

PROGRAM OF REQUIREMENTS (POR) OUTLINE

Division of Policy and Program Assessment
DHHS/NIH/OD/ORF

Approve:	<input checked="" type="checkbox"/>	Disapprove:	<input type="checkbox"/>
Signature:			
_____ / S /		_____ JUNE 7, 2006	
Director, ORF		Date	

PROGRAM OF REQUIREMENTS (POR) OUTLINE

THIS OUTLINE IS PROVIDED AS AN AID TO THE PROJECT OFFICER (PO) IN THE POR DEVELOPMENT PROCESS. EDIT AS NECESSARY TO TAILOR TO PROJECT SPECIFIC NEEDS.

I. Executive Summary

Provide a one (1) to two (2) page(s) summary of overall requirements. Include staffing figures(# of people), user group, gross and net assignable square meter (square foot) of facility, site location, consideration of master planning goals, feasibility study, program development study, letter of justification, alternative solution document, total project cost with breakdown by facility (i.e. land acquisition, design, construction, equipment) and other project related cost estimates such as that of special studies, special purpose equipment, activation, operational, etc. Include acquisition strategy under consideration.

II. FUNCTIONAL STATEMENT/NARRATIVE ANALYSIS – Provides a narrative of the overall program.

A. Introduction

Provide summary information on the facility, location, and function. Include the goals and objective of the Program of Requirements (POR). It may also be appropriate to include a statement on how requirements for POR were developed (i.e. process methodology) and a summary of the business case.

B. General Overview

Provides data, including information on:

B.1 Program Mission:

The missions and functions to be performed in the facility.

B.2 Background:

B.2.1 Existing Facilities: The existing facility and its utilization and relationship to other facilities within the same general area.

B.2.2 Need for the Proposed Project: State the need for the proposed facility project, including programmatic justification. Indicate whether this is expansion or replacement space and why the current facility cannot house the requirement, if applicable.

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B.3 Staffing and Organization Structure:

B.3.1 Institute/Center or Agency Management Organization Chart:

B.3.2 Staff Summary: The Staffing Summary should be presented in the form of a chart or list . The Staff summary should identify position by specific category including total number of staff on board, additional positions required, and the total number required to operate the facility.

C. Site

C.1 Proposed Construction Site:

Include map as appropriate. Community or region (cultural, transportation, or other factors which should be considered in planning the site or facility).

C.2 Site Description:

The site description should be a brief narrative delineating the boundaries of the site, size and condition, accessibility (i.e. transportation), physical features, environmental features, and the availability of utilities.

C.3 Site Constraints:

The site constraints that could influence the design of the facility should be noted such as: climate, topography, master planning goals, flood plains, orientation, context with existing structures, availability of utilities, historic preservation, (sustainable) storm water management, seismological conditions, site and/or plot/survey plans, soil borings, topography, etc. **Include any environmental contaminants, method of removal/treatment including associated costs.**

C.4 Site Potential:

Site potential that could influence the design of the facility should be noted such as: natural setting, views and vistas, topography, orientation, etc. Optimize site potential to balance security, safety and sustainability objectives. Integrate site planning features that minimize impervious surfaces and concentrated flow of storm water runoff.

C.5 Site Coordination

Demonstrate access to and around site/campus during construction. Integrate site and building access with existing campus transportation infrastructure. Integrate building stormwater characteristics with existing site stormwater management system and infrastructure in a way to minimize the rate and quantity of site stormwater. Coordinate site lighting with campus standards to meet security objectives but reduce night sky light pollution.

C.6 Climatic conditions

Demonstrate consideration of reduced heat island effect of site development, specifically addressing site paving and parking placement to reduce solar reflectance.

C.7 Energy Conservation

Demonstrate consideration of optimizing energy in the placement and siting of the building. Consideration is to be given to conservation measures and recycling, water conservation, material, environmental management, etc. to minimize energy consumption

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and to protect and conserve water. Natural, landscape, or building shading should be considered to minimize building solar loading.

D. Cumulative Cost Statement

D.1 Provide total cost and factors

E. Potential Environment Impacts

E.1 Environmental Mitigation Requirements:

Demonstrate compliance with environmental protection and pollution control.

E.2 Evaluate the use of renewable energy and evaluate new air emissions attributable to the project and provide the best value in terms of energy conservation and air emissions reductions. Include energy recovery and reclamation equipment for systems using high percentage of outdoor air.

F. Space and Occupancy Requirements:

F.1 Activity Analysis:

This section should give an overall view of the primary and secondary activities to be performed in the proposed facility as well as other considerations such as special purpose equipment requirements. This section should discuss the desired quality of life for the personnel that will occupy the facility as well as goals for performance and efficiency of the facility.

F.2 General Space Parameters:

The general space parameters should discuss and illustrate as to how the **net assignable square meter (nasm)/square feet (sf) per person** was attained for any given space.

For administrative space, the recommended net assignable square meter (nasm) is 14.86 (or 160 nasf) per person on the campus and 190 nasm (or 17.65 nasf) per person off campus; The standard is 215 nasm (or 19.97 nasf) per person.

Space Descriptions:

Program Space - A brief narrative of the space and occupancy requirements for each unique and typical space. If a space is typical, it should be discussed once. The narrative should discuss the function and use of the space.

Support Space - Minimum space requirements for facility operations and support should be addressed including but not limited to, mechanical and housekeeping space, maintenance support and waste management support space.

Other Space – Consider amenities, public facilities, employee facilities, etc.

F.3 Summary Space Schedule and Functional Relationships:

The Summary Space Schedule should be presented in the form of a chart. The typical chart should include: the name of the space, the desired net sq. m/ft. per person, the number of persons to occupy the space, the quantity of equipment and furniture that will give form to the space, the desired height of the space and remarks to discuss unique attributes of the space.

F.4 Functional Relationship Matrix:

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The Functional Relationship Matrix should indicate the priority relationships of all spaces in the facility. Several matrices based on departments or divisions may be required for every complicated facility. Bubble diagrams or other graphic may be used to express functional relationships.

F. Gross Area Allowance

The gross area should exceed the net area by a factor which provides adequate circulation and adequate mechanical and electrical space and access to equipment without encouraging an inefficient design. The net-to-gross factors should reflect the net to gross definitions by the PHS Manual.

G. Constructability Analysis

Constructability Analysis is “the optimum use of construction knowledge and experience in planning, design, procurement and field operations to achieve overall project objectives”. Examine design options and details of construction to minimize construction costs while maintaining safety, quality and schedule.

H. System Engineering Performance Objectives

System engineering performance objectives describes sequences of operation and outlines how the building is to function as whole in support of scientific mission and other authorities having jurisdiction requirements. This information serves as the basis for the building automation system architecture.

I. Post Occupancy Evaluation Criteria

Post Occupancy evaluation criteria summarizes the design’s expected facility, functional, scientific and system performance

J. Governing Regulatory Requirements

J.1 Applicable Federal Statutes and Regulations:

J.2 Applicable Department Standards, Regulations & Executive Orders:

PHS Manual; HHS Office Standards

J.3 Applicable Policies, Standards and Guidance

J.4 Applicable State & Local Statutes, Regulations, Permit & License Conditions:

J.5 Applicable Industry Standards:

ASTM, ANSI, ASHRAE, AALAC, LEED, JCAHO, MDE, Green Building Council, etc.

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III. DESIGN CRITERIA AND RECOMMENDATIONS:

Provide a design criterion that is unique and necessary to the building type. The following is a listing of criteria that may or may not be required for all building types:

A. CIVIL:

1. Geotechnical
 - a. Soil Investigation
 - b. General site description (e.g. terrain, soils type, existing structures, spoil removal, areas of hazardous waste, etc.)
 - c. Fault line locations
 - d. Seismic
 - e. Water table elevation
 - f. Paving design options
 - g. Overall site analysis
2. Master Planning Goals
3. Site Utilities
4. Site Layout
 - a. Site and/or plot/survey plans
 - b. Topography
 - c. Accessibility
 - d. Construction access
 - e. Site massing and context constraints or guidelines (i.e. how the structure will look in three dimension at the site)
- f. Access transportation parking, delivery/service, and pedestrian circulation considerations
- g. Climate, wind and sun orientation
5. Site Potential
6. Site Improvements
7. Parking & Sidewalks
 - . Paving & Surfacing
 - . Parking Requirements (placement to reduce solar reflectance)
8. Site Grading and Drainage Considerations
9. Reduced site disturbance and erosion control
10. Stormwater Retention/Management
11. Landscaping
 - . Low Impact Vegetation
 - . Trees/plantings
 - . Water efficient irrigation
 - . Paving/curbs
12. Future Site Expansion Considerations

B. ARCHITECTURAL:

1. Orientation & placement of structure to consider natural lighting views, heat loss/gain, energy conservation and optimizing energy
2. Aesthetics (Architectural Context)
3. Building Envelope
4. Interior Clearance Requirements
5. Vertical Circulation
6. Acoustic Control

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| 7. Energy Conservation | 12. Roofing (consider material use & heat island effect) |
| 8. Accessibility for the Disabled | |
| 9. Historic Preservation | 13. Floor to floor height |
| 10. Day lighting and views | 14. Color/material standards |
| 11. Indoor air quality (entryway walkoff systems and OA intake placement) | 15. Construction materials |
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C. BUILDING PROGRAMMING:

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| 1. Program Statement | 10. Loading/Unloading/Storage Facilities Requirements |
| 2. Building Summary Space List | |
| 3. Overall Adjacency Diagrams | 11. Transportation Requirements |
| 4. Stacking Diagrams | 12. Building Finishes |
| 5. Growth and Phased Development | 13. Room Data Sheets |
| 6. Circulation and Open Space Requirements | 14. Furnishings, Equipment and Built-Ins |
| 7. Functional Relationship Diagrams/Room by Room | 15. Vibration Requirements |
| 8. Activity Analysis | 16. Growth and Phased Development <ul style="list-style-type: none">a. Alteration Considerations |
| 9. Program/Support/Other Space (Amenities, public/employee facilities, etc.) | 17. Standard Operating Procedures |
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D. LANDSCAPE:

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| 1. Trees & vegetation | 4. Lawn & Planting |
| 2. Lighting | 5. Pathways |
| 3. Irrigation | 6. Open Spaces |
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E. SUSTAINABILITY:

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| 1. Environmental Protection <ul style="list-style-type: none">a. Archeologicalb. Location in EPA air quality non-compliance zonec. Environment permits in effectd. Existing Contaminatione. Ground water monitoring in placef. Location of nearest residenceg. Downstream uses of ground waterh. Existing environmental problems with the sitei. Past/present use of sitej. Noise/vibration requirementsk. Air/water discharge requirements and options evaluated |
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1. Discharge limits of sanitary and storm waters identified
 - m. Detention Requirements
 2. Pollution control
 3. Solar loading
 4. Stormwater management
 5. Utility sources with supply conditions
 - a. Potable water
 - b. Drinking water
 - c. Fire water
 - d. Cooling water
 - e. Steam
 - f. Electricity
 - g. Communications
 - h. Special requirements
 - i. Instrument & Facility Air
 - j. Gases
 - k. Sewers
 - n. Endangered species
 - o. Erosion/sediment control
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F. BUILDING INTERIOR :

1. Finishes
 2. Views and daylighting
 3. Raised floor and open space planning
 4. Lighting and Lighting Efficiency (20% below ASHRAE 90.1)
 5. Storage System w/Floor Loading Requirements
 6. Low emitting carpets, paints, furniture, base covering, etc.
 7. Rapidly renewable materials
 8. High recycled content gypsum board, ceiling systems, floor coverings
 9. Furniture and Equipment
 10. Room Numbering Scheme
 11. Signage (Interior & Exterior)
 12. External Noise Considerations
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G. STRUCTURAL

1. Live Loads
 2. Dead Loads
 3. Wind Loads
 4. Equipment Loads, Misc.
 5. Seismic Considerations
 6. Foundations
 7. Structural Framing Systems
 8. Allowable Stresses
 9. Vibration Requirements
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H. HVAC

1. HVAC criteria
2. Campus system integration/coordination
3. Indoor Temperature and Humidity Criteria
4. Energy Efficiency
 - a. 20% below ASHRAE 90.1
 - b. System selection life cycle analysis
5. Ventilation Criteria
6. Indoor Air Quality (entry walk off systems & OA intake placement)
7. Filtration
8. Relative Pressurization
9. Heating and Cooling Loads
10. Supply Air Systems
11. Return Air Systems
12. Exhaust Air Systems
13. Building Automation System
14. Commissioning

I. PLUMBING

1. Waste
2. Water and Water Efficiency
3. Gas Systems
4. Steam
5. Piping
6. Special Water and Waste Treatment Requirements

J. FIRE PREVENTION & LIFE SAFETY CONSIDERATIONS

1. Sprinkler Systems
2. Smoke Zones and Smoke Control
3. Fire control Structures
4. Fire Alarms
5. Fire Extinguishers and Cabinets
6. Fire monitors and hydrants
7. Safety and alarm requirements
8. Explosion Resistant Requirements
9. Eye Wash Stations
10. Safety Showers
11. Handling of hazardous materials
12. Egress
13. Emergency Equipment Access
14. Public address requirements
15. Fall hazard requirements
16. Gas hazard detection

K. SECURITY

1. Threat and Risk Assessment of Facility
 2. Security Classification of Building
 3. Security considerations (see illumination, access control)
 4. Fencing/Site Security
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L. ELECTRICAL

1. Power
2. Emergency Power
3. Special Power
4. Receptacles
5. Power Distribution
6. Lighting and Lighting Control
 - a. Floor level control
 - b. Occupancy sensors
 - c. Dimming systems
7. Energy Efficiency
 - a. Lighting Power Density
 - b. Premium Efficiency Motors
 - c. VFD fans and pumping
8. Grounding Requirements
9. Lightning Protection
10. Computer Based Monitoring /Control System
11. Specialty Systems (alarms, nurse calls, etc.)

M. COMMUNICATIONS/TELEPHONE & DATA

1. Network Systems
 - a. Wireless, etc.
2. Vide & Cable
3. Telecommunications
 - a. Telephone Infrastructure
 - b. Telephone Distribution
4. Computer Distribution System
5. CATV/MATV System
6. Electronic Security/Monitoring Equipment
7. Video Conferencing

N. MISCELLANEOUS

1. Pest Management
2. Security System
3. Safety
4. Operations and Maintenance
5. Monitoring System (Equipment, nurse call, paging, etc.)
6. Constructability Analysis

O. FUNCTION SPECIFIC CRITERIA

1. Bio Safety Level
2. Animal
3. Hospital
4. Isolation facilities
5. Sterile Environments
6. Hazardous Material Quantities (when applicable)
7. Decommissioning (when applicable)
8. Special Purpose Equipment
9. Other

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P. BUDGET

P.1 Facility Cost Estimate

Include contingency for each factor below and indicate the % of contingency.

1. Land Acquisition
2. Design
3. Construction
4. Equipment
5. Other Costs (Move, Commissioning, etc.)

P.2 Related Cost Estimate

Include detailed and summary; contingency should be indicated with the appropriate %.

1. Special Studies
2. Pre-project Planning
3. Activation (including moving)
4. Commissioning
5. Special Purpose Equipment
6. Decommissioning (when applicable)
7. Other

P.3 Related Cost Analysis

1. Life Cycle Cost Analysis
 2. Net Present Value Analysis
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Q. SCHEDULE

Include major milestones for each of the following:

1. Decommissioning (when applicable)
2. Design
3. Construction
4. Commissioning/Acceptance
5. Activation