

**Appendix D:
Shadows**

As discussed in Chapter 1, “Project Description,” it is anticipated that the larger building in terms of height and floor area on Site 2 would be located on the western portion of the site along Eighth Avenue, and the smaller building would be located on the eastern portion of the site along Seventh Avenue. The shadow study presented in Chapter 7, “Shadows,” is based on this configuration. However, under the Design Guidelines, the larger building could be located on either side of the site. Therefore, an additional shadow study was conducted to assess potential shadow impacts if the larger building on Site 2 were on the eastern part of the site, along Seventh Avenue, and the shorter building were on the western side, along Eighth Avenue.

This Appendix refers to the Site 2 configuration analyzed in Chapter 7, with the larger building located along Eighth Avenue, as the “preferred configuration,” and the configuration analyzed herein, with the larger building along Seventh Avenue, as the “alternate configuration.”

The analysis conducted for alternate configuration followed the same methodology as Chapter 7, i.e. the methodology set forth in the 2020 *CEQR Technical Manual*, including a full detailed analysis. Similar to the analysis in Chapter 7, the analysis accounts for the maximum buildable envelope for each development site, up to the illustrative building height, plus an additional 150 feet to provide for future design flexibility and potential additional rooftop structures, such as spires (except for the midblock portion of Site 1, which was limited to 400 feet in height).

In the 2028 Phase 1 analysis year, the extent and duration of project-generated incremental shadow would be the same as the preferred configuration, because Site 2 would not be developed by 2028.

In the 2038 Phase 2 analysis year, the alternate configuration would cast incremental shadow on the same 48 sunlight-sensitive resources as would the preferred configuration. The extent and duration of incremental shadow would be the same as with the preferred configuration for most of the sunlight-sensitive resources, and slightly different for others. The alternate configuration would cause significant adverse shadow impacts to the same nine resources as with the preferred configuration: Madison Square Garden (MSG) privately owned public space (POPS), Plaza 33, Herald Square Park, Chelsea Park, the Penn South open spaces, the Farley Building, St. Michael’s Catholic Church, St. Francis of Assisi Church, and the former Greenwich Savings Bank.

Below is a summary of differences in incremental shadow durations for each resource, with the alternate configuration.

IMPACTED RESOURCES

OPEN SPACES

Madison Square Garden (MSG) Privately Owned Public Space (POPS)

Durations would be the same on December 21 and March 21/September 21, and there would be about 5 more minutes of incremental shadow, and slightly larger coverage for a 15 to 30 minute period on May 6/August 6 and June 21.

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Plaza 33

No difference on December 21 and March 21/September 21; approximately the same incremental shadow durations in total on May 6/August 6 and June 21, albeit occurring at slightly different times in the middle of the day. No meaningful difference in size of incremental shadows.

Herald Square Park

No difference.

Chelsea Park

Same incremental shadow duration on May 6/August 6, but for about 15 minutes, more incremental shadow on east (primarily passive) side, less on west (primarily active) side. On June 21, 10 minutes less incremental shadow on Chelsea Park.

Penn South Open Spaces

No difference on May 6/August 6. There would be 15 minutes more incremental shadow on June 21.

HISTORIC RESOURCES

Farley Building Skylight

No differences on December 21 or March 21/September 21. On May 6/August 6 there would be the same duration of incremental shadow, but it would be smaller in size between 10:30 AM and 12:00 PM, including a 15 minute period around 11:15 AM when coverage would be partial, rather than a complete elimination of sunlight as with the preferred configuration. On June 21 there would be 30 minutes less shadow on the skylight with the alternate configuration.

Farley Building Colonnade and Steps

No differences on December 21 or March 21/September 21. On May 6 and August 6 there would be 5 minutes more incremental shadow with the alternate configuration, and the size of the incremental shadow would be very similar over the total duration. On June 21, there would be 5 minutes less incremental shadow and generally smaller coverage throughout the total duration.

St. Michael's Catholic Church

No difference.

St. Francis of Assisi Church

No difference.

Former Greenwich Savings Bank

No difference.

OTHER RESOURCES

NATURAL RESOURCES

Hudson River

There would be approximately 5 minutes less incremental shadow on March 21/September 21 and May 6/August 6, and 10 minutes less on June 21 with the alternate configuration.

OPEN SPACES

Clement Clarke Moore Park

There would be approximately 15 minutes more incremental shadow on June 21 with the alternate configuration.

Ninth Avenue Greenstreets, West 22nd to West 30th Streets

There would be approximately 20 minutes less incremental shadow on one Ninth Avenue Greenstreets island. No other differences.

Route 9A Bikeway

On December 21, there would be an additional 6 minutes of incremental shadow with the alternate configuration. On March 21/September 21, there would be 10 minutes less incremental shadow. On May 6/August 6, there would be 18 minutes less incremental shadow, and on June 21 there would be no difference.

Hudson River Park

There would be approximately 10 minutes less of incremental shadow on March 21/September 21. The alternate configuration would not cast any incremental shadow on the park on May 6/August 6, whereas with the preferred configuration there would be approximately 30 minutes of incremental shadow, primarily on small portions of Chelsea Waterside Park and Pier 62 near West 23rd Street. There would be no difference on December 21.

The High Line

There would be approximately 30 minutes less incremental shadow on both May 6/August 6 and June 21 with the alternate configuration. No difference on March 21/September 21.

450 West 33 Street - Manhattan West

There would be approximately 10 minutes less incremental shadow on March 21/September 21 with the alternate configuration. No other differences.

1 Penn Plaza

There would be approximately 20 minutes more incremental shadow on May 6/August 6, and 30 minutes less on June 21 with the alternate configuration. No other differences.

Times Square Plaza

On December 21, there would be an additional 5 minutes of incremental shadow with the alternate configuration. No other differences.

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HISTORIC RESOURCES

Guardian Angel Church

There would be approximately 15 minutes more incremental shadow on June 21 with the alternate configuration.

Church of the Holy Apostles

There would be approximately 20 minutes more incremental shadow on June 21 with the alternate configuration. No differences on May 6/August 6.

518 West 26th Street, 508 West 26th Street, and 259 Tenth Avenue

On May 6/August 6, these buildings would receive approximately 20, 15, and 5 minutes less of incremental shadow, respectively, with the alternate configuration. On June 21, 259 Tenth Avenue would receive 30 minutes less.

Hudson Yards Synagogue

There would be approximately 20 minutes less incremental shadow on March 21/September 21 with the alternate configuration.

Times Square Theater

On December 21, there would be an additional 5 minutes of incremental shadow with the alternate configuration.

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