July 21, 2025
Updated October 13, 2025

Brandon Schmitt
Director
Natural Resources Commission
Town of Wellesley
888 Worcester St, Suite 160
Wellesley, MA 02482
Via email: bschmitt@wellesleyma.gov

Re: Engineering and Cost Estimating Services
Wights Pond, Hundreds Road, Wellesley, MA

McAllister Marine Engineering, LLC (MME) is pleased to provide this summary report to the Town of Wellesley (the Town) for engineering and cost estimating services related to investigations the Town is conducting relating to the property surrounding Wights Pond, along Hundreds Road. As we understand it, the Town has the possibility of acquiring the private parcel that surrounds the Pond. The intent of this scope of work is to help the Town make better informed decisions about accepting the parcel. The scope performed by MME included three tasks 1) Evaluation of Landside Impacts to Town, 2) Drainage/Culvert Evaluation, and 3) Walkway Path Conceptual layout and cost estimation.

The subject parcel which contains Wights Pond is listed as assessor's parcel 62-26, located at 25 Hundreds Road. The property is 239,580 sf or 5.5 acres. Hundreds Road is located to the east of it and residential properties surround it to the south, west, and north. The entire site slopes inwards towards the ponds with an approximate 6–12-foot elevation change from the surrounding properties/roadway down to the Pond. The site is heavily wooded and unimproved by any building or structure.

Task 1 Evaluation of Landside Impacts to Town

Under this activity, MME conducted a site visit to the property to document the existing conditions and better evaluate how those conditions could impact the Town. MME looked for any potential liabilities that exist at the property (independent of the environmental site assessment that we understand the Town will be conducting). MME also looked at what potential maintenance needs and/or on-going cost considerations the Town should factor in for maintaining the property.

The property is dominated by the Pond, which encompasses the majority of the property in the middle, with a stream (Cold Stream Brook) feeding the pond coming in from the northwestern portion of the property. The stream leaves the property in the eastern portion of the property via a broad crested weir spillway with an approximate 4-foot drop and a 4x4 box stone lined box culvert that passes under Hundreds Road. The condition of the culvert/spillway is detailed further in Task 2 below.

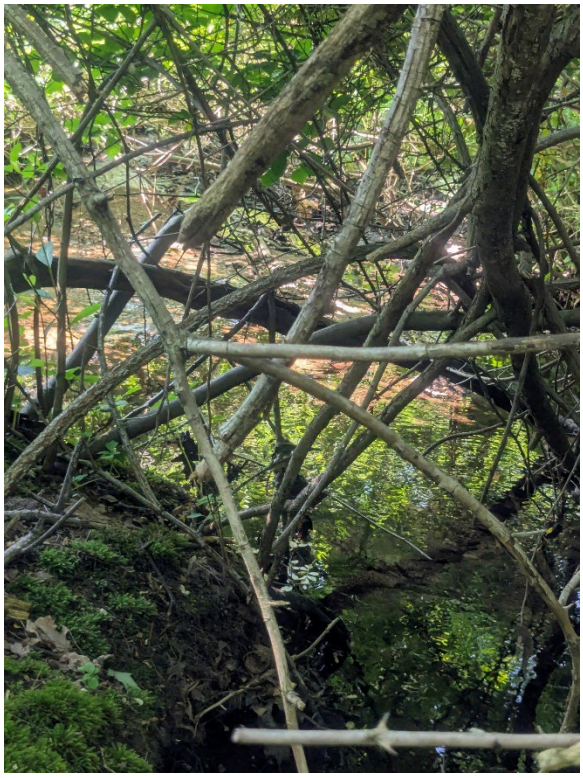
The majority of the property appears to be located within a FEMA flood plain, Zone X, 0.2% annual chance flood hazard, according to Map Panel 25021C0009E effective 7/17/2012. Given that the likely intention of use of the property isn't likely to include a structure, this floodplain issue shouldn't impact the use of the property, however any amenities such as pedestrian bridges and benches should be designed to withstand floodwaters. There are existing mapped wetlands in the northeastern section of the property, in the area surrounding Cold Stream Brook, which feeds the pond.

There is dense vegetation that surrounds the property and in order to walk completely around the Pond while remaining on the property, would require cutting the way through, particularly in the south, southeastern portion of the property. Any path surrounding the property would need to be cognizant of that. There are also several downed trees along the property and within the Pond itself.

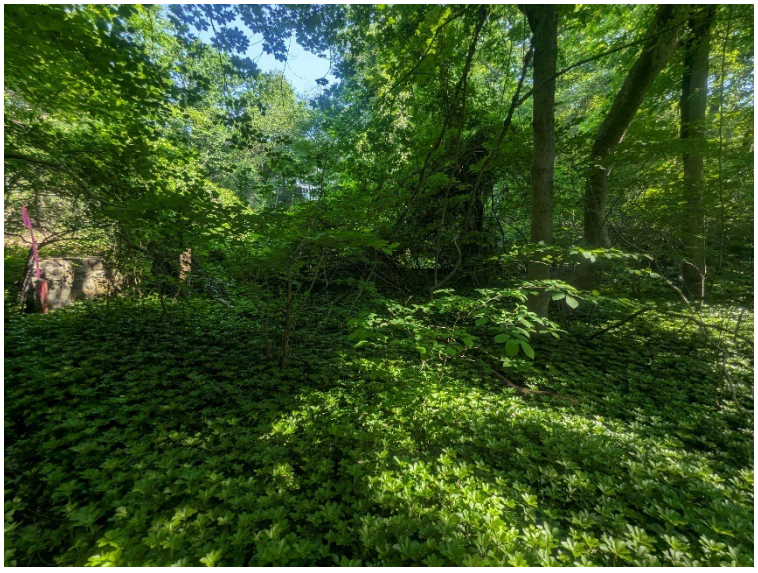
There was some erosion noted along the eastern edge of the property in the area sloping down from Hundreds Road. To the north of the weir, there is an area of denuded vegetation and asphalt paving, where the majority of the erosion was noted. This area was also noted in the April 2025 Jurisdictional Determination by Fuss and O'Neill. The asphalt, as well as the surrounding sandbags, appear to be a temporary repair, and during our site visit we could see water actively flowing through the hole in the asphalt and behind the box culvert walls.

Should the Town decide to take over this property, we would recommend removal of the asphalt and revegetating the slope areas. The embankment area along the edges of the spillway should be reconstructed with a more long-term fix, to keep water from eroding the surface and collecting up against the box culvert. If the area is going to be part of a walking path, a geotextile could be laid to reinforce the ground and prevent against erosion.


Photos No. 1 and 2 – Area north of the culvert where temporary fix and erosion were observed.




Photos No. 3 and 4 – Dense growth and inflow channel to the west and southwest of the Pond.

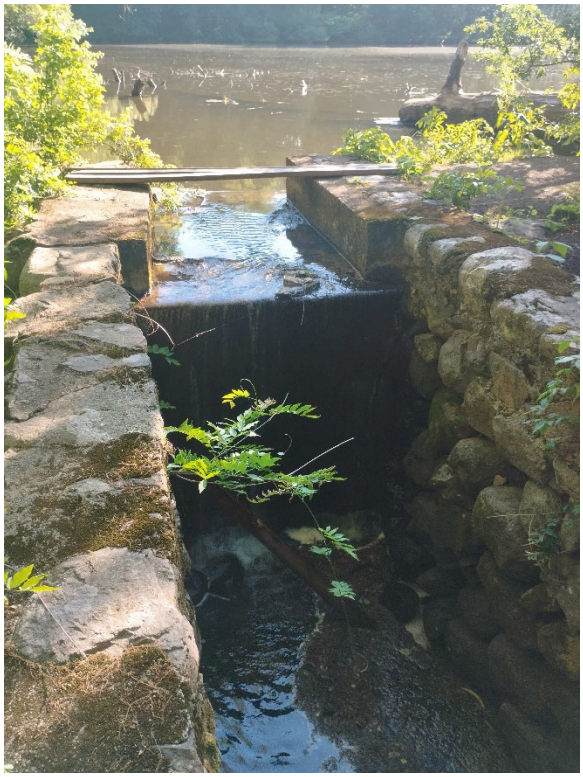



Photos No. 5 and 6 – Typical vegetation communities surrounding the Pond.

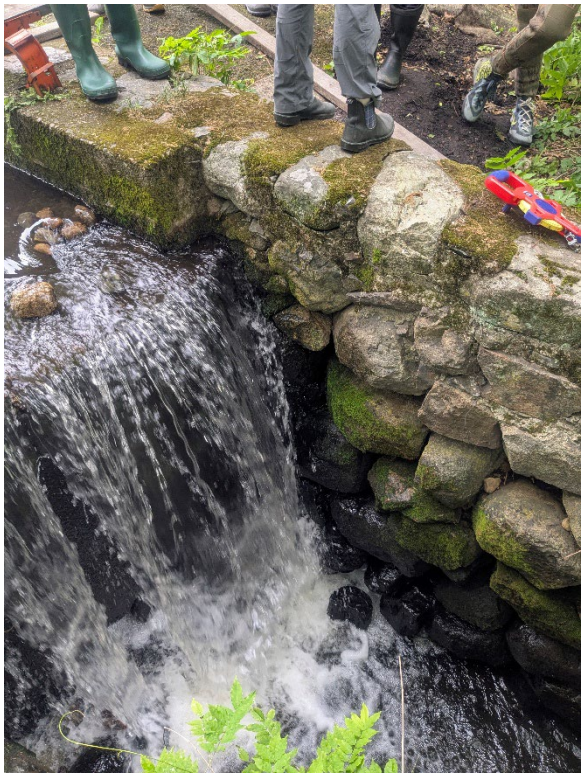
Task 2 Drainage/Culvert Evaluation

Wights Pond has an outlet along its eastern edge that creates the connection between Wights Pond and Farm Station Pond via a drainage culvert that passes under Hundreds Road. MME visited the site to document the condition, where accessible, of the culvert and weir. The outlet control structure is comprised of granite block broad crested weir with an approximately 5 ft drop spillway into a gravity stone lined box culvert. At the bottom of the spillway there are large boulders within the stream bed that act to break up the velocity and energy of the outflow. The box culvert is exposed for several feet prior to being covered by a granite block headwall as the surrounding grades rise and passes under Hundreds Road.

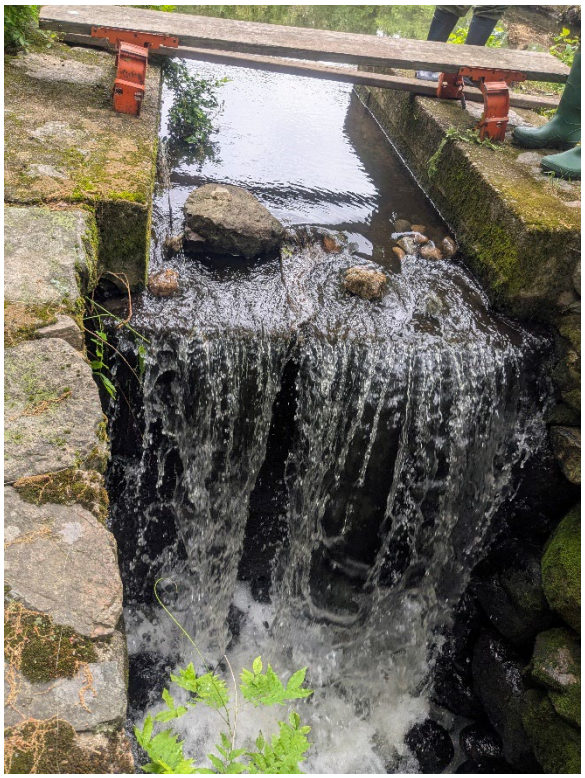
The box culvert is comprised of cobbles and boulders held in place by gravity, without any apparent mortar (with the exception of the surface layers). The boulders appear to be firmly set and while some of the soil infill of the voids has appeared to have washed away along the surface, the stones don't appear to have moved or be displaced from the original installation. The walls did not appear to be bowing or significant deflection of the walls in the area that was visible for inspection. The large boulders placed at the base of the spillway area appear to be performing properly by reducing outflow velocities. Downstream of those boulders, where the flow was turbulent, the flow through the covered culvert turned to smoother, more laminar flow, which will cause less stress and impact on the culvert. Based on the dimensions of culvert and the weir the box culvert has more than sufficient capacity to handle the majority of outflows. The rectangular broad crested weir has a flow capacity of between approximately 3 and 9 cfs based on its dimensions and varying potential flow depths. Conversely, the box culvert, assuming there is a slope of 0.02 ft/ft (2%) through its bottom, has a flow capacity of between approximately 85 cfs and 162 cfs, showing the culvert has more capacity than the weir and thus unless the weir is overwhelmed with flood waters, has capacity to handle the flows it could be produced.



Photos No. 7 and 8 – View of the broad crested weir and spillway, as well as box culvert stone cover.

Photos No. 9 and 10 – View of boulders placed along box culvert walls

Photos No. 11 and 12 – Additional views of spillway and outlet towards Farm Station Pond.

While the culvert and weir appear in good shape, the following maintenance considerations and upgrades should be noted should the Town take over the property.

- The stones at the base of the spillway serve an important function in breaking up the velocity of the outflow. Should flows increase or prove to be more turbulent, the Town could place additional, larger stones at the base of the spillway to further decrease the energy of the outflow.
- The Town should regularly monitor the box culvert stone walls for loss of material and/or heaving or bowing of the walls. If problem areas develop, they could be mortared in patches to reinforce, or in the extreme condition, slip lining the culvert with a slurry concrete, which would reduce some flow capacity, but provide additional structural support. Based on the current conditions, this is not recommended.
- Remove and replace the asphalt surrounding the walls and re-grade the area so runoff doesn't flow towards the box culvert. Water collecting behind the culvert walls could increase pressures on the walls and cause bowing/defamation, thereby compromising the structural integrity of the walls.

Update October 2025

MME was notified by the Town of Wellesley in late September 2025 that more of the bottom of the overflow spillway was visible due to the drought conditions that had been occurring over the recent months. The Town was called out to the site because of an issue with the makeshift crossing bridge that traverses the weir. MME visited the site again on October 6th to review the site conditions.

MME observed a much reduced outflow passing over the weir and into the box culvert, and at the base of the spillway structure, we observed that part of the soil and base of the spillway had eroded, likely from backsplash occurring from the flow hitting the boulders at the base of the spillway that is intended to break up the energy velocity of the overflow. The conditions on site at the time of the visit showed about 12" from the bottom of the spillway structure to the base of the stream, and had approximately 6-8" of soil eroded from underneath the spillway structure. (Precise measurements could not be made due to safety considerations for the visit).

The face of the spillway structure did not demonstrate any cracking or spalling or features that would indicate a structural impact. In reviewing the structure itself, no joints were visible, indicating that the spillway could be a monolithic structure. If it is indeed a monolithic structure, that would support the fact why there is no cracking or signs of structural impacts to the spillway.

This does represent an area of concern to monitor. Should the Town take over the property, there are several options. A more thorough geotechnical/structural assessment could be made, but would likely require significant dewatering to allow access to inspect the structure. A short to medium term fix that could be performed by the Town would be to backfill and grout the area at the base of the spillway that has occurred and then supplement the bottom of the spillway with additional larger stones and boulders (as noted above) to break up velocity but also direct the energy away from the base of the spillway structure.

Photos No. 13 and 14 – Views of the base of the spillway showing erosion of material from the base of the structure.

Task 3 Walking Path conceptual layout and cost estimation

Should the Town take over the parcel, and want to include the property as part of its Open Space portfolio, it may want to make it accessible to the public for use. MME used publicly available data (GIS data layers) and information collected during our site walk to layout a conceptual walking path around the Pond. There are two potential paths around the property, one that stays along the lower elevations of the property and one that would be further upslope of the property. We have assumed a 5 ft wide path in both cases. It's important to note, as shown in the orange area below, that the southern section of the property was inaccessible during the site walk due to the dense undergrowth on the property.

Some considerations that we found when looking at these pathways:

- The lower pathway, with less elevation change, would likely require multiple pedestrian bridges or pile supported elevated decking walkways to cross either wet areas, the streams, or branches of the pond.
- The higher pathway would require fewer pedestrian bridges, however, given the existing slopes on site, would require significant cutting and regrading in order to achieve an ADA accessible pathway.
- The crossing over existing culvert/spillway on the eastern side of the pond would require a pedestrian crossing structure with handrails due to the drop-offs on either side.
- Any pathway would require permitting under the Wetlands Protection Act and Wellesley Wetlands Bylaw due to the wetland resources that exist on site.

- Walking pathways would require some clearing and in order to avoid erosion and other negative impacts, we would recommend reinforcing the pathway with a geotextile fabric and either a stone dust cover or heavy-duty vegetative planting.
- The Town may want to consider acquiring an easement from the neighboring property (29 Hundreds Road) to the south to allow for easier access around the Pond.
- There isn't dedicated parking, possibly two spots along the western side of Hundreds Road, so the Town should be cognizant of that limitation.

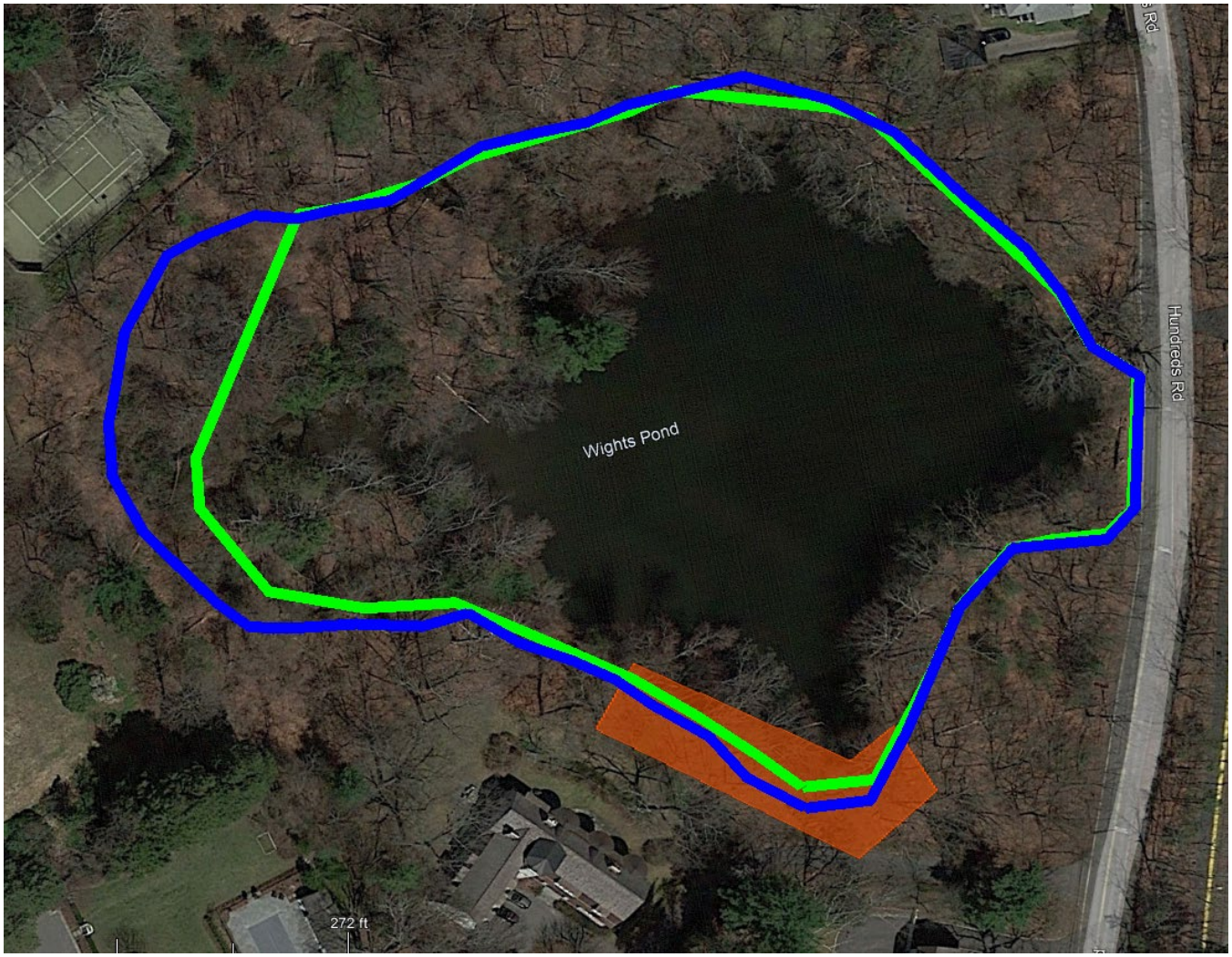


Figure 1- Schematic Representation of Potential Walkways, with the orange zone of dense growth that was inaccessible.

MME has also provided a draft cost estimate of what that type of walking path would cost to implement, with considerations for design, permitting, and construction of the pathway.

For the lower path, which would be approximately 1,500 linear feet, 5 ft wide, with three pedestrian crossings, and a stretch of pile supported decking to traverse some soft/wet areas, the expected range would be somewhere between $300,000 and $350,000. The cost considerations shown below were made using update construction cost data, however significant assumptions had to be made in order to develop this and therefore it should be considered an order of magnitude estimate.

Type of Improvement	Item	Description	Unit	Total Unit Cost Including O & P	Quantity	Total Cost
Demolition and Site Prep	Mobilization	Mobilize Equipment and Materials	ea	$ 20,000.00	1.000	$ 20,000.00
	Sawcut and Remove Pavement	Demolish Remove Pavement and Curb- Excludes Hauling and Disposal	sy	$ 13.16	8.889	$ 116.94
	Pavement Disposal	License Aphalt Recycling Landfill	ton	$ 63.25	10.000	$ 632.50
	Temporary Fencing	Chain Link, 8 ft high	ft	$ 10.05	500.000	$ 5,025.00
	Install Erosion Controls	Silt Fence and Straw Wattle	ft	$ 10.22	1650	$ 16,868.78
Site Work	Excavation	Cut to desired grades	bcy	$ 10.52	138.9	$ 1,461.11
	Site Fill	General Fill	cy	$ 40.00	138.89	$ 5,555.56
	Regrading of excavation spoils	reused on site	sy	$ 3.93	138.89	$ 545.83
	Crushed Stone	3/4 to 11/2 double washed stone	bcy	$ 50.00	138.889	$ 6,944.44
	Geotextile Fabric	Placed at base of pathway	sy	$ 1.88	833.333	$ 1,566.67
	Fine Grading of Work Area	Achieve desired grades	sy	$ 2.60	833	$ 2,165.83
	Plantings	vegetation along edge of pathway (every 8 ft)	ea	$ 34.50	375	$ 12,937.50
Features	Park Amenities	Benches, stands, signage, etc.	ls	$ 20,000.00	1	$ 20,000.00
	Pedestrian Bridges	for crossings of wet areas and streams, precast concrete	sf	$ 280.00	264	$ 73,920.00
	Bridge Foundations		sf	$ 18.32	132	$ 2,418.24
	Pile supported decking	covering soft spots	sf	$ 19.02	2000	$ 38,040.00
	At grade walkways		sy	$ 20.00	611	$ 12,222.22
	Subtotal					**$ 220,421**
	Design	15% of Subtotal				$ 33,063
	Procurement					$ 5,000
	Construction Oversight	(7% of Subtotal)				$ 16,000
	Construction Contingency	(15% of Subtotal)				$ 34,000
	Project Totals					**$ 309,000**

Table 1 - Cost Estimation of Lower Path Walkway

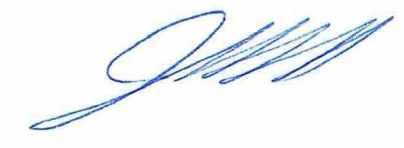
For the higher path, which would be approximately 1,650 linear feet, 5 ft wide, with two pedestrian crossings, the expected range would be somewhere between $285,000 and $330,000. The cost considerations shown below were made using update construction cost data, however significant assumptions had to be made in order to develop this and therefore it should be considered an order of magnitude estimate.

Type of Improvement	Item	Description	Unit	Total Unit Cost Including O & P	Quantity	Total Cost
Demolition and Site Prep	Mobilization	Mobilize Equipment and Materials	ea	$ 20,000.00	1.000	$ 20,000.00
	Sawcut and Remove Pavement	Demolish Remove Pavement and Curb- Excludes Hauling and Disposal	sy	$ 13.16	8.889	$ 116.94
	Pavement Disposal	License Aphalt Recycling Landfill	ton	$ 63.25	10.000	$ 632.50
	Temporary Fencing	Chain Link, 8 ft high	ft	$ 10.05	500.000	$ 5,025.00
	Install Erosion Controls	Silt Fence and Straw Wattle	ft	$ 10.22	1800	$ 18,402.30
Site Work	Excavation	Cut to desired grades	bcy	$ 10.52	458.3	$ 4,821.67
	Site Fill	General Fill	cy	$ 40.00	458.33	$ 18,333.33
	Regrading of excavation spoils	reused on site	sy	$ 3.93	458.33	$ 1,801.25
	Crushed Stone	3/4 to 11/2 double washed stone	bcy	$ 50.00	458.333	$ 22,916.67
	Geotextile Fabric	Placed at base of pathway	sy	$ 1.88	916.667	$ 1,723.33
	Fine Grading of Work Area	Achieve desired grades	sy	$ 2.60	917	$ 2,382.42
	Plantings	vegetation along edge of pathway (every 8 ft)	ea	$ 34.50	413	$ 14,231.25
Features	Park Amenities	Benches, stands, signage, etc.	ls	$ 20,000.00	1	$ 20,000.00
	Pedestrian Bridges	for crossings of wet areas and streams, precast concrete	sf	$ 280.00	192	$ 53,760.00
	Bridge Foundations		sf	$ 18.32	96	$ 1,758.72
	At grade walkways		sy	$ 20.00	917	$ 18,333.33
	Subtotal					**$ 204,239**
	Design	15% of Subtotal				$ 30,636
	Procurement					$ 5,000
	Construction Oversight	(7% of Subtotal)				$ 15,000
	Construction Contingency	(15% of Subtotal)				$ 31,000
	Project Totals					**$ 286,000**

Table 2- Cost Estimation of Higher Path Walkway

We appreciate the opportunity to work with the Town on this project. After you have reviewed the materials presented, if you have questions, please contact me at (401) 859-1839.

Sincerely,
McAllister Marine Engineering, LLC



Mr. John B. McAllister, P.E.
Principal

https://d.docs.live.net/d90455701a7468cc/Documents/JBM/MME/Projects/Wellesley/Wights Pond/MME Wights Pond Investigation Summary_Update Oct 2025.docx