens planted in and around bio retention and infiltration areas
7. Tow focal-point connections at the northern end of the park to connect the BFRT 2B area
8. Brick or porous paver gathering area at park entrance/center with bike repair station and benches
9. Bathroom building consisting of two composting toilets year-round; covered picnic & overlook area
10. Stone work and reinforced areas surrounding Rt.2 output drain in 'cove' site at pond's edge
11. 5% excavated trail loops through eastern border of property which maintains woodlands
12. Access path for direct water area for canoe/kayak launching; removal of invasives at waters' edge
13. Meadow-style pathways in hillside areas near future gazebo and playground sites.

Project Schedule:

Taking into consideration the need for both local and state permitting, public bidding processes, construction coordination sequencing and a calculated coordination process with our planning and facilities departments, the time table below best represents the remainder of the park's Phase I schedule. Adhering to this timetable ensures our ability to completely vet and finalize the design and bid process and, more importantly, ensuring we are able to receive a stable price point for construction and materials.



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For the Board's convenience, we have also outlined a separate schedule relative to the bathroom portion of the project phase for which we are seeking the majority of CPC funding.

Complete Project Schedule:

100% Design Plans Finalized	September 16, 2019
Local and State Permits Submitted	September 20, 2019
Construction Bid Documents Finalized	October 10, 2019
Advertise to Bid	November 11, 2019
Site Visit	December 10, 2019
Bids Due By	December 30, 2019
Construction: Utilities, Grading, Parking, Storm Water Management, Utilities	March 20, 2020
Substantial Completion Prep Work	June 30, 2020
Amenities: Restrooms, Benches, Walkways	July 1, 2020 (90-day construction period)

Bathroom Project Schedule:

Composting Schematic Finalized	August 30, 2019
Design and Layout Finalized	September 10, 2019
Surrounding Facility Façade Set	September 20, 2019
Construction Drawings Complete	September 30, 2019
Construction	

Staffing & Maintenance Plan:

Regular cleaning of pathways including debris removal and general repairs will be completed weekly (at a minimum) during peak operating seasons. Park Maintenance would be completed by members of the Town's Park and Tree, Recreation and Facilities' crews. During off-peak times such as the winter months, members of the facilities team shall check the site daily to assess restroom conditions, clear debris and make repairs as needed. Funding for repairs and maintenance will be paid for through the Town's Park and playground budget which is a division of the Facilities Department under the office of the Deputy Town Manager.

Budget:

Restroom Facility -- \$141,029.81 + 20% inflation & construction contingency = \$170,000

WATER IMPROVEMENTS						\$0.00	\$0.00	\$17,250.00
02710	1" Polyethylene Well Tubing	300	FT	\$50.00			\$15,000.00	
02710	1/2" Tubing (to Drinking Fountain)	25	FT	\$30.00			\$750.00	
02710	Water Tank	1	EA	\$1,500.00			\$1,500.00	
RESTROOM						\$0.00	\$0.00	\$123,779.81
03300	Concrete Foundation (6.5 Ft. Vertical Clear)	31.21	CY	\$700.00			\$21,848.30	
03300	Concrete Slab	1.95	CY	\$700.00			\$1,365.52	
04500	CMU Walls	850	SF	\$16.00			\$13,600.00	
06100	Roof Framing	768	SF	\$8.00			\$6,144.00	
07200	Roof	768	SF	\$4.00			\$3,072.00	
08100	Siding	850	SF	\$5.00			\$4,250.00	
09100	Finishes	1	LS	\$8,500.00			\$8,500.00	
16000	Electrical	1	LS	\$5,000.00			\$5,000.00	
13040	Clivus Units w/ 3T +1U	2	EA	\$30,000.00			\$60,000.00	



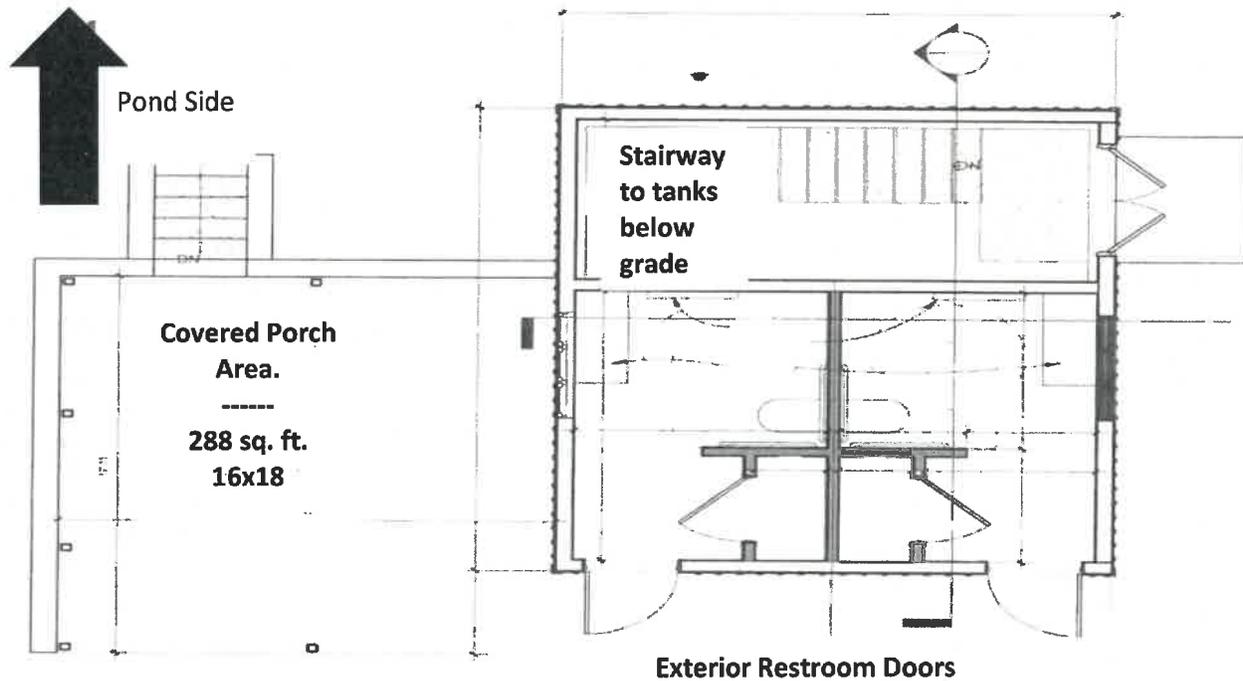
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Pathways - \$589,780

DEMOLITION AND SITE PREPARATION					\$249,810.89	\$0.00	\$8,661.89
02050	Mobilization	1	LS	\$19,885.89	\$19,885.89		\$8,661.89
02100	Pedestrian & Vehicular Traffic Maintenance	1	LS	\$5,000.00	\$5,000.00		
02100	Tree Protection Fencing	1875	FT	\$8.00	\$15,000.00		
02100	Clearing & Grubbing	3.00	AC	\$10,000.00	\$30,000.00		
02110	Sawcut Pavement	50	FT	\$2.50	\$125.00		
02200	Topsoil Excavated and Stacked	1600	CY	\$19.00	\$30,400.00		
02200	Rough Excavation	3300	CY	\$30.00	\$99,000.00		
02200	Excavation - For new Path, curb, pavements	1680	CY	\$30.00	\$50,400.00		
SITE IMPROVEMENTS					\$339,967.89	\$0.00	\$100,000.00
02160	Fine Grading of Subbase	6070	SY	\$4.00	\$24,280.00		
02200	Common Borrow	1040	CY	\$25.00	\$26,000.00		
02200	Gravel Borrow for Path Subbase	1208	CY	\$40.00	\$48,302.16		
02500	Hot Mix Asphalt Binder	289	Ton	\$110.00	\$31,763.63		
02500	Asphalt Emulsion for Tack Coat	129	Gal	\$10.00	\$1,289.11		
02500	Hot Mix Asphalt Top	282	Ton	\$110.00	\$30,988.91		
02500	Dense Graded Crushed Stone (Paths)	229	CY	\$70.00	\$16,041.67		
02515	HMA Cape Cod Berm	1800	FT	\$12.00	\$21,600.00		

Plans, Photos, Etc.:

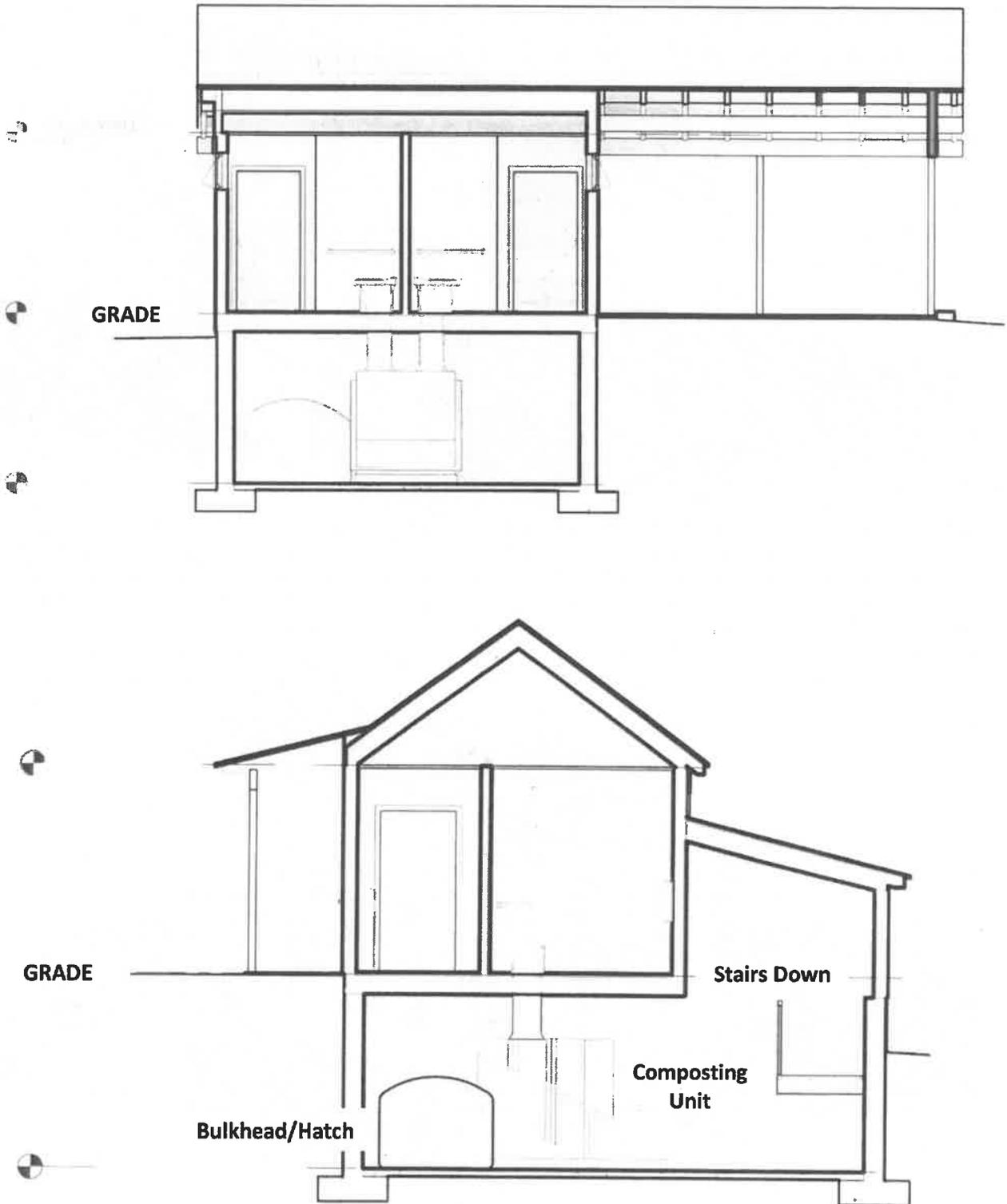
Figure 1: Clivus Composing Unit – Two toilets at grade, one compost unit below grade.





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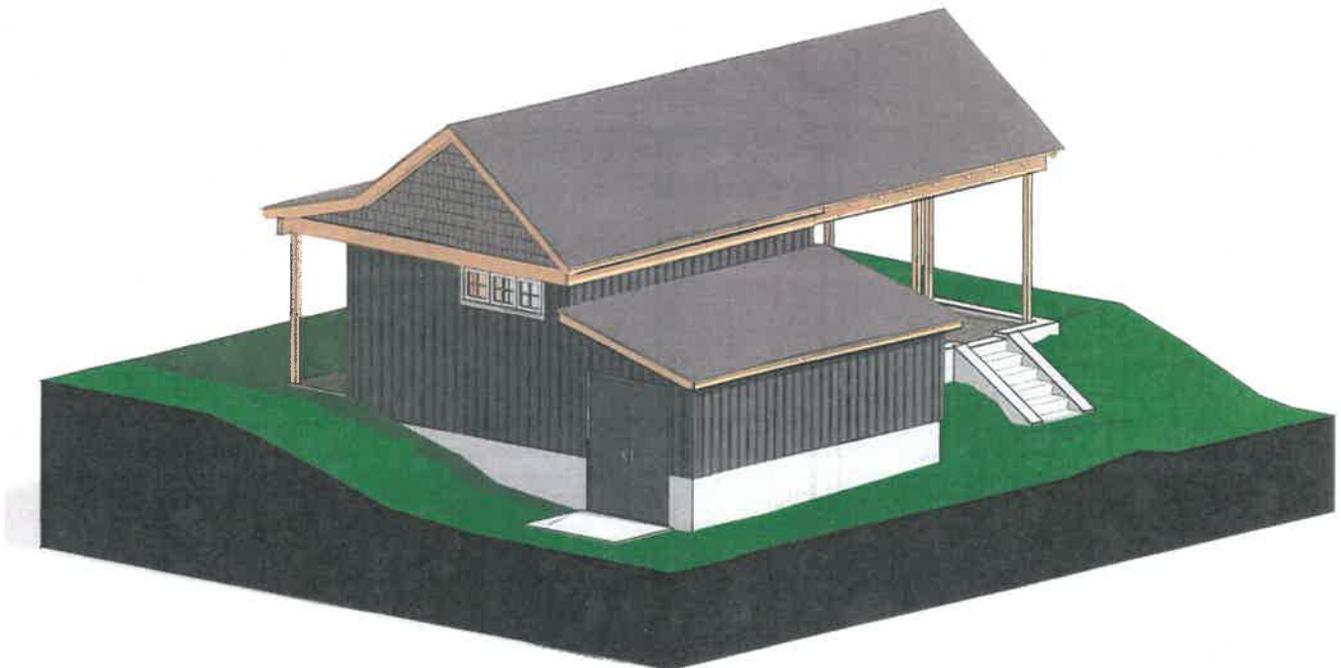
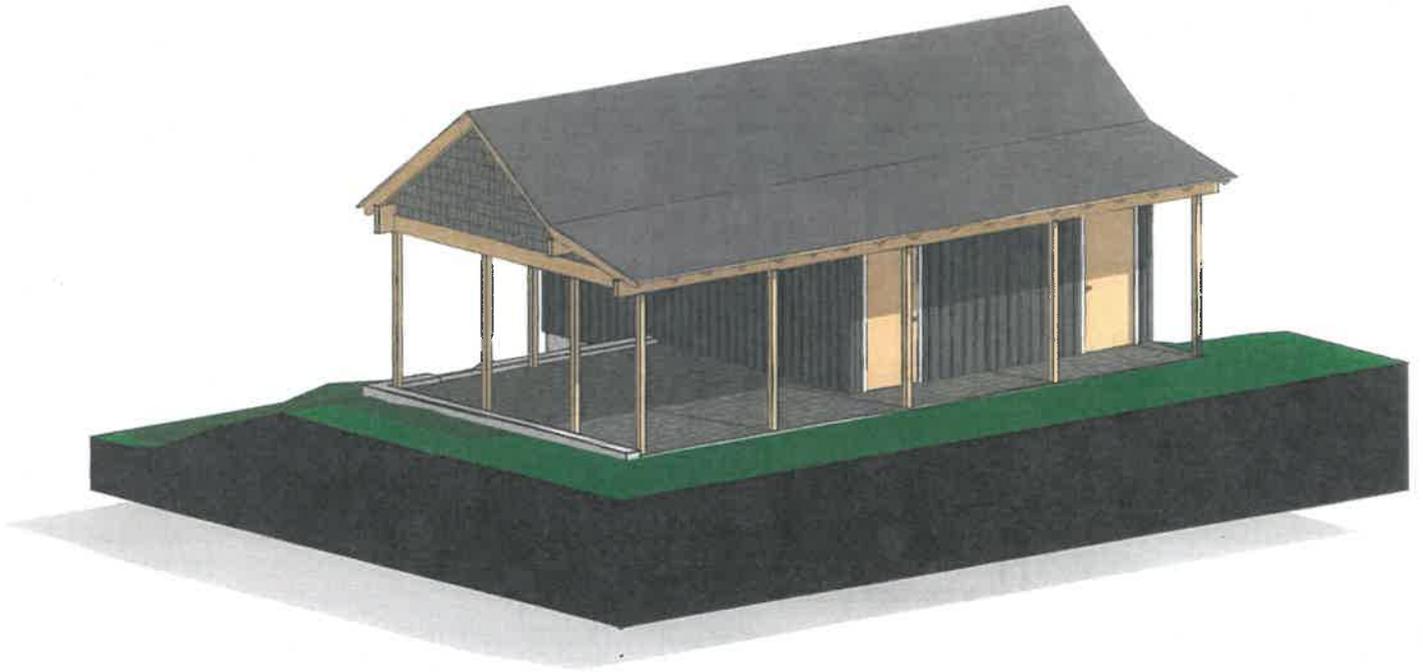
Figure 2: Side & rear views of composting basin relative to grade.





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Figure 3: Artistic Renditions of Toilet Facility including Covered Patio & Picnic Area.





Swedish engineer Rikard Lindstrom developed the first compost toilet in 1939 to prevent pollution in the Baltic Sea near his home. He went on to found Clivus Multrum AB in 1962, and the company soon spread across the Atlantic. Since its incorporation in the U.S. in 1973, Clivus Multrum has manufactured and sold compost toilets and greywater systems in North America and beyond.

POTABLE BENEFITS

SUSTAINABLE ALTERNATIVES

One of the disadvantages of municipal sewage treatment is that biological materials are processed along with industrial waste and storm water runoff, explains Denis Hayes, CEO of the Bullitt Foundation. When the waste water is purified, it leaves behind a sludge that can retain many heavy metals and toxicants. Composting toilets, however, capture human waste upstream rather than downstream. Unlike an outhouse or the pit toilets found in state parks, these dry systems use vermiculture and anaerobic digestion to turn collected materials into a nutrient-rich soil amenity. This ensures excrement isn't contaminated by potentially worrisome compounds and the resulting bio-solids can be safely used for farm, landscape, and garden applications. The low-tech solution is also relatively hands off for busy facility managers – it takes years before enough compost is generated to fill the collection bins. In the meantime, about one gallon of liquid byproduct (leachate) is produced for every 20 uses, according to manufacturer Clivus Multrum, which can be used in constructed wetlands or carried away by a septic hauler.

The biggest benefit is water savings. Only a few ounces are needed for some systems to flush, whereas others are completely waterless. Models that use vermiculture require some irrigation, but you can acquire that for free from rainwater. All the while your facility is saving thousands of gallons of potable water each year.

TOILETS TEACH A NEW GENERATION

The Stroud Water Research Center is no stranger to composting toilets. Situated in rural Pennsylvania near White Clay Creek, the research campus installed waterless toilets in 1996. When it came time to build the Moorhead Environmental Complex, it was a no-brainer to replicate their earlier success, says Dave B. Arscott, assistant director and research scientist. The LEED Platinum facility sports four composting toilets and one waterless urinal that connect to two polyvinyl plastic bins in the basement.

The toilets have no basin or flushing mechanism – materials simply drop down a vertical chute.

The system also includes:

1. **Vermiculture** – Worms may be a staple in science classrooms, but these industrious creatures also turn waste into compost. Worms can process 90% of collected solids and liquids, Arscott explains.
2. **Compost** – To ensure the worms have a suitable habitat, the bins are balanced with a bulking agent. The facility uses a combination of wood chips, newspaper, and kitchen scraps.
3. **Ventilation** – Negative air flow must be maintained in the system to control odors and encourage aerobic digestion. A fan operates continuously and vents air through the roof.
4. **Moisture** – Worms need a small amount of dampness to thrive. A humidity sensor keeps track of bin conditions and rainwater is routed through spray irrigation when needed.
5. **Drainage** – Too much water, however, can drown out a worm colony. A pump is used to separate liquids from solids while maintaining the bacteria and worm community.

Once a month, staff should check on material levels, replenish worms if needed, and confirm irrigation and drainage are still working, notes Arscott. Without a basin, there's also little daily cleaning required. No harsh chemicals are used lest they kill off the worms. While the drop structures are far wider than a traditional toilet trap, they can be sprayed down with a garden hose from a nearby janitorial closet, Arscott says. This should be done once every four months or as needed.

URBAN SETTING RIPE FOR NET-ZERO WATER

Stuffed to the brim with sustainable features, the Clivus Systems are one of the largest companies to offer the commercial composting toilets. To meet net-zero water objectives stipulated in the Living Building Challenge, the unit uses a nearly waterless version in its restrooms. A sensor detects the presence of a user and delivers a coating of foam and two tablespoons of water to the bowl. The slippery mixture then falls through a vertical pipe to the 10 composters located in the basement.

“It’s unsophisticated engineering – a straight chute connects the toilets to the composters, letting gravity do all of the work,” explains Hayes. The compost bins are filled with wood chips and contain a spindle with a series of tines, which is manually spun for aeration by a building engineer. A fan also pulls air through the system and out through the roof. The center expects a year and a half will pass before the first batch of compost needs to be removed.

FLUSH WITH SUCCESS

Given their plumbing requirements, composting toilets are best for sites without sewer and wish to have access year-round to facilities for removal.

Memo



To: Community Preservation Committee
From: Kate Hanley, Director of Sustainability
cc: Kate Hodges, Deputy Town Manager
Date: September 18, 2019
Re: Sustainability of Gerow Park Improvements, Phase II

I am writing to express my support for the Town's application to CPA for funding for the Gerow Park Area Improvements, Phase II. As Director of Sustainability, it is my role to promote, inspire, and implement sustainability actions across town departments and the community.

I have been part of the planning team for the Gerow Park project since the project began. Sustainability was a criteria in selecting consultants and has continued to be a priority in designing the new park.

The proposed development of Gerow Park aligns with the Town's sustainability goals in several ways. The selection of composting toilets will significantly reduce demand for water compared to a traditional restroom facility. These toilets also use less energy. The connection between the park and the Bruce Freeman Rail Trail encourages sustainable transportation. The stormwater management plan has prioritized bioretention and the planting plan prioritizes native plants, which will use less water and require less maintenance. The entire design has focused on preserving and improving the property's natural resources while highlighting the natural beauty of Warner's Pond and providing access to all Concord residents.

The Town thanks you for your consideration. If you have questions, please do not hesitate to reach out.

