

# New York State Life Sciences Public Health Laboratory Harriman Campus Site Evaluation Report

*CHA Project Number: 33763*

*Prepared for:*  
*Dormitory Authority State of New York*  
*515 Broadway*  
*Albany, NY 12207*



*Prepared by:*



*III Winners Circle*  
*Albany, NY, 12205*  
*Phone: (518) 453-4500*

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## FIGURES

Figure 1	Harriman Campus Site Location
Figure 2	Harriman Campus Development Concept

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## **1.0 INTRODUCTION**

CHA Consulting, Inc. (CHA), at the request of the Dormitory Authority of the State of New York (DASNY), evaluated a 27 acre site on the Harriman Campus for potential development into a Life Sciences Laboratory for the New York State Department of Health (NYSDOH). The site location is shown in Figure 1.

CHA completed a limited site evaluation of the site including the review of a previous environmental work on the site, evaluation of potential site development constraints, review of a geotechnical desktop study, an assessment of site infrastructure, and preparation of a site development concept.

## **2.0 HARRIMAN CAMPUS SITE**

The Harriman Campus site is a 27 acre parcel located on the east end of the campus property (refer to Figure 1). The property was previously home to the campus' Buildings 1/1A (demolished in 2014) and 2 (demolished in 2016).

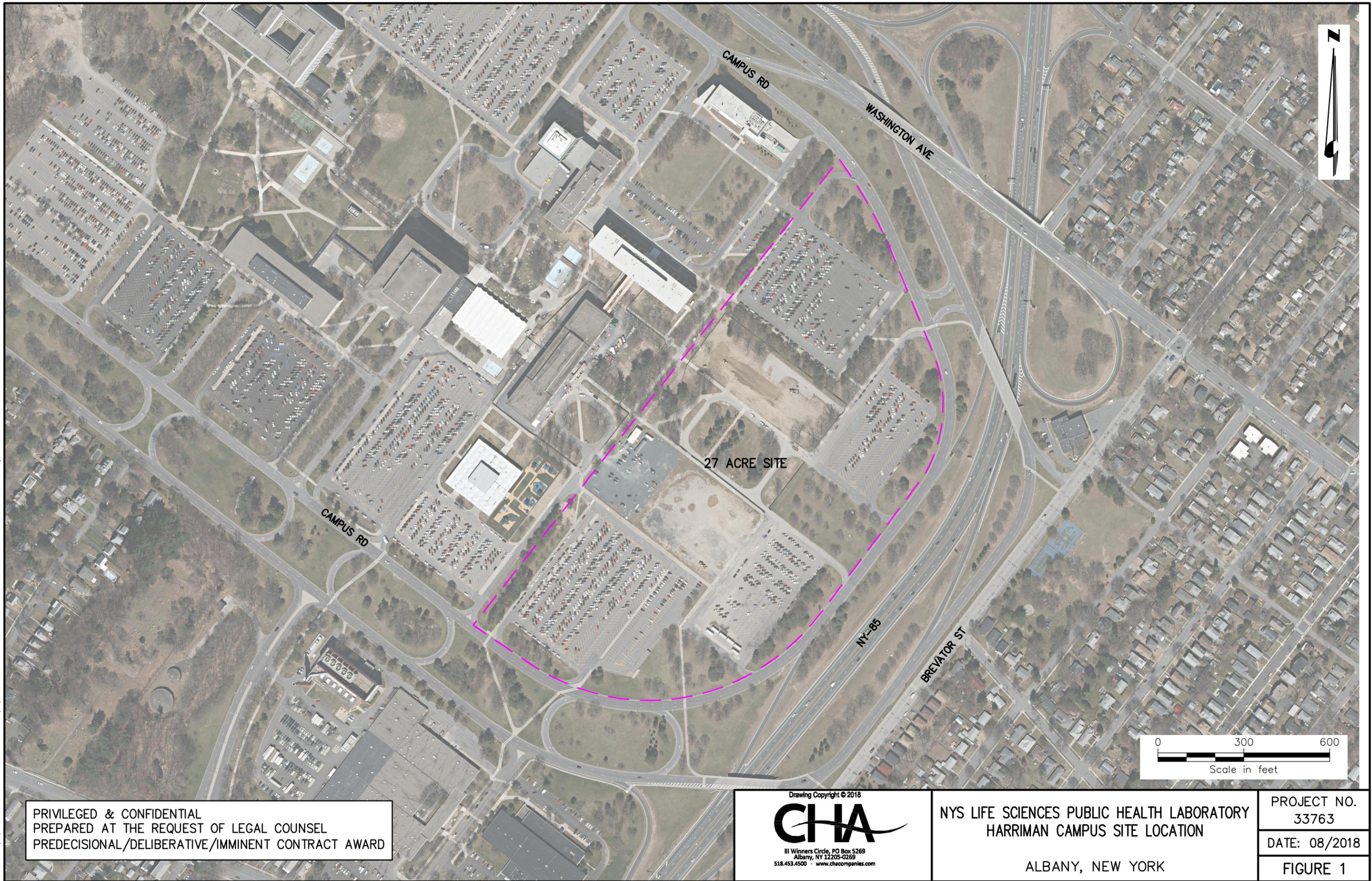
### **2.1 ENVIRONMENTAL ASSESSMENT**

As part of the Building 2 demolition, an underground fuel storage tank (UST) was removed from the site. Tank #B2A was a 2,000 gallon diesel UST that provided fuel to the emergency generator in Building 2 at the State Office Campus. Installed in 2010, this tank was no longer necessary after the demolition of Building 2. The tank closure activities completed at the site in March of 2016 included product removal, tank cleaning, tank removal, soil inspection, and soil sampling.

No evidence of contamination such as staining or odors were noted in any soil samples collected at the site. The soil sampling analytical results indicated that VOCs and SVOCs were not detected at concentrations above laboratory detection limits in any of the (3) soil samples collected below the tank. Based on the results of the visual inspection, the soil screening and the analytical results, the report concluded that there has not been a release from UST #B2A.

The demolition of Buildings 1/1A and 2 was limited to approximately 24" below grade. Basement floors and mat foundations were drilled or broken up to allow for drainage and the basements were filled with suitable material. The building foundation walls and footings remain in place on the site. This could impact the construction costs associated with new buildings or site utilities that conflict with these remaining buried structures.

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**CH2M**  
111 Winners Circle, PO Box 5269  
Albany, NY 12205-0269  
518.453.4500 • www.ch2m.com

NYS LIFE SCIENCES PUBLIC HEALTH LABORATORY  
HARRIMAN CAMPUS SITE LOCATION

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FIGURE 1

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## 2.2 GEOTECHNICAL CONSIDERATIONS

CHA performed a geotechnical desktop study for the proposed Harriman Office Campus building site located in Albany, New York. Development could include a 5-story main building, surface parking, and other support buildings.

Several resources were used to develop a preliminary understanding of the subsurface conditions at the site. These resources included geologic maps available through the New York State Museum, a geotechnical report from this site, and recent aerial imagery. The US Department of Agriculture Natural Resources Conservation Service (USDA NRCS) soil survey was indicative of developed land as would be expected on this site and not further referenced.

The following summarizes information obtained from the various map sources:

- According to the *Surficial Geologic Map of New York, Hudson-Mohawk Sheet* (Caldwell, D.H. et. al. 1991), the surficial soils at this site location are mapped as lacustrine sand and dunes. Lacustrine sand is a deposit associated with large bodies of water, generally a near-shore deposit or near a sand source. Dunes are fine to medium sands generally wind reworked lake sediments. Both sand deposits are generally well sorted and stratified.
- According to the *Geologic Map of New York State, Hudson-Mohawk Sheet* (Fisher, D.W. Isachsen, Y.W. Richard, L.V. 1970), the bedrock below the proposed site is Normanskill Shale.

CHA has completed several geotechnical projects at the adjacent University at Albany campus and nearby SUNY Polytechnic Institute and maintains a library of geotechnical reports. The geotechnical report from the original State Office Campus development at this location titled *Report on Subsoil Investigations and Foundation Recommendations for the New York State Office Buildings at the Campus Site* prepared by Moran, Proctor, Mueser & Rutledge Consulting Engineers and dated July 1954 (Campus Site Report) was reviewed for this study. Although it was completed largely predevelopment of the State Office Campus, it provides site specific information at the project site at least at depths greater than may have been affected by site development.

Subsurface conditions encountered in that evaluation prior to development of the office campus generally consisted of the following with increasing depth:

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- Windlaid sands of variable thickness (previously referenced dunes). The windlaid sands generally consisted of fine to medium sand with trace silt and was loose.
  - Lacustrine sand consisting of loose to medium silty fine sand and varying thickness of 8 to 27 feet.
  - Lacustrine silt consisting of varved brown silt containing layers of brown silty fine sand and brown and gray clay. The thickness of this layer averaged 50 feet and varied from 14 feet to 50 feet.
  - Lacustrine silty clay consisting of varved brown silty clay with thin layers of brown silt and gray clay followed by varved blue gray silty clay with occasional layers of gray clay and blue gray silt. The thickness of the layer varied greatly due to the irregular surface of the underlying glacial till. Based on review of some of the geological section drawings included in the report, this layer varies in thickness from 35 feet to 160 feet within the proposed project area.
  - Glacial till consisting of compact material varying from sand and gravel with clay binder to boulder clay with rock fragments. As previously referenced, there is extreme variability in the surface of the glacial till within the project site and the thickness of the till varies from 10 feet to over 100 feet.
  - Shale bedrock underlies the glacial till.

Note that in addition to the soil conditions explored prior to development, the Campus Site Report also contains some discussions and information pertaining to the grading proposed for development of the office campus. Based on review of this information, it appears that fills on the order of up to 15 to 20 feet and cuts on the order of up to 15 feet were being considered within this project site including the fill of a low-lying swamp area. Note that discussions in the report were not necessarily based on final proposed grades and the datum used in the report is outdated, therefore, actual grading may have varied from what was discussed. A more detailed evaluation could be performed to determine previous earthwork activity by comparison with current existing site grades and by adjusting datums. The Campus Site Report discussion on groundwater indicates that groundwater was present in the upper sand soils at an average depth of 7 feet. The report also includes a discussion that the water table in the varved clay may still be depressed to a lower elevation.

Based on the information reviewed for this study, the proposed 1-story structures with low to moderate column loads can likely be supported on shallow foundation systems such as spread footings on this site. A settlement analysis should be anticipated to verify the feasibility of shallow foundations due to the presence of compressible silt and clay soil beneath the project site. The presence and characteristics of existing fill from previous grading activity also would need to be

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carefully evaluated to support a final decision to use shallow foundations. Depending on this evaluation, some over excavation and re-compaction of existing fill soil or an engineered ground improvement system that modifies the existing ground to facilitate the use of shallow foundations may be required for adequate support.

Shallow foundation support of the proposed 5-story main building is likely not feasible at this site due to the potentially unacceptable total and differential settlement resulting from compression of the compressible clay and silt soil beneath the site from the higher column loads anticipated for these structures. A deep foundation system that transfers the foundation loads to the glacial till or bedrock layers is likely an economical alternative. Typical deep foundation systems suitable for these conditions in this area include driven steel H-piles or drilled shafts. Design of the foundation system shall be performed by a Professional Engineer licensed in New York State in accordance with the current edition of the New York State Building Code.

Dewatering may be required during construction based on the available information reviewed. Underdrains may be required for asphalt pavements and concrete flatwork depending on actual subgrade conditions and groundwater depths. Stormwater infiltration practices may be feasible based on anticipated infiltration rates of the expected sand soils near the surface but be limited due to ground water depth. Careful investigation of actual groundwater depths at areas planned for infiltration would be required.

Based on review of historic aerial imagery available, two former state office buildings were located on this site. It appears that one was demolished in 2014 and the other in 2016. Records including original foundation plans and any demolition plans that are available should be reviewed to determine what impacts, if any, the presence of old footings, foundation mats, and/or piles would have on new development.

A comprehensive subsurface exploration is recommended to assess the subsurface conditions, and the results of the exploration should be interpreted by a qualified geotechnical engineer. Recommendations for design of the project should be summarized in a geotechnical engineering report prepared by a New York State-licensed Professional Engineer.

### **2.3 SITE INFRASTRUCTURE**

Based on the 2013 programming study for the Life Sciences Laboratory, utility services required for the proposed facility were estimated as follows:

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- Water 18,000 gpd
  - Waste water 18,000 gpd
  - Normal Power 11 MW
  - Natural Gas 175,000 cfh

The following summarizes the availability of each utility system at the Harriman Campus Site:

#### Sanitary Sewer

The NYS Office of General Services (OGS) and the City of Albany are advancing the design of sewer improvements on the Harriman Campus that will include a new central sewer pump station and force main. A gravity sewer connection for the 27 acre site will be available on the west side of the site, just west of Buildings 3 and 4.

#### Water

The NYSOGS is completing water system improvements on the Harriman Campus, including the rehabilitation of the existing booster pump station and miscellaneous distribution system improvements. The existing water distribution system within the 27 acre parcel will be abandoned. New connections to the campus distribution system will be available on the west side of the site. New distribution piping for domestic and fire protection flows will be required for development of the site.

#### Stormwater

It will be necessary to develop a stormwater management plan for the development of the 27 acre parcel on the campus. The stormwater management plan shall identify and design ways to manage the stormwater runoff from the redeveloped site to address both water quality and quantity mitigation requirements of the City of Albany and the New York State Stormwater Management Design Manual. The City of Albany regulations limit the peak rate of stormwater discharge from the site to that of a 10 year storm for undeveloped conditions.

Typical stormwater management plans promote the use of infiltration techniques, utilizing on site soils to address both water quality and quantity reduction requirements. The Harriman Campus site soils appear to be conducive to an infiltration approach to stormwater and the 27 acre site provides adequate area to incorporate more traditional stormwater management techniques which will help minimize costs associated with construction.

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### Electric

The power demand for the proposed facility is anticipated to be 11 MW. The State-owned Harriman Campus substation is one source that could be available to serve this facility.

In order to advance a more detailed study for National Grid service to the site, a Support Service Agreement with National Grid would need to be written. A retainer would be paid and then National Grid would produce a detailed feasibility study including a cost estimate.

### Gas

The natural gas demand for the proposed facility is estimated to be 175,000 cfh. National Grid maintains a 124 psig distribution system around the entire Harriman Campus, which could likely provide the facility demand.

National Grid indicated that a formal request for a gas load study must be processed through the account representative from the community and customer management group at National Grid.

### Traffic

The site is located on the east side of the Harriman Campus with access from the existing campus ring road system. Separate access will be provided from the campus ring road for service and deliveries. The existing campus road network has capacity to accommodate the proposed development and no road improvements are envisioned at this time.

## **2.4 SITE REDEVELOPMENT CONCEPT**

The Harriman Campus site is zoned Mixed-Use Campus/Institutional (MU-CI). Permitted uses listed within the MU-CI district are not specific to the proposed laboratory use, however, offices are a permitted use and there is a provision indicating that “if an office use involves dangerous or hazardous materials and/or procedures subject to federal or state safety regulations, then a Conditional Use permit shall be required.”

Other dimensional standards required for the MU-CI zoning district include:

- Minimum Lot Width: 80 feet
- Maximum Impervious Cover: 60%
- Setbacks
  - Min. Front: N/A
  - Max. Front: 20 feet

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- Min. Side: 0 feet
  - Min. Rear: 0 feet (adjacent to R District – 15 feet)
  - Max. Building Height 8-1/2 stories
  - Max. Height Accessory Bldg.: 1-1/2 stories

### **3.0 SUMMARY**

CHA completed a limited site evaluation of a 27 acre parcel on the Harriman Campus for the Life Sciences Laboratory.

The evaluation clearly indicates that the 27-acre Harriman Campus site is a suitable site for development of the Life Sciences Laboratory. Its 27 acres of available space, existing campus road network, and available infrastructure combine to make it a desirable site. Based on our evaluation, the Harriman Campus site provides flexibility to meet the current facility program needs as well as provide for the potential for future expansion or the addition of other uses.

Once the updated programming study is completed, it is recommended that consideration be given to completing the following:

- An initial geotechnical evaluation of the site
- A more detailed evaluation of utility services and confirmation with service providers that adequate capacity is available
- Initiation of the State Environmental Quality Review (SEQR) process.

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FIGURE 2