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# THE YORKTOWN WINDMILL PROJECT

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<http://www.yorktown-windmill.org>



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## Site Selection Alternatives for the Yorktown Windmill

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### OVERVIEW

The Yorktown Windmill was conceived as a cooperative effort involving individuals, civic groups and foundations in the community in conjunction with the National Park Service and the County of York. After much discussion, the windmill structure was redesigned to be fully portable - disassembling into more than 20 smaller elements for transportation and installation. As a consequence, the unit can be installed on virtually any site that has a 16' x 16' ground area that is both clear and level. The structure is affixed to eight concrete pilings (12" across and 24" deep) that must be installed at the site before placement. These pilings help to assure that the building does not suffer from sinkage and also protects it from being dislodged in the event of heavy winds or flooding.

Discussions with the Colonial National Historical Park have identified 11 sites where the mill might be located within the village of Yorktown. Each of these sites offers benefits and drawbacks that impact site selection. The purpose of this document is to:

- a. Identify each of the potential sites
- b. Establish a set of criteria that can be used to assist in site selection
- c. Evaluate each of the sites using the specified criteria
- d. Recommend one or more sites that are best suited for this project based on this evaluation

This document is preliminary and does not suggest that all possible selection criteria have been included or discussed. The criteria that have been included in this document are the result of discussions between the Park Superintendent P. Daniel Smith and Windmill Project Manager Walt Akers. Additional sites and evaluation criteria may be added as required.

### A. SITE IDENTIFICATION

Ten unique sites were identified as possible locations for the placement of the Yorktown Windmill. Each of these sites is owned by the United States of American and are under the management of the Colonial National Historical Park. The locations of each of these sites are identified on the map included in Figure 1, and a description of each location is provided below.

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|---------------------------------------|---|
| 1) <b>501 Main Street</b>             | <i>Immediately adjacent to the Carrot Tree Restaurant</i>         |
| 2) <b>110 Nelson Street</b>           | <i>Field directly across from Thomas Nelson House</i>             |
| 3) <b>404 Main Street</b>             | <i>Field between Museum on Main and the Yorktown Shoppe</i>       |
| 4) <b>200 Church Street</b>           | <i>Adjacent to the Fifes and Drums of York Town</i>               |
| 5) <b>311 Main Street</b>             | <i>Adjacent to the Medicine Shop</i>                              |
| 6) <b>200 Ballard Street</b>          | <i>Directly across from the U.S. Post Office</i>                  |
| 7) <b>203 Ballard Street</b>          | <i>Field behind the Fifes and Drums of York Town</i>              |
| 8) <b>210 Church Street</b>           | <i>Between Marl Inn and Fifes and Drums of York Town</i>          |
| 9) <b>219 Church Street</b>           | <i>Across from Marl Inn and adjacent to Church Street parking</i> |
| 10) <b>209 Church Street</b>          | <i>Across from Fifes and Drums of York Town</i>                   |
| 11) <b>100 Comte De Grasse Street</b> | <i>On Yorktown waterfront at Comte De Grasse</i>                  |



Figure 1: Site Locations

## B. EVALUATION CRITERIA

The following is an explanation of the criteria that will be used to evaluate each of the potential sites. Additional criterion may be added as the project is further evaluated.

**a. Visitor Experience**

How well does the structure fit within the context of where it is located from the visitor's perspective?

**b. Interpretive Value**

How well can the location be integrated into the current interpretive program or will it effectively support an expanded program?

**c. Visibility**

How well can the structure be seen at the specified location and how does it impact the view shed of its surroundings?

**d. Appropriateness to Site**

Is the location appropriate in size and surroundings for the structure?

**e. Relationship to Surroundings**

Is the structure appropriate and well related to the surrounding architecture and foliage?

**f. Accessibility**

- i. Does the location offer ease of access for the visitor?
- ii. Is there clear access from the nearest parking to the site?

iii. Will the site be handicap accessible?

**g. Parking**

Is parking available near the site? If so, how many spaces are available?

**h. Restrooms and Water Fountains**

Where are the nearest restroom facilities and water fountains for the site?

**i. Site Conditions**

Does the site lend itself to placement of the structure without requiring extensive leveling, clearing or stabilization?

**j. Protection**

Does the site offer protection from the elements; i.e., high winds and flooding associated with storms?

**k. Security**

Is the site located where it can be provided adequate security and oversight?

**l. Additional Factors**

Other factors that either contribute or detract to the location's use.

## C. SITE EVALUATION

1) **501 Main Street**

*Immediately adjacent to the Carrot Tree Restaurant*

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**a. Visitor Experience**

At this location the windmill is well situated to be seen by visitors to Yorktown's Main Street. Walking tours from either the Visitor's Center or Yorktown's waterfront are likely to encounter the windmill. Visitor's to either the Carrot Tree Restaurant, the Customhouse or Thomas Nelson's Home will encounter the windmill as part of their viewshed as they enter and leave these establishments.

**b. Interpretive Value**

Existing National Park Service interpretive tours walk by this location. This site can be associated with both the Customhouse and the nearby Poor Potter's Site to discuss the importance of early commerce and industry to the success of villages like Yorktown. Because of its proximity to the street, interpreters can easily integrate the windmill into their programs without altering the path or duration of their tours.

**c. Visibility**

The structure can be easily seen from the Shields House to the Yorktown Shoppe and should have a favorable impact on the viewshed of Main Street.

**d. Appropriateness to Site**

The site is wide and flat with some trees nearby. Technically, the flow of wind to the structure is impacted by the presence of buildings and foliage – but, the overall effect is favorable.

**e. Relationship to Surroundings**

All of the surrounding structures are historical. The architecture of the windmill should be well suited to the architecture of nearby buildings.

**f. Accessibility**

The site is near the street and easily accessible by either foot, bicycle or wheelchair. Paved streets lead to nearby parking at either the Church Street lot or York Hall.

**g. Parking**

The Church Street parking lot is within a quarter mile of this site.

**h. Restrooms and Water Fountains**

The nearest restrooms are adjacent to the Church Street parking lot. A water fountain is also available at this location.

**i. Site Conditions**

The site will require no clearing or leveling. Eight small concrete footings will need to be installed for each corner. These footings are approximately 12" across and 24" deep.

**j. Protection**

The site has surrounding buildings and a tree line that will dampen winds. At an elevation of more than 25 feet, the location is well above the York River and will not be prone to flooding. A fence located around the site protects it from traffic.

**k. Security**

The site is on the same street as the National Park Service's dispatch office, which is manned 24 hours a day. NPS Rangers and York County Deputies regularly patrol Main Street and frequent evening activities in the area tend to discourage misuse.

**l. Additional Factors**

The location is adjacent to a large field that could become a venue for arts events, concerts and celebrations with the windmill as a central and decorative element.

2) **110 Nelson Street**

*Field directly across from Thomas Nelson House*

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**a. Visitor Experience**

At this location the windmill is set back from the road and will appear both appropriate and well placed to visitors. The structure becomes visible to walking tours along Main Street as the visitor passes the Thomas Nelson House and disappears from view when crossing Reed Street.

**b. Interpretive Value**

Similar to the Carrot Tree location, existing National Park Service interpretive tours walk by this site and it can be associated with both the Customhouse and the nearby Poor Potter's Site to discuss the importance of early commerce and industry to the success of villages like Yorktown.

**c. Visibility**

At this location, the windmill is visible from Main Street and may have some visibility from the York River or the Coleman Bridge.

**d. Appropriateness to Site**

The site is highly appropriate because it is located in a clearing on a bluff where it could be expected to receive favorable winds and be protected from floods.

**e. Relationship to Surroundings**

There are no buildings adjacent to this site, but it is in view of the Nelson House, the Carrot Tree and the Customhouse. The field and nearby trees produce an attractive overall presentation.

**f. Accessibility**

The site is significantly set back from the road, making it a challenging walk for elderly or handicapped visitors. However, long term planning could include the addition of a paved walk.

**g. Parking**

The site is in close proximity to the Church Street parking lot.

**h. Restrooms and Water Fountains**

The nearest restrooms are adjacent to the Church Street parking lot, where a water fountain is also available.

**i. Site Conditions**

The site will require no clearing or leveling. Eight small anchor footings will need to be installed.

**j. Protection**

The site does have some wind exposure that could result in damage from high winds. However, it is high above the river and the site is not prone to flooding or runoff.

**k. Security**

The site is setback from the road, which could result in increased exposure to vandalism. Notably, it is with half a mile of the NPS dispatch office which is manned continuously.

**l. Additional Factors**

The site is in a large field that is used for the Fourth of July and Yorktown Day Celebrations. The presence of the mill at this site could enhance its appearance for these events and make it an even more valuable venue for the arts, concerts and celebrations.

**3) 404 Main Street**

*Field between Museum on Main and the Yorktown Shoppe*

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**a. Visitor Experience**

The site is located between the Yorktown Shoppe and the Museum on Main. Visitors would encounter the windmill as they walked down Main Street or as they approached from Church Street.

**b. Interpretive Value**

Near the street and adjacent to a regular interpretive route, the windmill could be easily integrated into the existing National Park Service program. Alternately, the mill does not appear to organically fit with this location and interpretation would have to explain why it was placed here rather than at a more appropriate site.

**c. Visibility**

This location has some visibility from Grace Church, Main Street and Church Street. It is, significantly, obstructed by the buildings around it.

**d. Appropriateness to Site**

The proximity of nearby buildings and the lack of wind flow might make this location appear to be a shoe-horn fit.

**e. Relationship to Surroundings**

All of the surrounding structures are reconstructions of older buildings; making the windmill a consistent addition, however, the windmill may appear to be crowded and retrofitted to this location.

**f. Accessibility**

The site is immediately adjacent to the street and easily accessible by the elderly and handicapped.

**g. Parking**

The site is immediately adjacent to the Church Street parking lot.

**h. Restrooms and Water Fountains**

Restrooms and water fountains are within 100 feet of this site.



**i. Site Conditions**

The site is slightly inclined and may require some soil for leveling. Eight small anchor footings will need to be installed.

**j. Protection**

The site is very well protected from both wind and flood.

**k. Security**

The site is within view of the NPS dispatch office which is continually manned.

**l. Additional Factors**

None.

**4) 200 Church Street**

*Adjacent to the Fifes and Drums of York Town*

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**a. Visitor Experience**

Set in a field and enclosed with a white picket fence, this Church Street site receives continual sunlight and is visible along both Church Street and Main Street. Visitors to nearby York Hall will see the windmill as they enter and exit the building as will visitors to Grace Episcopal Church.

**b. Interpretive Value**

The location is near the street and easily accessible by existing tours.

**c. Visibility**

The site is visible from both Church and Main Streets. Located in an open field, tourists walking along the street will be able to see all sides of the building without leaving the paved surface.

**d. Appropriateness to Site**

Because the area around it is clear, the location can receive some air flow and appears to be functionally appropriate.

**e. Relationship to Surroundings**

The architectural siding and trim is consistent with all of the surrounding structures.

**f. Accessibility**

The site is easily approachable by both the elderly and handicapped. A gated opening will need to be made in the existing fence and a paved walk may be required to allow ease of wheel chair access.

**g. Parking**

The site is within 200 feet of the Church Street parking lot and directly across Main Street from the York Hall parking lot.

**h. Restrooms and Water Fountains**

Restrooms and fountains are directly across the street at the Church Street location and at York Hall.

**i. Site Conditions**

Because of the fall of the ground, the site will required some leveling to be appropriate.

**j. Protection**

The site may have some wind exposure during storms, but is well protected from floods.



**k. Security**

The site is only a few hundred feet from the NPS dispatch office and is directly across from York Hall which is regularly patrolled by the County Sheriffs Office.

**l. Additional Factors**

Placement here may conflict with the use of this field by the Fifes and Drums.

**5) 311 Main Street**

*Adjacent to the Medicine Shop*

**a. Visitor Experience**

The placement of the windmill at this location would provide the visitor with favorable views from Church Street from the Church Street parking lot to Grace Church.

**b. Interpretive Value**

Somewhat removed from the concept of commerce represented by the Customhouse and the Poor Potter, the location adjacent to the Medicine Shop does not have an immediate interpretive link. None-the-less, the location is very visually appealing and could be integrated easily into the existing NPS program.

**c. Visibility**

The building has excellent views along Church Street, however surrounding buildings impede it's prominence on Main Street.

**d. Appropriateness to Site**

While not as crowded as the location at 404 Main Street, the windmill may appear squeezed into this location because of the nearby Medicine Shop. The site is located on a small rise which makes it appear to be well suited to receiving favorable winds without actual being fully exposed.



**e. Relationship to Surroundings**

The siding and building materials on the mill are consistent with those used in the Medicine Shop.

**f. Accessibility**

The site is at the corner of Church and Main Streets and is easily accessible. There is a small rise which may impede handicap access, but this can be corrected with a paved walk in the future.

**g. Parking**

The York Hall parking lot is immediately adjacent to the site.

**h. Restrooms and Water Fountains**

Restrooms and fountains are located in York Hall.

**i. Site Conditions**

Above the initial rise, the site is level and flat. Anchor points will need to be installed.

**j. Protection**

The location does have some wind exposure, but is well above the York River and flood plain.

**k. Security**

The site is visible from York Hall and is within ¼ mile of the NPS dispatch office.

**l. Additional Factors**

None.

6) **200 Ballard Street**

*Directly across from the U.S. Post Office*

**a. Visitor Experience**

At this location, the windmill would greet visitors as they travel to and from the Yorktown Waterfront and would be highly visible along Main Street. Being position on the opposing corner from York Hall, the mill could easily interact with both the Gallery at York Hall and the York County Historic Museum in the basement of York Hall.

**b. Interpretive Value**

While current interpretive tours do not extend to this location, the 200 Ballard Street site is the closest site to the original windmill location.

**c. Visibility**

Visibility at this site is exceptional, and the windmill's presence here would become a significant element in the village's viewshed. Because of the steep hill leading to the waterfront, the vanes of the mill may be visible from the banks of the York River.

**d. Appropriateness to Site**

The site is on a low rise on a hill top. With only a few obstructions to the wind, the site is functionally appropriate for an operating windmill.

**e. Relationship to Surroundings**

The surrounding buildings are a mix of brick and frame construction, however, the reconstructed Swan Tavern and storage structure across the street are of similar construction materials as the windmill.

**f. Accessibility**

The site is adjacent to a paved sidewalk and easily accessible by handicapped and the elderly.

**g. Parking**

Nearby parking is available at York Hall, the Post Office or the York County Business offices on Ballard Street.

**h. Restrooms and Water Fountains**

Restrooms and fountains are available at York Hall across the street.

**i. Site Conditions**

The site is flat and level. Anchor points will need to be installed prior to installation.

**j. Protection**

The site does have some wind exposure, however it is well above the York River and potential flooding.

**k. Security**

The site is visible from York Hall and is near the County Business Offices which are subject to frequent patrols by the York County Sheriff's Department.

**l. Additional Factors**

Although an excellent location, the use of this site may preclude its traditional use by the Sheriff's Department as an oversight position during celebrations and events.



7) **203 Ballard Street**

*Field behind the Fifes and Drums of York Town*

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**a. Visitor Experience**

Somewhat separated from the other sites, visitors will encounter this location as they drive along Ballard Street. Visitors who travel from the NPS Visitor Center into the village are likely not to see the windmill in this location.

**b. Interpretive Value**

Interpretive walks from the NPS Visitor Center would need to be extended to incorporate this site.

**c. Visibility**

The site has good visibility along Ballard Street but is not visible from Main Street.

**d. Appropriateness to Site**

The site is clear and most of the buildings around it are of similar construction, with the exception of the Hamilton Building which is a concrete block structure. With trees and buildings along most of its boundaries, the site is not likely to receive sufficient winds to justify the placement of a windmill at this location.

**e. Relationship to Surroundings**

The Fife and Drum Headquarters and the Swan Tavern are of similar construction, however, the Hamilton Building is a significant inconsistency.

**f. Accessibility**

The site is easily accessible from Ballard Street.

**g. Parking**

Parking is available at either the Church Street lot, York Hall, the Post Office or the York County Business Offices.

**h. Restrooms and Water Fountains**

Nearest restrooms and fountains are available at York Hall.

**i. Site Conditions**

The site does fall off on the Swan Tavern side, however the opposite side is quite level. A small tree will need to be removed to accommodate the installation of the mill.

**j. Protection**

The location is well protected from both winds and rising water.

**k. Security**

The site is one block from the NPS dispatch office, York Hall and the York County Business Offices. Regular patrols already occur and should minimize the likelihood of vandalism.

**l. Additional Factors**

Placement here may conflict with the use of this field by the Fifes and Drums.



8) **210 Church Street**

*Between Marl Inn and Fifes and Drums of York Town*

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**a. Visitor Experience**

Visitors are likely to miss the windmill at this location unless they are directed to where it is.

**b. Interpretive Value**

The National Park Services' current interpretive program does not extend down Church Street.

**c. Visibility**

The structure will only be visible from the south end of Church Street.

**d. Appropriateness to Site**

The field is broad and flat, providing significant space for the windmill. It is flanked by trees and buildings that would impede, but not stop, air flow.

**e. Relationship to Surroundings**

The surrounding buildings are a hodge-podge of mid to late 20<sup>th</sup> Century structures, including:

- i. The Hamilton Building
- ii. Marl Inn Bed and Breakfast
- iii. Yorktown Masonic Lodge
- iv. The Fife and Drum Headquarters

**f. Accessibility**

The site is easily accessible by foot or vehicle.

**g. Parking**

Parking is directly across the street at the Church Street parking lot.

**h. Restrooms and Water Fountains**

Restrooms and fountains are less than ¼ mile away at the Church Street parking lot.

**i. Site Conditions**

The site is exceptionally flat and level; requiring virtually no site preparation.

**j. Protection**

The location is well protected from winds and flood.

**k. Security**

The site is near the NPS dispatch office, but is concealed by trees on a dark side street. Security may be a concern at this location.

**l. Additional Factors**

None.



9) **219 Church Street**

*Across from Marl Inn and adjacent to Church Street parking*

**a. Visitor Experience**

Visitors are likely to miss the windmill at this location unless they are directed to where it is.

**b. Interpretive Value**

The National Park Services' current interpretive program does not extend down Church Street.

**c. Visibility**

With the current tree-line, the structure will only be visible when standing directly in front of the site on Church Street.

**d. Appropriateness to Site**

The field is flat and sizeable, but is surrounded by trees that will completely inhibit air flow.

**e. Relationship to Surroundings**

Although directly across Church Street from the Marl Inn, the trees on the site tend to isolate it from its surroundings.

**f. Accessibility**

The site is easily accessible by foot or vehicle.

**g. Parking**

Parking is nearby at the Church Street parking lot.

**h. Restrooms and Water Fountains**

Restrooms and fountains are less than ¼ mile away at the Church Street parking lot.

**i. Site Conditions**

The site is flat and level, however, some trees may need to be cut to increase visibility and exposure.

**j. Protection**

The location is well protected from winds and flood.

**k. Security**

The site is near the NPS dispatch office, but is concealed by trees on a dark side street. Security may be a concern at this location.

**l. Additional Factors**

None.



**10) 209 Church Street**

*Across from Fifes and Drums of York Town*

**a. Visitor Experience**

This location does have some visibility from Church, Reed and Main Streets. Being immediately adjacent to the Church Street parking lot, the mill will greet visitors that park at this location.

**b. Interpretive Value**

The current NPS interpretive tours end near this site and could be easily expanded to include this location. The site is within view of both the Poor Potter and the Customhouse and could easily be integrated into a discussion of early industry and commerce.

**c. Visibility**

While the site has some visibility along Main, Church and Reed Streets; it is significantly obstructed by the Fife and Drum Headquarters across the street.

**d. Appropriateness to Site**

The level of activity at this location from both parking and the Fifes and Drums may result in noise and disruption that make this site somewhat distracting.

**e. Relationship to Surroundings**

The Fife and Drum Headquarters, Yorktown Shoppe and Museum on Main all have similar frame construction.

**f. Accessibility**

The site is easily accessible by foot or vehicle.

**g. Parking**

The site is immediately adjacent to the Church Street parking lot.

**h. Restrooms and Water Fountains**

The site is between the Church Street parking lot and the restrooms. A water fountain is located directly behind the structure.

**i. Site Conditions**

The site is mostly flat, but falls quickly as it approaches the Customhouse garden. Some excavation may be necessary to make this site adequately level.

**j. Protection**

The site has little wind exposure and is well above the York River and flood plain.

**k. Security**

The site is visible from the NPS dispatch office.

**l. Additional Factors**

Visitors to the Fife and Drum Corps office park on this site during rehearsals or when the parking lot is full. The placement of the windmill here may conflict with their traditional use of the site.



**11) 100 Comte De Grasse Street**

*On Yorktown waterfront at Comte De Grasse*

**a. Visitor Experience**

While the site is significantly removed from the historical part of the village, it should receive significant visitation from beach goers and visitors to Yorktown's waterfront restaurants.

**b. Interpretive Value**

Because of the hills involved, the existing interpretive program would likely not be extended to include this location.

**c. Visibility**

The site is highly visible from the York River and the east end of Water Street, however, the road terminates near the site and it is on the opposite end of the village from Riverwalk Landing and other attractions.

**d. Appropriateness to Site**

While the field is large and flat enough to accommodate the windmill, it is located in a draw that can only potentially receive wind from one direction.

**e. Relationship to Surroundings**

The surroundings at this location are unremarkable.

**f. Accessibility**

The site is easily accessible if parking is available.

**g. Parking**

There is some roadside parking near the side, and a new parking lot less than ¼ mile away.

**h. Restrooms and Water Fountains**

The nearest restrooms and water fountains are located at the County Park immediately east of the site.

**i. Site Conditions**

The site is flat and level. Because it is in a sandy area that is prone to wave action, the footings will need to be significantly deeper.

**j. Protection**

The site could be exposed to significant winds during a storm, however, the greater threat comes from flooding during hurricanes and other tropical storms.

**k. Security**

Security at this location is minimal.

**l. Additional Factors**

Most of the visitors to this part of the village are more interested in river recreation than history, making this location less than ideal for the windmill.



**D. RECOMMENDATIONS**

In consideration of all factors, the sites identified as 2 (*110 Nelson Street*) and 1 (*501 Main Street*) are the preferred location for the windmill because they offer an excellent interpretive opportunity and a large, flexible surrounding field that can accommodate other activities. The field also has a large street frontage that might include wayside signage that details the history of milling and the American wooden engineering period.

From a purely aesthetic standpoint, the site identified as 6 (*200 Ballard Street*) has the most significant and favorable impact on the village's viewshed and the experience of visitors to Yorktown. While not perfectly suited to interpretation, it is none-the-less an attractive and appropriate site.

Finally, sites 4 (*200 Church Street*) and 5 (*311 Main Street*) offer an attractive and centrally located venue that will be particularly appealing to village residents, as well as visitors. These locations are along existing interpretive tour routes and could easily be integrated into the National Park Service's programs.

## **E. Contact Information**

For additional information, please contact:

**Walt Akers**

110 Kenneth Drive  
Seaford, Virginia 23696

757 / 846-4810

akers@jlab.org