

# *Site / Civil*



This section describes the general guidelines for various site requirements for any new building. The NIH campus has been developed to provide a pleasant environment for the enhancement of the research which takes place on campus. An important part of this environment is the various features which provide a suburban campus-type setting with attractive landscaping and a minimum of paving. In addition the important research which takes place requires the support facilities to be constructed to the highest standards available in the industry to minimize disruption caused by repair and reconstruction. The Division of Engineering Services has prepared campus master plans for buildings as well as underground utility services to meet the needs for the future which shall be followed whenever possible.

## **G.1 Reference Codes and Standards**

The following standards shall be followed when constructing new structures on the NIH campus:

- NIH Campus Master Plan in locating new campus facilities
- NIH Master Utility Plan in locating existing campus utilities
- Maryland Department of Transportation State Highway Administration Standard Details for installation of storm drains
- Washington Suburban Sanitary Commission for installation of domestic water and sanitary sewer
- Montgomery County Department of Transportation, Standard Details for Roadways, for installation of roadways, parking, and miscellaneous appurtenances
- Maryland Department of Environment (MDE), Standard Details for Sediment Control and Stormwater Management



## G.2 Preliminary Planning Criteria

Existing utilities shall be located from the Master Utility Plan. Locations shall be verified with frequent testpits using vacuum dig techniques to avoid disruption to the campus.

New building or additions shall be located in conformance with the NIH Campus Master Plan and to minimize disruption to existing campus operations including utilities, traffic, parking, and pedestrian access. Vehicular and pedestrian access shall blend with existing traffic patterns. Access for emergency vehicles, including fire and police, shall be provided.

Borings and geotechnical reports shall be obtained from a qualified geotechnical consultant and shall include a preliminary recommendation for sheeting and shoring.

All existing underground steam and condensate piping to be disturbed shall be tested for asbestos-contaminated insulation.

Existing natural features such as trees, slopes, and drainage characteristics shall be preserved whenever possible.

The construction of projects shall be phased to minimize the disruption to existing campus activities.

Contractor staging areas shall be identified as early in the project as possible and reasonable space provided for contractor parking, trailers, cranes, delivery vehicles, maneuvering, and other site-specific factors. The staging area shall be surrounded with a 1800 mm chainlink fence with brown plastic screening material.



## G.3 Site Design

### G.3.1 Parking and Paving

Parking for vehicles shall be provided in conformance with the NIH Memorandum of Understanding (MOU) with Montgomery County. The size and types of parking spaces should be in conformance with Montgomery County regulations. Handicapped spaces shall be adjacent to buildings whenever possible.

Roadway and parking lot paving sections shall conform to the following:

Area		Paving Section
Parking Lot	Subbase -	100 mm dense graded aggregate subbase
	Base -	75 mm base course bituminous concrete (BI)
	Surface -	Two, 40 mm surface course bituminous concrete (ST)
Roadways	Subbase -	150 mm dense graded aggregate subbase
	Base -	Two, 70 mm lifts base course bituminous concrete (BI)
	Surface -	Two, 40 mm lifts surface course bituminous concrete (ST)
Sidewalks	Sidewalk widths shall be an optimum of 6 feet with 5 feet minimum. Concrete is to be a minimum of 3 1/2 inches, 3000 psi, 6% air entrainment, 2# carbon black/ cu. yd., and sealed with clear curing compound.	

### G.3.2 Delivery and Service Areas

Loading Docks: All new campus buildings and buildings subject to major retrofitting will require the installation of loading docks in areas separated from normal daily pedestrian and vehicular traffic. A separate area for a minimum of one dumpster will be required within the loading dock space, which shall be constructed of a 200 mm thick concrete pad large enough to support a load generated by the front of the refuse truck. The dumpster shall not



block the loading dock, but access for disposal of trash to the dumpster should be directly from the loading dock. Adequate drainage shall be provided by use of trench drains or positive drainage. Areas for piling snow from snow removal operations are desirable which do not block the dumpster or the loading dock. Heated pavement is not permitted for snow removal due to maintenance and energy concerns.

Screening: Visual screening of all loading areas is desirable to minimize audible and visual disruption to the existing NIH campus and surrounding community. Screening can consist of fences, walls, landscaping, etc. Screening shall be carefully coordinated with security and CCTV requirements to avoid conflict with security supervision of the loading dock.

Access: Access to loading docks will be directly from NIH campus roads. No access through parking lots will be permitted.

### **G.3.3 Grading**

Maximum slopes on lawn areas are 3:1. If slopes are required to be steeper than 3:1, a retaining wall with a top railing will be investigated.

Minimum slopes on lawn areas are 2% positive slope away from buildings.

Maximum slopes of sidewalks are not to exceed 8% unless approved by the NIH. Railing should be installed when the slope exceeds 5%.

A 1,000 mm wide by 150 mm deep pea-gravel barrier with a physical weed geotextile shall be provided around all new or newly landscaped buildings for pest management. Aluminum or steel edging shall be used around the barrier. All planting beds will begin outside the gravel strip.

### **G.3.4 Landscaping**

The selection of plant materials must be from the following NIH plant list. The list includes trees and shrubs compatible with existing NIH plantings and standard practices.



DECIDUOUS TREES

- I. OAKS
  - a. Willow
  - b. Pin
  - c. Scarlet
  - d. Red
  - e. Black
- II. ASH
- III. MAPLES
  - a. Red (Red Sunset)
  - b. Sugar (Green Mountain)
  - c. Norway Columnar
- IV. LITTLE LEAF LINDEN
- V. DOGWOOD
  - a. Florida
  - b. Kousa
  - c. Mas
- VI. CHERRIES
- VII. RED BUD
- VIII. KOELREUTERIA
- IX. SOPHORA JAPONICA
- X. AMELANCHIER
- XI. CRAB APPLES
- XII. AM HORNBEAM
- XIII. HAWTHORN
- XIV. CREPE MYRTLE

EVERGREEN TREES

- I. PINES
  - a. Black
  - b. White
  - c. Austrian
- II. CANADIAN HEMLOCK
- III. AMERICAN HOLLY
- IV. CHINESE HOLLY
- V. NORWAY SPRUCE
- VI. CEDAR

MAJOR SHRUBS

- I. AZALEA VARIETIES
- II. RHODODENDRUM
- III. FORSYTHIA
- IV. ABELIA
- V. VIBURNUM
- VI. COTONEASTER
- VII. JAPANESE HOLLY
- VIII. JUNIPER
- IX. BURNING BUSH
- X. BOXWOOD
- XI. EUONYMOUS FORTUNEI
- XII. BARBERRY
- XIII. TAXUS
- XIV. WEIGELA



All disturbed areas not paved or landscaped shall be restored with Maryland certified sod on a minimum of 75 mm of topsoil.

Lighting of exterior areas of the campus is critical to campus security. The design of landscaping and lighting should minimize areas suitable for hiding and avoid any dark areas. An average 50 lx light level shall be maintained for all areas.

### G.3.5 Utility Service

Centrally supplied services for the following utilities are available on the NIH campus with the following minimum criteria:

<u>Utility</u>	<u>Minimum Size</u>	<u>Material</u>
Storm Drain	300 mm	RCP
Sanitary Sewer	150 mm	PVC SDR 35
Domestic Water	150 mm	Cement Lined Ductile Iron
Chilled Water	$\geq$ 150 mm	Steel Extra Heavy Seamless
	$<$ 150 mm	Steel Schedule 40 Seamless
Steam	$\geq$ 150 mm	Steel Extra Heavy Seamless
	$<$ 150 mm	Steel Schedule 40
Condensate	$<$ 150 mm	Stainless Steel Schedule 40
High Pres Drip	N/A	Stainless Steel Schedule 40
Natural Gas	N/A	PlasticType
Compressed Air	$>$ 100 mm	Steel Schedule 40
	$\leq$ 100 mm	Copper

The NIH has developed extensive computer modeling for existing utilities. Expansion of these utilities requires the use of the following programs for analysis:

#### Required Computer Modeling

Storm Drain	EDS Storm Drain
Sanitary Sewer	EDS Sewer
Domestic Water	KY Pipe
Chilled Water	KY Pipe
Steam	Steamnet
Other	No Standard



### **G.3.6 Sediment and Erosion Control**

All construction must meet the requirements of the MDE for sediment and erosion control. Drawings shall be developed and approved for construction by the MDE prior to the start of grading.

### **G.3.7 Stormwater Management**

All construction must meet the requirements of the MDE for stormwater management. Drawings shall be developed and approved for construction by the MDE prior to the start of grading.





## **G.4 Community Relations**

The NIH has an Office of Community Liaison (OCL) for the purpose of informing the public of any construction. All proposed disturbances must be coordinated through the OCL.

All new or temporary facilities must be designed to minimize noise and other disturbance to the surrounding community. Buffer zones, noise walls, screening, and setbacks shall be considered to minimize impact on the surrounding community.



## G.5 Trailer Guidelines and Siting Procedures

This document summarizes the process for selecting sites for any new use of land on the NIH Bethesda campus and the NIH Animal Center at Poolesville (“the campuses”). It also summarizes guidelines for determining the suitability and appropriateness of trailers on the campuses, provides trailer specification and operational guidelines, and outlines the trailer- siting procedures.

### G.5.1 Definitions

**Site:** An area of land described by a site drawing that indicates its size, shape, and position relative to nearby landmarks.

**New use:** Any proposed use of a site for any purpose other than its existing use is considered a new use. This includes, but is not limited to, the following: establishment of contract limits for construction sites/staging areas (either fenced or unfenced); installation of trailers, major signs, or certain small structures; changes to parking areas, sidewalks, utility rights-of-way, or roadways; and construction of new facilities. It does not include emergency repair work that necessitates the immediate closing-off of an area. Whether a site is considered for a new project or for an extension of time of an existing project, it is considered a new use.

**Trailer:** A temporary structure designed to be hauled (as by a tractor-truck) to serve wherever parked. It may be installed wheeled or unwheeled, independent or modular, depending upon its purpose. There is nothing to indicate the origin of this reference.

**POR:** The U.S. Public Health Service (PHS) requires a Program of Requirements (POR) for all new major construction projects, for buildings and facilities (B&F) improvement projects over one million dollars, and for the acquisition of special-purpose facilities under lease agreements.

**Site Coordination Team:** This team coordinates and evaluates all requests for site selection and develops solutions to meet requirements. The team will also maintain registries (maps) of all structures and site selections, trailer locations/identification numbers, and affected roadways and parking lots. The team membership includes individuals with expertise in the following



areas, appointed by the Associate Director for Research Services (ADRS).

- NIH Campus Master Plan (Team Leader)
- Fire Protection
- Design and Construction
- Grounds Maintenance
- Vehicular and Pedestrian Traffic and Parking
- Site Utilities
- Space Planning
- Safety
- NIH Division of Engineering Services (DES)/PHS Policy
- Mail Delivery
- Core Members

The Team Leader will consult with core members for all standard requests and notify other team members of site selections. As required, the Team Leader will call upon the other team members for assistance in dealing with nonstandard requests and for resolution of general policy or procedural issues. The team members will call upon additional expertise from the NIH Office of Research Services and Institutes, Centers, and Divisions when required.

### **G.5.2 Site Evaluation**

Neighborhood impact: The site should have minimal impact on properties/roadways adjoining the NIH. Impacts to be considered include visual impact, noise pollution, and traffic (location of entrances/parking).

Emergency accessibility: Accessibility for the Fire Department and other emergency equipment must be maintained.

Traffic and parking: Projects that propose to increase or decrease any area serving as a roadway or parking area require evaluation in terms of the NIH Transportation Management Plan, NIH agreements with the National Capital Parks Commission and Maryland-National Capital Park and Planning Commission, traffic flow, and pedestrian safety.



### **G.5.3 Site Selection Procedures**

Construction projects requiring a POR: Site evaluation and analysis for new facilities is reported in the POR using criteria established by the DES Facilities Planning and Programming Branch (FPPB) for site size and location, accessibility, physical features, environmental features, historical and archaeological considerations, integration with the NIH's present and future plans, utilities, and site development cost. Approval of the POR by the ADRS constitutes selection of the facility site. To the extent that the surrounding construction site/staging area is not fully described in the POR, a separate Site Selection Request (Attachment 1) must be sent by the Project Officer to the Site Coordination Team as soon as possible in the planning process so that site selection can be complete prior to the construction procurement process.

Construction projects not requiring a POR: Site evaluations and analysis for non-POR projects should follow, to the extent possible, the POR criteria established by the DES FPPB for accessibility, physical features, environmental features, historical and archaeological considerations, integration with the NIH's present and future plans, utilities, and site development cost. A Site Selection Request (Attachment 1) must be sent by the Project Officer to the Site Coordination Team as soon as possible in the planning process so that site selection can be completed prior to the construction procurement process.

Trailers: See section G.5.4, Trailer Guidelines and Siting Procedures.

Landscaping Improvements and the Installation of Small Structures: Irreversible landscaping improvements (such as major regrading, reforestation, or construction of large walls) and installation of small structures (such as kiosks, major signs, tanks, ground-based antennas) require a Site Selection Request (Attachment 1), which must be sent by the Project Officer to the Site Coordination Team as soon as possible in the planning process so that site selection can be completed prior to the procurement process.



#### **G.5.4 Trailer Guidelines and Siting Procedures**

General Occupancy/Use Guidelines: Trailers on the campuses are appropriate only when (a) there is no practical alternative and (b) there is a requirement for construction-related trailers, with a need for immediate proximity to a construction site.

Occupancy/Use Guidelines Specific to Certain Trailer Types:

- Construction contractor's field office trailers and (on large jobs) subcontractor trailers: Occupancy and use is under contractor control. Trailers are located within contract limits for the construction site/staging area.
- Ready-issue materials storage trailers: There is no occupancy of these trailers. Their use is under contractor control. Trailers are located within contract limits for the construction site/staging area.
- Field support trailers for A/E or CQM contractors or NIH construction project staff: Occupants should be limited to those absolutely needed for daily on-site interaction. Trailers are located within (or near) contract limits for the construction site/staging area.
- Office or laboratory trailers unrelated to a construction project: As a general policy, such trailers are not allowed. If an exception is sought, compelling cases should be addressed to the ADRS for consideration by the NIH Space Recommendation Board and subsequent siting by the Site Coordination Team.

Trailer Siting Procedures: The selection of siting for trailers is established via the POR process or by sending a Site Selection Request (Attachment 1) to the Site Coordination Team. The request should be sent as soon as possible in the planning process so that site selection can be completed prior to the procurement process. Proposed trailer locations should be shown in accompanying documentation. Trailer site evaluation will include:

- Neighborhood impact: No trailers are to be located in the buffer zones as defined by the NIH Campus Master Plan. The



trailer site should have minimal impact on properties/roadways adjoining the NIH. Impacts to be considered include visual impact, noise pollution, and traffic (location of entrances/parking).

- **Emergency accessibility:** Accessibility for the Fire Department and other emergency equipment must be maintained.
- **Site modification:** The modifications required to make a site suitable for location of a trailer should be minimal. Unless part of an approved construction site, there should be no permanent landscaping impact (e.g., removal of trees or extensive regrading).
- **Adjacency to existing structures:** A minimum 40-foot distance should be maintained between the trailer and any existing NIH facility. In instances where this distance cannot be achieved, consultation with the NIH Fire Prevention Section (telephone 496-0487) will be required to identify additional fire safety features for the trailer and adjoining structures within the 40-foot perimeter.
- **Utilities:** Electrical, water, sewer, and telephone hookups should be available nearby, with minimal impact to local capacities.

Trailer Registration and Trailer Identification Numbers: All trailers including contractor-owned or leased trailers must be registered with the Site Coordination Team, which will provide trailer identification numbers. One number will be assigned for every trailer “structure,” which may consist of several modular units. A numbering scheme will be used that identifies the trailer location with a nearby building (e.g., TR-49). If a trailer is moved to a new location, a new number will be assigned. The trailer identification number must be displayed at all times on a clearly visible sign near the main trailer entrance. Format of the sign (size, lettering) will follow DES standards. Trailer numbers will be retired at the time of removal and reused only if a future siting presents similar conditions.



### Trailer Specifications

- Construction-related trailers: Trailers must meet specifications of the DES and the NIH Division of Safety as detailed in the DES Standard Specifications, Section 01500 Series.
- Office or laboratory trailers unrelated to construction projects: Trailers approved for nonconstruction-related use will require a case-by-case review of specifications by DES.

### Operating Guidelines for Trailers, Services Requirement

- Sanitation Services Requirement: Custodial services in construction-related trailers are to be provided by the construction contractor as detailed in the DES Standard Specifications Section 01500 Series. Requests for custodial services in NIH-leased or owned trailers should be addressed by memorandum to the Chief, NIH Division of Space and Facility Management, Sanitation Services Branch. The following specific information should be addressed: scope of work or description of housekeeping services to be performed; date or time frames requested for completion of work; total square feet to be serviced with copies of floor plans (when available); location of trailer and trailer identification number; proposed number of occupants; common accounting number (CAN) to provide funding of requirement; contact person for coordination; and proposed period of performance (length of time trailer is expected to remain on site). A minimum of 60 days notice is required.
- Landscape Maintenance: Landscape maintenance around contractor-furnished trailers is to be provided by the contractor as detailed in the DES Standard Specifications, Section 01500 Series. Landscape maintenance around NIH-leased or-owned trailers will be provided by the DES Grounds Maintenance and Landscaping Section (GMLS).
- Fire Safety: Before a trailer may be occupied by a government employee, all items outlined in the DES Standard Specifications, Section 01500 Series must be incorporated and approval obtained by the NIH Division of Safety, Fire



Prevention Section.

- **Trailer Removal:** Upon conclusion or termination of a construction project, a contractor-controlled trailer must be removed from the site. All utilities must be shut off, capped, and the site restored. It is the responsibility of the contractor to follow removal procedures as detailed in the DES Standard Specifications, Section 01500 Series. The DES Project Officer will coordinate utilities shutdown procedures with the DES Maintenance Engineering Branch. Any delivery or removal of a trailer that will involve the blockage of an NIH road, parking area, or walkway requires prior clearance by the NIH Police and Fire Departments.





## G.6 Attachments

1. Site Selection Request Form
2. Process for Requesting and Assigning Space (Not included)
3. PHS Chapter 2-1-10, Definition of Major Facility Engineering Program Activities (Not included)



# SITE SELECTION REQUEST FORM

Send to: Site Coordination Team Leader  
Facilities Planning and Programming Branch  
Division of Engineering Services  
Office of Research Services  
Building 13, Room 2W48 MSC5744  
Telephone (301) 496-5037 Fax: (301) 402-0017

Date of Request \_\_\_\_\_ Site Selection Needed by: \_\_\_\_\_

(Note: A minimum of 2 weeks is required for review of this request.)

Contact: \_\_\_\_\_ Organizational Abbreviation: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

A. PROJECT DESCRIPTION

A.1. Name and purpose of project:

A.2. Location of proposed site: Please diagram below or attach a site drawing. Include any existing or proposed structures (including proposed trailers) located on the site.

A.3. Reason this proposed site is preferable for this project:



A.4. Period of time proposed site will be used for this project:  
\_\_\_\_\_ (Extensions of time or use of a site for a different project require submission of a new Site Selection Request.)

B. SITING CHECKLIST

B.1. Neighborhood impact.

Is the proposed site within 500 feet of the nearest NIH boundary?  
\_\_\_\_\_ Yes \_\_\_\_\_ No

If the answer to the above question is yes, what is the distance from boundary? \_\_\_\_\_

Do you foresee any potential impacts from this location and, if so, how will they be mitigated?

B.2. Emergency accessibility.

Will the proposed site interfere with any driveway/roadway access to a neighboring building? \_\_\_\_\_ Yes \_\_\_\_\_ No

If yes, describe below alternate access that will be created to satisfy emergency requirements.

Note: All proposed structures on the proposed site must also allow access for emergency equipment.



B.3. Traffic and Parking.

Will the proposed site increase or decrease an area serving as a roadway or parking area?

\_\_\_ Yes \_\_\_ No

If a parking area will be affected,

\_\_\_ (number to be added) how many parking spaces will be

\_\_\_ (number to be removed) affected?

\_\_\_ Permanent change \_\_\_ Temporary change (give dates below)

B.4. Trailers:

Trailer category:

\_\_\_ Construction contractor's field office trailers and (on large jobs) subcontractor trailers

\_\_\_ Ready-issue materials storage trailers

\_\_\_ Field-support trailers for A/E or CQM contractors or NIH construction project staff

\_\_\_ Office or laboratory trailers unrelated to a construction project (Note: prior approval for trailers in this category must be obtained from the Space Recommendation Board and attached to this request.)

Number, description, and size of trailer(s):

Estimated number of occupants to be stationed in the trailer(s):

\_\_\_\_\_

Does this include any NIH employees? \_\_\_\_\_ (indicate estimated number)

Length of time for location of the trailer(s) at the proposed site:

\_\_\_\_\_ Start \_\_\_\_\_ End



If one or more trailers are to be located outside the fenced or otherwise physically defined construction site, are any site modification(s) required?

\_\_\_\_\_ Yes \_\_\_\_\_ No

If yes, explain below.

Proposed minimum distance of trailer(s) to existing structures:

\_\_\_\_\_

What utility hookups will be required?

