

Western State Hospital
Kitchen/Commissary
Predesign Study



Washington State
Department of Social
& Health Services



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SECTION 1.0 - EXECUTIVE SUMMARY



1.0 Executive Summary

Western State Hospital (WSH), located in Lakewood, Washington, serves the mental health needs of patients in the greater western Washington region. As part of promoting mental health and recovery, the hospital operates a full service kitchen that addresses the nutritional needs of 883 patients. The quality, variety and serving efficiency of food delivered to patients is critical to the effectiveness of their therapy and the speed of their recovery. Food and serving supplies are integrated with the general Commissary and supply operations of the Hospital campus.

The present Food Service operations involve worn and inefficient facilities or temporary structures that lack lasting qualities. Delivery routes penetrate the master planned secure patient mall zone central to the campus. Food quality, critical to patient care and recovery, is hampered by inadequate equipment and distribution methods.

This study is intended to assess redevelopment options for the Kitchen and Food Service Commissary functions. It further proposes architectural concepts for consideration by the legislative fiscal committees and the Office of Financial Management. The study has revealed opportunities to also increase the efficiency of related patient oriented Commissary (Central Supply) functions including Pharmacy Supply. The following components are included in the study:

- The nature and extent of the present food service operations at Western State Hospital.
- Levels of staffing and utilization of facilities in present configurations.
- Alternative food preparation and distribution methods to improve meal quality and variety to meet JCAHO and Department of Health standards.
- Feasibility of a cook/blast chill operation to improve and streamline the food service operations of Western State Hospital.
- Feasibility of utilizing Western State Hospital food service facilities to supply food to the Special Commitment Center and other state operated facilities in Pierce County.
- Types of Commissary functions serving the campus:
 - Patient oriented Central and Pharmacy Supply.
 - Support oriented bulk Commissary.
 - Facility oriented Maintenance Warehouse.
- Configuration and co-location options for the Kitchen, including Food Service Commissary with other patient oriented commissary functions.
- Alignment of the locations of functions with the 2007 Western State Hospital Campus Master Plan.

Support oriented bulk Commissary and Facility oriented Maintenance Warehouse have been examined as possible future projects.

Three options were analyzed for the campus food preparation operation and distribution: Upgrade the status-quo (Option K1), cook/blast chill with central rethermalization (Option K2) and cook/blast chill with on-ward rethermalization (Option K3).

On-ward food service operations in the Hospital's 19 service kitchens have been evaluated and no modification to on-ward dietary staffing is proposed.

RECOMMENDATION

This study recommends the kitchen be designed to incorporate a cook/blast-chill process with central rethermalization combined with central plating (Option K2a and K2b) as it will require the least amount of on-ward infrastructure improvements, promotes higher food quality and reduces waste. Specialized patient diets are currently accommodated with a central plating process. Existing passive (non-heated) food holding carts should be replaced with active hot/cold combination holding carts to preserve food quality during transport and meal service. The building area should include space to accommodate a future transition to central plating as new ward facilities are constructed.

This study recommends implementing Option B, locating the New Kitchen and Food Service Commissary on the former site of North Hall, Building #7, along with the patient oriented Pharmacy and Central Supply functions. The Pharmacy and Central Supply could be constructed as an addition to the new Kitchen/Commissary Building as a separate project in the event funding is not available to construct all of Option B at this time. Relocating these functions away from the center of the campus will complete one more step toward realization of the master planned outdoor patient quadrangle, which will enhance patient treatment and recovery.

This study's scope includes analyzing the additional staff and building area required to provide food service to other DSHS institutions in Pierce County. WSH should continue to provide prepared food to the Child Study and Treatment Center (CSTC) and Oakridge Community Facility (OCF). WSH could share commissary functions with other institutions, however it is not recommended that the WSH central kitchen serve other state facilities, specifically Rainier School in Buckley and the Special Commitment Center on McNeil Island, with prepared or pre-plated food service. Savings in equipment, utilities and staffing at the receiving facility will be offset by increases at WSH plus transportation and storage costs at both the production and receiving sites.

The study has also revealed the value of relocating the support oriented bulk Commissary to a new building at the west entry to the campus as a future project. This will reduce large truck penetration into the center of the campus and allow Building 11, the present bulk Commissary, to serve as an improved Facility Maintenance and Storage Center consistent with the Campus Master Plan.

SECTION 2.0 - PROJECT ANALYSIS



2.1 Discussion of Operational Needs

The Department of Social and Health Services Mental Health Division operates three state hospitals, and works with 13 regional support networks, to address the mental health needs of more than 163,000 state residents with mental health challenges.

STATUTORY AUTHORITY

The legislative intent in establishing the state Mental Health Division (MHD) was to provide for:

- Chapter 10.77 RCW - Provides for the commitment of persons found incompetent to stand trial or acquitted of a crime by reason of insanity, when found to be a substantial danger to other persons or that there is a likelihood of committing acts jeopardizing public safety or security unless under control by the courts, other persons, or institutions.
- Chapter 71.05 RCW - Provides for persons suffering from mental disorders to be involuntarily committed for treatment and sets forth that procedures and services be integrated with Chapter 71.24 RCW.
- Chapter 72.23 RCW - Establishes Eastern and Western psychiatric state hospitals for the admission of voluntary patients.

MISSION

The mission of Washington State's mental health system is to ensure that people of all ages experiencing mental illness can better manage their illness, achieve their personal goals, and live, work and participate in their community. The mission of the Mental Health Division is to administer a public mental health system that promotes recovery and resiliency as well as personal and public safety.

- Committed to taking action consistent with these values.
- Value the strengths and assets of consumers and their families, and seek to include their participation in decision-making and policy setting.
- Respect and celebrate the cultural and other diverse qualities of each consumer.
- Work in partnership with allied community providers to deliver quality, individualized supports and services.
- Treat people with respect, equality, courtesy and fairness.

VISION

The MHD is committed to creating a seamless system of care that is timely, effective and efficient, that treats each person holistically and embraces each person's ability to recover and gain the skills, insight and personal and interpersonal reserves needed to be resilient as circumstances and symptoms change. The hope is that people living with a mental illness will live, work, learn, and participate fully in their communities and without fear of discrimination.

The 2009-2013 Division strategic priorities for 2009-2013 are to:

- Improve access to and quality of mental health services.
- Improve supports for recovery and resiliency of mental health consumers.
- Increase consumer and community safety through effective treatment.
- Strengthen capacity to support the overall health of individuals with mental illnesses.
- Making sound and effective community investments.

The current Kitchen and Commissary facilities at WSH are located in buildings that are at the end of their useful life for the functions currently housed in them. The Kitchen building, a former boiler heating plant, is seismically unsafe, poorly configured, and inefficient in operation. The Pharmacy and Central Supply functions lack adequate storage space and the bulk Commissary building is limited in load capacity and is inefficiently configured. Replacing these facilities will increase patient recovery through dietary choices and more efficient storage and distribution of patient pharmaceuticals and sterile medical aids.

BUILDING NUMBERS AND FUNCTIONS

As a number of the studied functions are spread about the campus, the following buildings and their functions are included in the analysis for this study:

- Building 7: North Hall. Now demolished and the proposed site for the new facility.
- Building 11: Commissary. Support oriented bulk commissary.
- Building 13: Pharmacy and Central Supply. Patient oriented pharmaceuticals and sterile medical supplies.
- Building 16: Kitchen.
- Building 32: Inventory Control. Support oriented furniture and equipment storage.
- Building 33: Maintenance Warehouse. Facility and maintenance oriented material handling and storage.

BACKGROUND AND NEED

In the 2007 legislative session, the Department of Social and Health Services submitted a request to design and construct a new Kitchen and Commissary building to remedy the deteriorated condition and inefficient configuration of the existing Kitchen and Commissary facilities at Western State Hospital.



KITCHEN

- Meals have been served to patients after extended holding periods leading to deterioration in quality, inconsistent temperatures and creating excessive food waste of approximately 20% to 30%.
- Nutrition is not provided at an optimum level for support of mental health treatment and recovery.
- Methods of preparation and handling are wasteful of energy. Labor is not efficiently utilized due to poorly configured facilities.

COMMISSARY

- Receiving, storage and dispensing of supplies and materials necessary to the operation of the hospital are hampered by the configuration, circulation, location and inflexibility of current facilities.

CAMPUS

- Treatment programs are hampered at Western State Hospital by a complicated network of secure and insecure open access zones and areas.
- Relocating the Kitchen and Commissary functions outside the central campus perimeter will allow for the establishment of a secure pedestrian oriented patient treatment mall at the center of the campus, adding significant flexibility to the treatment regimen, promoting patient health and reducing patient recovery time.
- Relocating truck deliveries outside the central campus perimeter will increase security and safety for the patients, staff and community. To develop a secure outdoor treatment mall, functions such as the Kitchen and Commissary that require frequent deliveries to and from outside destinations should be located outside of this central patient treatment mall.

The Legislature passed House Bill 1092, which included an appropriation in Section 2033 to complete a pre-design that "must assess cook/blast chill alternatives showing staffing and other operating efficiencies such as providing food for the special commitment center and other facilities located in Pierce County."

An analysis of campus Commissary functions was conducted to determine the most efficient and cost effective configuration for those components. The Kitchen and Commissary functions are dealt with in separate sections of the study due to the complexities of the food service operation and the number of different Commissary functions on the campus.

This pre-design study engaged the efforts of a team of interested parties, including state agencies; mental health care practitioners; food service experts; facilities experts, architects; and DSHS staff and management along with the administrators, staff and patients of Western State Hospital.

KITCHEN:

The objective of the campus dietary food service is to contribute to the healing of patients by insuring that they receive ample appropriate nutrition. To this end, the central kitchen must efficiently prepare and serve appetizing food to a variety of tastes and diets. At this time, food is prepared, heated and delivered to on-ward serving kitchens in both bulk and plated forms to patients via insulated holding carts. Menu choices are all based on "Heart Healthy" menu options.

Holding carts are delivered to the 19 ward serving kitchens prior to mealtimes. Newer ward kitchens in buildings 28 and 29 have power systems that were designed to serve active hot/cold holding carts in the future. At mealtime, dietary staff pull food from holding carts and serve it to the patients via a serving window. After meals are completed, dirty trays and plates are returned to the kitchen with the holding carts.



Ward serving kitchens provide storage for snacks and are used to prepare soups, toast, drinks and for limited reheating of meals. 74 Full time dietary staff, or 3.9 per ward, work directly with patients on the wards in two shifts.

In the future, when the patient treatment mall is completed, communal dining will be restored, reducing the on-ward meal distribution and consumption to the east campus area (buildings 28 and 29).

One-third of all food distributed to patients is done so outside of the typical three meal times per day due to doctor's instructions and special patient circumstances. There are 240 patients that receive unique meal choices due to allergies, medical or mental conditions. Meal choices for these patients can change on a daily basis and may be modified on short notice by medical or ward staff. These meals are plated at the kitchen and distributed in insulated holding carts in the same manner as bulk food. Patient transfers between wards contribute to the complexity of tracking unique patient nutritional needs.

The remaining general patient population receives identical meal choices from a weekly menu through bulk food distribution.

Dietary staff report that 20% to 30% of all food delivered to the wards is wasted. The food delivery system has had ongoing challenges with maintaining both food temperature and freshness. Revising the method of food preparation and delivery will reduce this waste by a minimum of 50%.

To accomplish the mission of providing healthy nutrition to the patients, the characteristics of the current and proposed food service plans are as follows:

DIETARY CAPACITY

- Maximizes acceptance among the patient population.
- Provide menu choices to patients.
- Supports special dietary production.
- Maximizes food quality in the following areas:
 - Freshness
 - Proper temperature
 - Proper texture
 - Variety of ethnic foods
 - Facilitation of healthier menus

OPERATIONAL CHARACTERISTICS

- Supports emerging mental health therapeutic models within WSH.
- Promotes labor efficiency.
- Promotes logical and safe work flow.
- Promotes security and accountability of goods.
- Eliminates car and truck traffic in central campus.
- Maximizes occupational and rehabilitative activities for patients.
- Promotes sustainability by:
 - Minimizing the use of disposables as much as possible.
 - Supporting maximum reuse and recycle of food service waste stream.

STRATEGIC POSITIONING

Provides a basis for programmatic flexibility:

- Expansion and contraction of patient and staff population.
- Addition of a patient retail food outlet or support of the existing "Our Store" patient store.
- Addition to, or replacement of, ward dining with centralized dining rooms.
- Anticipates foreseeable regulatory and dietary trends.

COMMISSARY:

There are a number of Commissary supply, storage and support functions that are necessary to the operation of Western State Hospital. Although foodstuffs are stored in the Kitchen (Building 16), kitchen disposables, such as aluminum foil, plastic wrap, disposable plates and disposable dinnerware, are stored in the bulk Commissary (Building 11) and transported to the kitchen or direct to ward serving areas as needed.

Located campus-wide, the Commissary facilities can be categorized into three main types of functions: patient oriented, supply oriented and facility oriented.

PATIENT ORIENTED

Patient oriented operations directly address and benefit patient care and healing. These include the Pharmacy, Central Supply and Medical Equipment, along with smaller support spaces throughout the campus. The types of materials received, stored and distributed include:

- Sterile medical supplies.
- Medical equipment.
- Patient medications.
- Patient oriented medical equipment including crutches and wheelchairs.





The Central Supply receives, sterilizes, stores and distributes medical equipment such as stethoscopes. The current building area serving the Pharmacy and Central Supply functions is inadequate as there is not enough space for storage.

Medical Equipment is currently stored in a variety of locations across the campus and is operated separately from the Pharmacy and Central Supply (Building 13) facility. This group handles patient related items such as wheelchairs and crutches and was not analyzed for relocation as part of this study.

SUPPORT ORIENTED

These functions, located in the Commissary (Building 11) and Inventory Control (Building 32), directly support the daily operation of the hospital.

Supplies are distributed from central warehousing facilities to small staging/storage areas located on most of the wards. The types of consumable materials and supplies handled include:

- Paper products
- Linens
- Patient clothing and shoes
- Custodial supplies
- Computer and copier supplies (toner, cartridges, etc.)
- Personal care products
- Incontinence products
- Emergency water
- Non-food related kitchen consumables such as aluminum foil, disposable dinnerware and food wrap

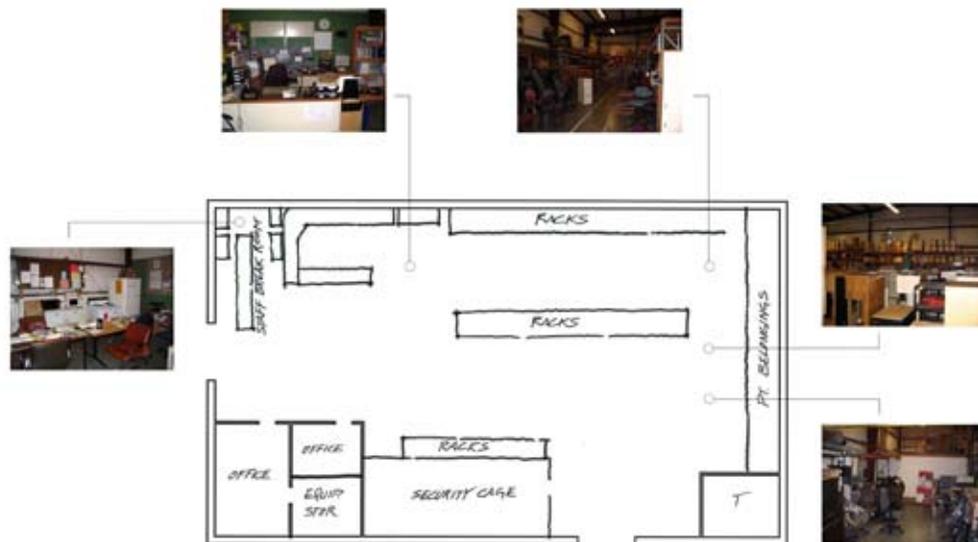


The Bulk Commissary (Building 11) in current use is inefficient due to:

- Its three story configuration requires constant material movement via elevator.
- Low ceilings prevent the use of high density pallet shelving systems.
- The floor structure will not support forklift or high density storage loads, necessitating goods be moved throughout the building with hand operated pallet jacks.
- Building floor plan is interrupted by stairs, elevator, restrooms and columns.

Inventory Control (Building 32) is inefficient due to:

- Its remote location from the Commissary Building, requiring multiple vendor delivery locations and constant movement of material between the two buildings.
- The two buildings and their functions are operated by a total of eleven FTE's. Combining these two functions would:
 - Reduce the required operational FTE's from eleven to eight.
 - Consolidate multiple vendor delivery locations on the campus into one.
 - Reduce vendor large truck traffic in the center of the campus by locating the new bulk Commissary near the campus edge.
 - Reduce the necessary building square foot allowance by implementing a forklift and pallet rack storage system.
 - Better secure items subject to theft such as computer printer cartridges.



Commissary functions related to food service would be located at the new Kitchen, reducing the traffic associated with moving material between the Commissary and Kitchen.

FACILITY ORIENTED

Facility and maintenance storage is located in the Maintenance Warehouse (Building 33) adjacent to the shops buildings.

The type of materials and supplies handled include:

- Building repair components.
- Plumbing repair components.
- HVAC repair components.
- Tools and related equipment.
- Vehicular repair components.



Materials stored for facility maintenance require shelving and storage systems capable of categorizing specific parts and pieces. Since this type of storage is not high density, a portion of Building 11 could easily serve this function with little or no modification. In the short-term, these storage needs are adequately served in their present location.

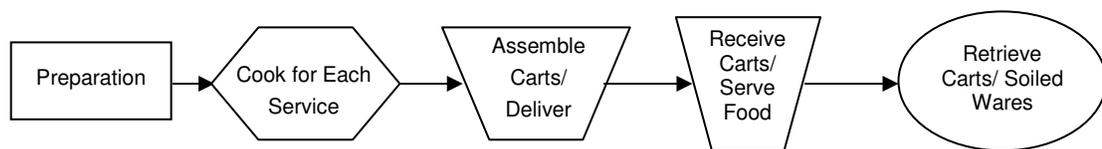
2.2 Discussion of Options

The alternatives to the operation and delivery of food service and Commissary functions are somewhat separate in function and operation. Therefore, the two are analyzed separately throughout this section to maintain clarity.

KITCHEN:

Three options were analyzed for the food service operation and distribution on the campus. The opportunities for providing food service production to satellite facilities is summarized in Section 3.6 - Offsite Satellite Outsourcing.

OPTION K1: UPGRADE STATUS QUO – COOK, TRANSPORT AND SERVE:



STRENGTHS

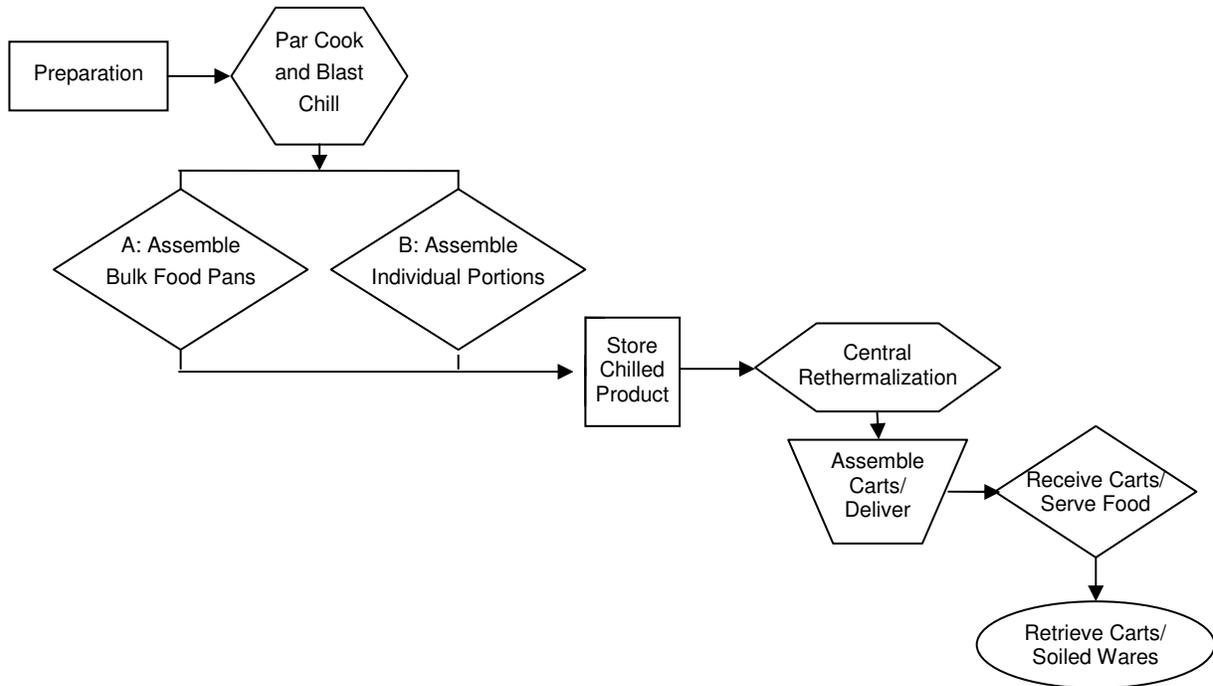
- Familiar, easy for staff to transition, minimal training requirements.
- Relatively easy to increase production capacity and flexibility through equipment selection and process flow with new Kitchen.

WEAKNESSES

- Production remains directly linked to meal times.
- Does not address food quality or waste issues.
- Does not provide operational flexibility to support other DSHS institutions.
- Does not anticipate emerging trends.
- Does not capitalize on new technologies.

OPTION K2: COOK, BLAST CHILL, RETHERMALIZE CENTRALLY, TRANSPORT AND SERVE:

- K2a: Bulk
- K2b: Portioned/Plated



STRENGTHS

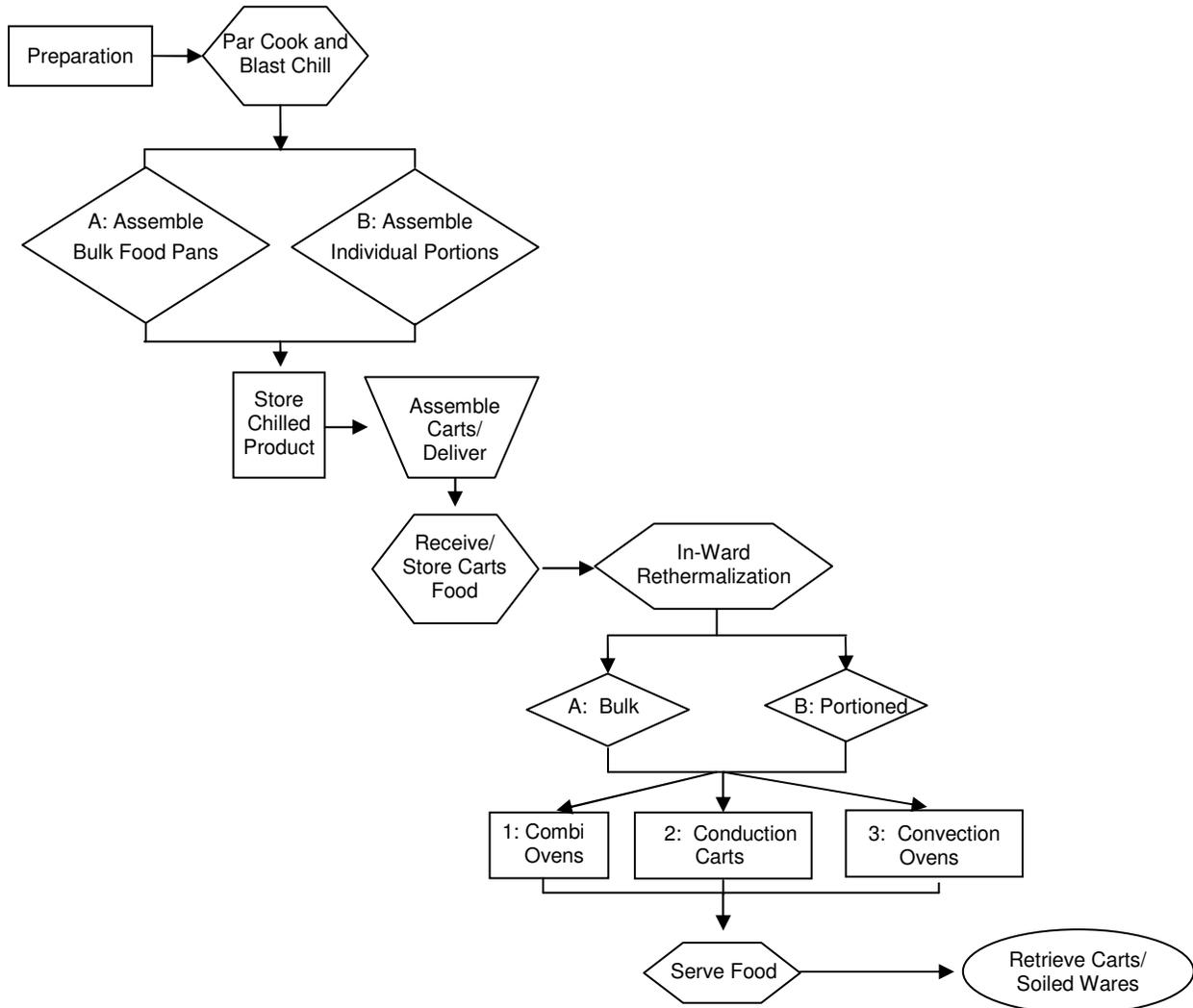
- Production can be independent of meal times.
- Greater operational flexibility.
- Potential labor efficiencies for bulk distribution.
- Blast chill and rethermalization are cost effective and simple to use.
- Will not require substantial operational revisions or training.
- Better HACCP (Hazard Analysis And Control Point) compliance and food safety. The HACCP-Based Plan for Ensuring Food Safety in Retail Establishments was established as a systematic approach to food safety by the US Food and Drug Administration.
- Maintains dietary control of food preparation and distribution.
- Uses some of the best current technology.

WEAKNESSES

- Does not directly address food quality issues. Replacing the existing insulated carts with active hot/cold holding carts would address this issue.

OPTION K3: COOK, BLAST CHILL, TRANSPORT, RETHERMALIZE ON-WARD AND SERVE:

- K3a: Bulk
- K3b: Portioned/Plated
- Combi-Ovens
- Conduction Carts
- Convection Carts
- Ventless Rethermalizing Steamer



STRENGTHS

- Maximizes potential and capacity for providing high quality food.
- Maximizes potential to reduce food waste.
- Uses current state of the art health care food service technology.

WEAKNESSES

- Rethermalization is out of the control of dieticians. Decentralizes control of goods and services.
- Requires operational revision and additional training.
- Requires significant additional investment in equipment and ward kitchens.
- Requires full dietary assistance staff in wards.

BULK VS. PLATED

- The current operation uses a combination of bulk and plated distribution.
- Plate service requires additional equipment, space and labor.
- Plate service allows for a wider variety of patient meal choices.
- Centralized rethermalization negates any food waste efficiency to be gained through plating.
- Plating would reduce the amount of disposables currently used, but would require additional dishwashing staff.

ON-WARD RETHERMALIZATION OPTIONS

Combination Steamer/Oven:

- Most flexible and versatile.
- Supports bulk and plated programs equally well.
- Most complicated to operate.
- Supports small batch preparation.

Conduction Rethermalization Carts:

- Supports plated program; not well suited to bulk program.
- Capable of plate by plate differentiation for time and reheat cycle.
- Does not produce highest quality food.

Convection Rethermalization Carts:

- Best suited for plated service, capable of supporting bulk program.
- Provides cold and hot holding in same cart cold storage.
- Cannot support small batch preparation.
- Locks WSH into a sole source purveyor for repairs and replacement.

Ventless Steamer:

- Supports bulk and plated programs equally well.
- Less versatile than combi-steamers but requires no ventilation infrastructure.
- Lowest cost option.

MEAL PRODUCTION AND SERVING OPTIONS SCORING CRITERIA

Each scenario was scored using the following analysis matrix. Each attribute is assigned a number ranging from 0 to 3, based on the ability to meet the requirements of that attribute. For instance, the "Promotes Food Quality: Variety" attribute of "0" represents a "limited variety of cooking techniques" while a score of "3" represents the ability to provide "a broad variety of culinary techniques".

Attribute	0	1	2	3
Promotes Food Quality: Variety	Enables a limited variety of cooking techniques	Enables most basic culinary techniques	Enables a good selection of basic and some specialized techniques	Enables a broad variety of culinary techniques
Promotes Food Quality: Temperature	Has neutral or negative impact on food temperature	Has some positive impact on food temperature, under certain circumstances	Generally has a positive impact on food temperatures	Consistently has positive impact on food temperatures
Promotes Food Quality: Freshness	Does not significantly impact freshness	Provides some positive impact on freshness under certain circumstances	Promotes freshness	Has a significant positive impact on food freshness
Facilitates Provision of Multi Choice Menu	Does not significantly aid production of multi-choice menu	Able to support production of some menu choice, with restrictions	Supports production of menu choice	Significantly eases production of menus based on choice
Sustainability	No change from status quo	Some positive impact on use of disposables	Significant reduction in use of disposables	Minimizes or eliminates use of disposables
Able to Support Operational and Programmatic Objectives	No change from status quo	Provides limited support of new capabilities	Provides support of new capabilities in many areas currently being considered	Provides extensive support of new capabilities

ASSESSMENT SUMMARY OF ALTERNATIVE MEAL PRODUCTION AND SERVING OPTIONS

The top portion of the following Assessment Summary table uses the attribute scoring noted on the previous page to assign scoring criteria to each option for meal preparation, distribution and serving. Note that the bottom portion of the table includes the following additional criteria:

- Space requirements
- Main kitchen equipment budget + on-site equipment budget
- Labor efficiency as measured by projected production FTE's

	Status Quo	Bulk	Plated	Combi Oven, Bulk	Combi Oven, Plated	Conduction Plated	Convection Bulk	Convection Plated	Combined Technology Solution
Promotes Food Quality: Variety	3	3	3	3	3	2	2	3	3
Promotes Food Quality: Temperature	0	0	0	3	3	3	3	3	3
Promotes Food Quality: Freshness	0	0	0	2	2	2	3	3	3
Facilitates Provision of Multi Choice Menu	1	1	1	1	3	3	1	2	2
Sustainability Potential	0	0	3	0	3	3	0	3	3
Supports Operational, Programmatic Objectives	0	0	0	2	1	1	2	1	1.5
Aggregate Score	4	4	7	11	15	14	11	15	15.5
Space Requirements, NSF	8,849	9,175	9,725	10,102	10,652	10,652	10,102	10,652	10,652
Labor Efficiency, Main Kitchen Production FTE	28.6	25.4	31.7	19.1	25.4	25.4	19.1	25.4	25.4
Estimated Equipment Budget, Main Kitchen	\$1,259,530	\$1,349,180	\$1,478,980	\$1,498,225	\$1,628,025	\$1,628,025	\$1,498,225	\$1,628,025	\$1,628,025
Estimated Equipment Budget, Single Solution	\$ -	\$ -	\$ -	\$901,000	\$901,000	\$3,000,000	\$2,160,000	\$3,000,000	\$1,557,000 to \$1,977,000
Total Estimated Equipment Budget	\$1,259,530	\$1,349,180	\$1,478,980	\$2,399,225	\$2,529,025	\$4,628,025	\$3,658,225	\$4,628,025	\$3,185,025 to \$3,605,025

COMMISSARY:

Two configuration options were analyzed in this study for co-locating Commissary functions with the Kitchen. Note that Medical Equipment and facility oriented (Maintenance Warehouse) operations were not analyzed as their operations are not located in the proposed patient mall area and were not included in the original funding request to the Legislature.

OPTION A

Relocate patient oriented Pharmacy and Central Supply (Building 13) functions and supply oriented bulk Commissary (Building 11) and Inventory Control (Building 32) functions with the Kitchen at a new facility on the former site of North Hall (Building 7).

STRENGTHS

- All delivery and truck traffic goes to a single facility.
- All on-site distribution occurs or originates at a single facility.
- FTE's at the supply oriented Commissary could be reduced by a minimum of three positions. However, with the increasing number of medications available, reductions in patient oriented FTE's would most likely not be possible.
- Smaller packages can be distributed through a future underground tunnel or conveyor system (potentially in conjunction with food carts).
- New facility can be designed for the most efficient storage system, reducing required storage space for the supply oriented functions.
- Multiple storage functions could be consolidated.
- Building 13 can be converted to patient support use per the Campus Master Plan.
- Building 11 can be converted to maintenance offices and parts storage per the Campus Master Plan.

WEAKNESSES

- Most truck and delivery traffic is concentrated near the center of the campus. Vendor deliveries required to enter farther into site.
- Food deliveries need to be separated from other types of products, especially chemicals.
- Pharmacy function requires enhanced security and separation from other functions.
- Central supply function requires a separated sanitary area.

OPTION B

Relocate patient oriented Pharmacy and Central Supply (Building 13) functions with the Kitchen to a new facility on the former North Hall (Building 7) site. Relocate support oriented bulk Commissary functions (Building 11) and Inventory Control (Building 32) to a location at the west end of campus as a future project to be funded as part of a future Legislative appropriation.

- This Option assumes that a future request for funding will be submitted to relocate the bulk Commissary functions.
- Relocation of campus facility and maintenance support functions from the Maintenance Warehouse (Building 33) to a new location or building were not analyzed as part of this study for the following reasons:
- This storage needs to be kept in proximity to the shops. The existing and Building 11 locations are both adjacent to the existing shops.
- There is constant vehicle activity in and out of this area.
- Distribution of campus facility and maintenance support materials campus-wide is not required as maintenance personnel take the necessary components directly to locations requiring repair.

STRENGTHS

- The patient oriented Central Supply and Pharmacy functions do not have ongoing large truck deliveries.
- A significant portion of on-site distribution is done on foot, rather than in a vehicle. The proposed site is centrally located and reduces the distance required to get to delivery points.
- Smaller packages can be distributed through a future underground tunnel or conveyor system (potentially in conjunction with food carts).
- The new facility can be designed for the most efficient use of space and storage. As a future project, Building 13 can then be converted to patient support use as part of the patient treatment mall as described in the Campus Master Plan.
- Although FTE's serving the Pharmacy and Central Supply will stay at current levels, the future bulk Commissary would allow for a minimum reduction of three FTE's from current staffing levels.
- Large vendor trucks not required to enter further into the campus.

WEAKNESSES

- Delivery traffic has to be separated from kitchen deliveries.
- The Pharmacy function requires enhanced security and separation from other functions.
- The Central Supply function requires a separated sanitary work area.



2.3 Discussion of Selected Option

The 2007 long range Campus Master Plan calls for the creation of a patient oriented central quadrangle or outdoor mall at the campus center. To accomplish the mission of patient recovery, vehicle intensive activities will need to be relocated out of the proposed quadrangle area. To further enhance patient health, changes to the food service and distribution need to be implemented.

KITCHEN:

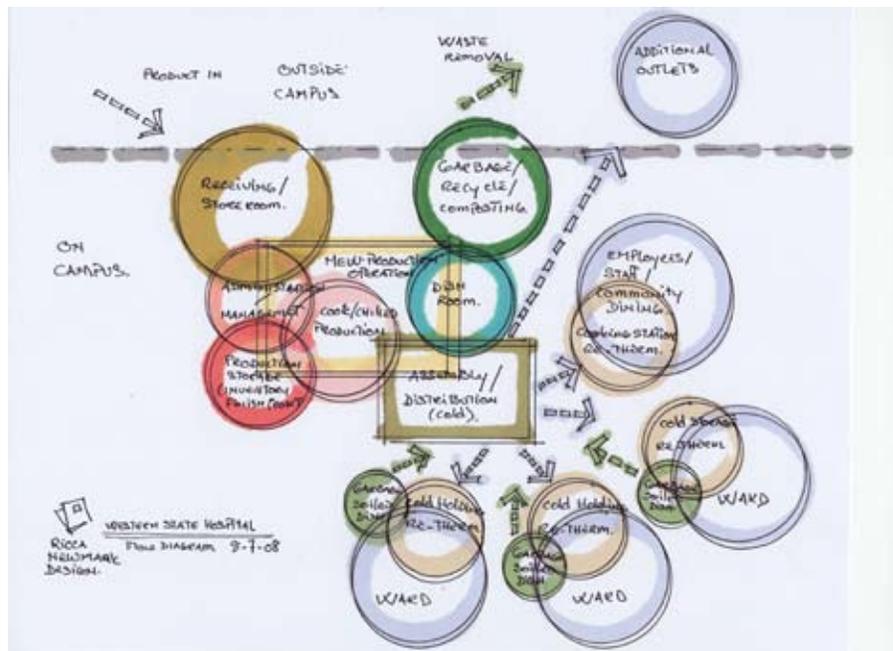
Central Rethermalization Processes:

The unique patient needs at a mental health hospital necessitate a combination of bulk and plated distribution to accommodate variety and unique nutritional needs (Options K2a and K2b). This allows for variety in patient nutritional choices while maintaining dietary control of food throughout the preparation and distribution process. Food can be pre-prepared in advance of meals (hours or days) and stored until rethermalized and distributed to the wards.

Implementing a combination bulk/plated distribution with cook/blast chill with centralized rethermalization will result in a net reduction of 1.1 FTE and a drop in waste of 50%. The reduction in waste results in an annual savings of \$94,074 (based on annual food cost of \$940,737 x 20% waste x 50% reduction) per year.

Replacing the insulated holding carts currently in use with active (powered) hot/cold holding carts will resolve food quality issues that have been associated with the time required to transport food to the wards. The existing carts are not powered and do not hold food at temperatures required to maintain food quality.

The following illustration shows the relationships between the various dietary functions that will be addressed during the design phases of the project:



COMMISSARY:

Option B, which relocates patient oriented Pharmacy and Central Supply functions from Building 13 to the new facility, will advance the Campus Master Plan by significantly reducing vehicular traffic in patient occupied outdoor areas. Co-locating these functions with the central kitchen will allow for future coordinated distribution to both central and east campus areas via above or below grade distribution corridors.

Option B reduces the required facility size on the former site of North Hall (Building 7). Patient oriented operations are more frequent and more in character (medical, sterile, etc.) with the food service operations than the support-oriented bulk Commissary operations (greater bulk, less frequent servicing) currently located in Buildings 11 and 32. Option C2 co-locates only the patient oriented Pharmacy and Central Supply operations with the kitchen function.

Critical to addressing the relocation of current bulk Commissary functions from the central campus area is the relocation of support oriented operations. Locating these truck and delivery intensive activities nearer a campus entry point minimizes the number of outside delivery vehicles penetrating into the campus center. Option B recommends this issue be addressed in a future project that constructs a new bulk Commissary near the west entrance to the campus. The future building would be a warehouse structure that could employ less expensive building materials and assembly techniques. A pre-engineered metal building system would be appropriate to house these bulk operations.

2.4 Identification of Issues

In September 2006, the Department of Social and Health Services submitted its request for a new kitchen and Commissary building. As part of that request, several issues were identified.

- The Commissary receives and stores most goods for the kitchen. Since the time of the submittal of the C-2 Capital Project Request, a majority of kitchen related storage has been relocated to the current kitchen facility, increasing delivery traffic in an area frequently used by patients, creating additional patient safety concerns.
- There are three types of Commissary functions on the campus. Relocating the patient oriented Pharmacy and Central Supply functions from Building 13 in the central core to the new facility makes way for the development of the proposed patient quadrangle.
- As part of the planning for the facility, campus-wide access (locks) and security need to be analyzed. For instance, Commissary storage areas in the wards need to be secured.
- Consideration of a campus-wide asset and inventory control system should be included in the project. This will allow the Commissary and Kitchen functions to streamline ordering of product, and potentially reduce the amount of product physically stored or staged on the campus (just-in-time inventory).
- Construction of a bulk Commissary facility at the west end of the campus to house the bulk Commissary (Building 11) and Inventory Control (Building 32) needs to be incorporated into a future request for funding.

DISPOSABLE VS. REUSABLE DINNERWARE

Since each ward typically handles 30-70 servings per meal, storage for reusable dinnerware or trays would not be a problem. Trays and associated reusable dinnerware can be cleaned and stored at each ward with plated meal trays stored in the kitchen.

In order for the process to be efficient, there will need to be minor equipment purchases for bussing the dishes at each ward. With the price of disposables increasing at a steep rate, switching to trays would result in an annual savings of approximately \$192,827 (reduction of 75% from current use levels).

SPACE DEMAND

Space Demands Impacts:

- Switching to trays will have no impact on the space program if the trays can be stored and washed in the wards.
- If the trays cannot be stored and washed in the wards, there will be an increase of approximately 242 SF in both the staging area and dishwashing area of the main kitchen to accommodate the daily traffic of trays to and from the wards. This would account for an additional \$117,370 in construction and equipment costs and is included in the area model and project budget estimates.

Labor Impacts:

-
- If the trays can be stored and sanitized in the wards, there should be no net impact to labor in the kitchen and increased productivity in the wards could avoid any increase in labor there.

Operating Cost Impacts:

- There will be a relatively short return on investment for the switch based on the continuing cost of disposables vs. the negligible cost of water and chemicals for sanitizing.
- Disposable silverware is used on wards due to therapeutic safety concerns. This would seem to indicate a continued use of disposable silverware. There are some biodegradable options available, but they are relatively expensive and, because they are based on either corn or potatoes, likely to become more expensive.
- Going to trays would reduce the total volume of garbage, which would reduce the disposal costs of the food service operation.

Environmental Impacts:

- Past studies have indicated no net difference in environmental impact between disposables and reusable plate ware. Additional research into the details of those studies would need to be conducted to address this issue in an authoritative manner. The parameters for studying this type of question have been evolving rapidly over the past several years and it is not clear that those studies remain valid.
- There is a net reduction in landfill by going with trays. This could also be met by instituting a composting program, which would have a similar economic and waste volume impact.
- There is accumulating savings in the carbon impact by eliminating ongoing production and weekly deliveries of disposables. This energy savings is offset to some degree by the energy costs associated with washing and sanitizing dishes. If the trays need to be delivered and picked up with each meal, it will add one truck route per delivery, which will further erode the net gain in carbon emissions.
- There would be an increase in wastewater, water usage and chemical costs associated with additional tray use over current levels.

2.5 Prior Planning

KITCHEN:

The existing kitchen building was originally constructed in the early 1900's as a boiler plant. Remodeled over the years, the existing building is now classified in "fair" condition as reported in the 2006 update of the Facilities Condition Assessment and is in need of at least \$2.6 million in repair and seismic work.

The building is not seismically reinforced, is poorly configured and would be difficult to convert or remodel to accommodate modern food service facilities. Existing electrical and mechanical systems are at the end of their useful life.



COMMISSARY:

The needs of the patient oriented Central Supply and Pharmacy operations cannot be accommodated in the existing Building 13 due to space and layout constraints.

As this building is located in the future patient quadrangle, relocating these two functions is necessary. The increase in available patient medications over the recent past has increased the need to efficiently procure, store and distribute these medicines.

Building 11 is inefficiently laid out and would better serve as a maintenance office and parts storage facility. The wood frame structure cannot support high density storage or forklifts, requiring the transfer of goods with hand-operated walk-behind single stacking pallet jacks.

This hand transfer of goods requires almost 35% more FTE's than a typical warehousing facility. Relocating the support oriented bulk Commissary functions to a new facility will

allow for the design to accommodate more efficient storage methods, the movement of goods via forklift and a reduction in the required number of FTE's by a minimum of three.



2.6 Stakeholders

The largest stakeholder group in the project is the patients themselves. By building the new kitchen, patient health and recovery will be greatly enhanced. Over 50 patients were interviewed as part of the analysis of the existing operation. The other involved parties include:

- Department of Social and Health Services DSHS/GA Project Management Team
- The Washington State Office of Financial Management
- Western State Hospital Chief Operating Officer
- Western State Hospital Chief Financial Officer
- Western State Hospital Facilities Department
- Western State Hospital Kitchen and Dietary Staff
- Western State Hospital Commissary Staff
- Western State Hospital Central Supply Staff
- Western State Hospital Pharmacy Staff
- Western State Hospital Maintenance Staff
- City of Lakewood Building Department
- City of Lakewood Fire Marshal
- Tacoma Public Utility District (Electrical Permits)
- Tacoma/Pierce County Department of Health
- Washington State Department of Health
- Washington State Department of Archeology and Historic Preservation
- Fort Steilacoom Historical Society

As the 100,000 square foot North Hall (Building 7) was severely damaged and condemned as a result of the 2001 Nisqually earthquake and recently removed from the proposed kitchen/Commissary site, it is not anticipated that archeological issues will arise. Nevertheless, the Washington State Department of Archeology and Historical Preservation will be included as a stakeholder in all phases of the design.

2.7 Project Description

Note that this section is not indicated on the OFM Pre-Design Checklist, but is detailed in the OFM Pre-Design Manual.

WHAT IS THE PROPOSED PROJECT?

This project will: construct a new Kitchen and Commissary at Western State Hospital, demolish the existing kitchen, and remodel the Dining Building for patient activities. Consistent with the Master Plan, this project will also be one additional step in developing the central core of the hospital to create a central campus quadrangle focused on patient services but separate from vehicular traffic and campus support services.

WHAT IS THE BUSINESS PROBLEM DRIVING THIS REQUEST?

The Master Plan for Western State Hospital calls for the development of a central campus quadrangle focused on patient activities and services but separate from vehicular traffic and campus support services. The existing Kitchen/Dining Building operates in the middle of this proposed quadrangle.

The central campus quadrangle should enable the hospital to implement a treatment plan based on a program that included a secure, spacious, vehicle-free hospital quadrangle. This program would be available to most civilly committed patients, not only those that have grounds privileges. This quadrangle needs to be enclosed for community, patient, and staff safety; landscaped to feature therapeutic, recreational, and social opportunities; provide a sense of place; and allow internal movement within a secure perimeter.

When the quadrangle is complete the majority of civilly committed patients will be able to have grounds privileges. Overall, this plan will promote better treatment and more treatment options. This will allow patients to spend more time away from confining wards. This results in shorter, more effective and less costly treatment, reduces future census pressure for additional wards and the avoidance of future capital costs to develop additional wards.

The pre-design and design effort for this project must be coordinated with that of the Laundry Building, project 2006-2-325. Both facilities will be located in the same service zone and the designs should be coordinated to maximize efficiencies in service routes, utilities, loading dock functions, waste handling, etc.

AGENCY NAME

Department of Social and Health Services

AGENCY CODE

300

PROJECT NUMBER

08-1-319

PROJECT TITLE

Western State Hospital; New Kitchen and Commissary Building

AGENCY CONTACT

Mr. Richard Christian, RA, LEED AP

Lands and Buildings Division

DSHS/GA Team

Office of Capital Programs

PO Box 45848

Olympia, WA 98504-5848

MISSION

To promote recovery and well-being in partnership with the people served.

GOALS

Improve patient food quality and variety, reduce energy use, reduce waste, reduce FTE's, remove obstacle to development of secure outdoor patient quadrangle, increase efficiency.

ADMINISTRATION

The existing kitchen does not meet current JCAHO and Department of Health standards, jeopardizing federal funding support of the hospital operations. The existing Commissary is located in an inefficient three story building that cannot accommodate high density storage and forklifts.

Co-locating these functions in a new facility will further the hospital's purpose of patient treatment and recovery through the development of a secure outdoor patient treatment quadrangle. Providing outdoor treatment space will allow patients to spend more time away from confining wards, resulting in shorter, more effective and less costly treatment.

FACILITY

The new building will increase the efficiency of the dietary services operation through a modernized food preparation and distribution operation. Commissary operations will be designed to accommodate high density pallet rack warehousing that can be accessed with forklifts, reducing the FTE's necessary for an efficient operation.

EXISTING FACILITIES

The existing kitchen area in Building 16 will be demolished, leaving the existing west portion of the building to be converted to patient use. The Pharmacy and Central Supply areas in Building 13 will be converted to patient use.

PREVIOUS ACTION

This project is in the current long range Master Plan, as well as the previous Master Plan developed in 1996.

The proposed location of the new facility was prepared through the removal of the earthquake damaged North Hall (Building 7) as part of project number 2002-406, which was completed in 2004.

LEGISLATIVE OR EXECUTIVE INTENT

Design and construct a new kitchen and Commissary building to remedy the deteriorated condition and inefficient configuration of the existing Kitchen and Commissary facilities at Western State Hospital. Assess cook/blast chill alternatives showing staffing levels and other operating efficiencies such as providing food for the Special Commitment Center and other facilities located in Pierce County.

2.8 Implementation Approach

ROLES AND RESPONSIBILITIES

DSHS will present the recommendations of the Pre-Design Study to the Office of Financial Management (OFM) and the Legislature for approval and funding. Based on the level of funding provided, the scope and phasing of the project will be developed by the GA/DSHS team in consultation with the A/E Design Team consultants.

Western State Hospital will guide the Design Team in the refinement of the design for the project through the normal steps of Schematic Design and Design Development. With the Design Development package an estimate of Probable Construction Cost will be prepared and submitted to DSHS for final approval and appropriation of funds by the Legislature. With a budget set by that method the final contract documents will be completed and submitted to the building community for bids or proposals according to the delivery method selected.

Western State Hospital will review the Construction Contract Documents to verify that the final project meets the needs of their programs and is consistent with the directions given to the Design Team during the course of design.

DSHS will verify through review of the final Contract Documents that the policies and procedures currently in effect for construction projects under GA/DSHS administration are followed in the project control and building standards outlined for the builders of the project.

The Design Team will verify that the project will meet local codes and secure necessary permits through early, ongoing and close communication with local jurisdictions such as the City of Lakewood, Pierce County, State Fire Marshal, Department of Labor and Industries and Department of Ecology. The Washington State Department of Archeology and Historical Preservation will be included in all aspects of the design of the project to verify there are no potential impacts to the historical nature of the campus and to review for potential disturbance to archeological artifacts.

The Design Team will submit the project for LEED certification and continue the registration and documentation process throughout the design and construction phases of the project.

Staffing of the further stages of the project will require participation of the GA/DSHS Project Manager, Food Service administrative staff, Facilities Maintenance, Commissary, Pharmacy and Central Supply supervisory staff of Western State Hospital. The roles of these internal staff will be to oversee and participate in the decisions that will comprise the design and specifications to be implemented. They will provide an understanding of the operational impacts of the options presented by the Design Team along with the financial implications of operational choices. Facilities maintenance staff will lend insights into the upkeep and services aspects of design choices.

CO-LOCATION IMPLICATIONS:

The Central Kitchen, Pharmacy and Central Supply functions have common and similar needs with regard to the receiving and materials handling for deliveries that originate off campus. Dry goods in particular are received from similar vehicles and in similar quantities such that the loading dock and forklift equipment functions could easily be shared in the initial receiving process. Flexibility is provided to the Food Service, Pharmacy and Central Supply by utilizing the same cross campus route, docking facilities and dry waste/recycling programs for packaging. Storage functions can draw upon a common area properly segregated and secure but with an adjustable demarcation to allow for varying space needs.

2.9 Project Management

GA/DSHS TEAM PROJECT STAFFING:

This project will be managed by staff within DSHS with oversight and guidance by the stakeholders from Western State Hospital's dietary, treatment, food service, commissary, pharmacy and central supply, facilities and maintenance departments. The DSHS Project Manager will be actively involved and take a lead role in final decisions for the project. Western State Hospital plant and operations staff will provide additional consultative support in partnership with other agencies and stakeholders, including the areas of historic preservation and protection of cultural resources, barrier-free design, sustainable building practices, and maintenance and operations.

Critical to the success of these projects is the involvement of the end users of the proposed facility. Membership should include representatives from dietary services, commissary, pharmacy and central supply.

The GA/DSHS Project Manager (PM) is primarily responsible for writing and managing the design and construction contracts. This person will organize and conduct the selection of the architecture/engineering consultant, and contractor if a GC/CM process is implemented. The PM will follow through from design to construction to make sure that scope, schedule and budget is maintained. The PM will report to the Project Director. This person will be responsible for maintaining and documenting LEED progress and assuring systems integration. Once construction commences, the PM will prepare and execute the construction contract.

METHODS OF DELIVERY

Two alternative public works project delivery methods are now allowed in addition to traditional Design/Bid/Build; General Contractor/Construction Manager (GC/CM), allowed by law for projects over \$10 million, and conventional Design/Build. Many recent State projects have implemented the alternatives. Any of these three delivery methods may be pursued on the Western State Hospital Kitchen/Commissary Project.

DESIGN – BID – BUILD

In this familiar approach to the construction of a project, the owner selects an architect/engineer design team to help define the project, develop the design and bid documents and administer the construction process. The construction contract is then awarded to the lowest responsible bidder.

Strengths:

- Best method to insure competitive pricing.
- Potential for high degree of control and involvement by the owner.
- Design Team can insure thorough implementation of their design.
- Most familiar process to all potential participants in bidding and construction.
- Best opportunity for high quality design.

Weaknesses:

- Segments design, construction and operation.
- Reduces collaboration.
- Linear process increases duration.
- Prone to disputes and creates opportunities for risk avoidance by the designers and builders.

GENERAL CONTRACTOR/CONSTRUCTION MANAGER

The GC/CM is selected by qualifications and by cost of administrative role at the beginning of the design process. The A/E team and GC/CM work together throughout the design process. The GC/CM role during design is to monitor, estimate costs and make suggestions relating to budget, constructability, and inter-discipline coordination. The A/E team maintains full responsibility for the design. The GC/CM will be expected to guarantee the construction cost during the design phase. The GC/CM manages the bid process through competitive bid packages to subcontractors. Although the GC/CM will accept some risk in the construction phase, the Owner often shares the burden of unforeseen market forces such as accelerated escalation of costs.

Strengths:

- A more collaborative design and construction team is created.
- The GC/CM is selected based primarily on qualifications and then on price, thus ensuring that the contractor can manage the complexity of the project.
- Schedule can be accelerated.
- GC/CM shares a limited amount of risk by guaranteeing cost.
- Errors and omissions in the drawings are reduced.
- Major subcontractors (mechanical and electrical) may be pre-qualified.

Weaknesses:

- There is a premium paid for preconstruction services.
- Sub-contracting community has concerns about GC/CM unfairly burdening the subcontractors.
- All subcontracts must be competitively bid and awarded to the lowest responsive bidder.
- Willingness of GC/CM to guarantee price in volatile bidding environment will favor setting MACC later in the design process (90-100% CD)
- GC/CM is often the most expensive delivery method.
- Limited to projects that exceed \$10 million.

DESIGN/BUILD

The design-build selection process is two-tiered. The design-build team, consisting of architects,

engineers and contractors, respond to a Request for Qualifications prepared by the owner. A panel of judges will evaluate the RFQs and develop a short list of candidates to respond to a request for proposals. The RFP is a performance specification outlining in detail the owner's expectations for the project. The panel selects the contractor/A/E team based on the best proposal, qualifications and price. A contract is negotiated with the contractor for both the design and construction of the selected proposed design. The contractor holds the contract with the architect. RCW 39.10 requires that an honorarium be paid to the non-successful respondents. This process is limited to projects over \$10 million that do not require a large degree of owner input.

Strengths:

- There is only one point of accountability for the owner to manage.
- The construction cost is guaranteed at the award of the contract.
- The majority of owner decisions are made prior to the contract award.
- The contractor carries the risk of the project.

Weaknesses:

- The RFP must be clearly written to include all owner expectations.
- Design/build approach reduces owner control over design details. Owner's rejection of the design details may entail change orders and delay claims.
- There is a high cost to design-build firms to compete, which may limit competition.
- The design team works for the contractor, not the owner.

RECOMMENDATION

The nature of this project indicates that many participants in the design from the Owner's side will create a complex design interaction. A rigorous design control approach should be taken to manage this project. With an estimated maximum allowable construction cost (MACC) of \$12,639,000, any of the three major delivery options can be used. However, with the current escalation in materials costs, conventional design – bid – build would be the most advantageous delivery method as bid costs would be locked in with a single general construction bid. With the expectation that the project may be undertaken during a slowing economy, competition in the construction community may provide more aggressive pricing than has been experienced over the last several years.

By this method the owner and design team will best retain the latitude to represent the Owner's interests throughout the project delivery process.

Many of the advantages of alternative delivery methods can be provided through Value Engineering and Constructability reviews provided by carefully chosen third parties with construction expertise.

2.10 Schedule

The legislature funded the pre-design through building permit phases of this project in the 2007-2009 biennium. Assuming construction would be funded in the 2009 biennium, the proposed schedule is:

Pre-Design:	October – April 2008
Pre-Design WSH draft review:	May - June 2008
Pre-Design Revisions:	July 2008
Pre-Design Second Draft Review:	August - October 2008
Pre-Design Revisions:	November 2008
OFM Legislature Fiscal Review and Approval:	December 2008 - January 2009
Schematic Design:	January - February 2009
Schematic Design Estimate:	February 2009
Schematic Design Review and Approval:	March 2009
Design Development:	March - May 2009
Value Engineering:	April 2009
Design Development Estimate:	May 2009
Design Development Review and Approval:	May 2009
Permit Documents:	May - July 2009
Estimate to OFM:	May 2009
Legislature Construction Funding Appropriation:	June 2009
Submit Permits:	July 2009
Complete Contract Documents:	July - August 2009
Constructability Review:	August 2009
Obtain Building Permits:	September 2009
Issue for Bid:	September 2009
Open Bids:	October 2009
Construction:	October 2009 – December 2010
Mid-Point of Construction:	May 2010
Commissioning:	December 2010 – January 2010
Occupy:	January 2011
Bid Demolition of Existing Building:	January 2011
Demolish Existing Building:	February-March 2011
Enhanced Commissioning (if desired):	November 2011

SECTION 3.0 - PROGRAM ANALYSIS



3.1 Assumptions

Programming and research interviews were held with DSHS staff, WSH staff and with a group of 50 patients. Selected Pharmacy, Central Supply and bulk Commissary staff were interviewed to determine needs.

KITCHEN:

The following program assumptions related to food service operations were included in this analysis:

- Many of the food quality issues around proper temperature can be solved through the use of active hot carts.
- Full service on-ward kitchen scenarios were abandoned as infeasible due to infrastructure limitations and anticipated initial and long term costs. Wards located in older central campus concrete and masonry buildings are already limited in program space, electrical infrastructure and vertical shaft space necessary to install exhaust systems required for full service kitchen equipment. Wards located at the east campus were designed with serving kitchen space and infrastructure to accommodate active hot/cold carts. The most recent renovation of wards E1 and E2 in Building 29 specifically included infrastructure for these carts.
- "Our Store" is located in the lower level of the Auditorium (Building 6) with the entrance at the north end of the building. Our Store services the canteen needs for the patients of the hospital that have grounds privileges to travel to the store. Patients that are unable to leave the wards are served through "Orders on Our Store". The store is a social hub where patients can gather, meet and socialize while enjoying hot and cold drinks, a wide selection of snacks and fast food; sundry, cosmetic's, and "special" order items. Our Store employs several patients of the Hospital and pays minimum wage in a Patient Job Training Program. Patients learn job skills and use these skills when seeking employment in the community after discharge. The Our Store scenario is based on the assumption that the central kitchen will support some food preparation, but finish cooking would be done at the Our Store location.
- None of the scenarios significantly alter off-campus traffic patterns or volumes. Reduction of delivery traffic to the center of the campus is anticipated.
- Providing food for other DSHS facilities in Pierce County, including Rainier School and the Special Commitment Center (SCC) at McNeil Island would add delivery truck traffic to and from the kitchen loading dock to those off-site facilities. Limited additional truck traffic would be required to serve the Child Study and Treatment Center (CSTC) and Oakridge Community Facility (OCF) as they are located on the east side of the campus and would be included in distribution routes that service the East Campus facilities in Buildings 28 and 29. CSTC and OCF each have their own separate kitchen facilities. These kitchens could be modified to accept holding carts from the WSH central kitchen as WSH already provides sauces and similar products to both of these facilities.
- Providing daily menu choice to the wards is an operational decision that has relatively little impact on kitchen design.
- The space program for the new kitchen is based on storage capacity for one week supply of dry and frozen goods and three days storage capacity in refrigerated areas.

COMMISSARY:

The following program assumptions related to commissary operations were included in this analysis:

- The Campus Master Plan calls for relocating service and delivery oriented functions from the central part of the campus to create a secure outdoor patient treatment quadrangle or mall.
- Reduction of vendor deliveries to the center of the patient occupied portion of the campus.
- Surplus material currently stored in the auditorium and elsewhere on the campus will be surplus.
- Support oriented bulk Commissary functions currently located in Buildings 11 and 32 will be analyzed for either incorporation into the new facility, or relocated as part of a future project.
- Facility oriented functions (Maintenance Warehouse) will not be included in this project and will eventually move to Building 11 as part of a future project.

3.2 Functions and FTE

KITCHEN:

COMPARATIVE LABOR ANALYSIS

None of the production methods analyzed will significantly change labor requirements in the following areas:

- Supervision, support, oversight, high skill positions
- Transport, logistics
- Dietary assistance in wards

Calculations were made to show the FTEs required for direct production and support within the main kitchen only:

Option No.	Production Model	Production FTE
K1	Status Quo (Current)	28.6
K2a	Blast Chill, Central Bulk	25.4
K2b	Blast Chill, Central Plated	31.7
Combination K2a and K2b	Blast Chill with Central Bulk and Plated	27.5
K3a	Blast Chill, On Site Bulk	19.1
K3b	Blast Chill, On Site Plated	25.4
Add Our Store	Add to options above	add 2 FTE
Add Rainier School	300 satellite beds	add 25% to FTE above
Add SCC	400 satellite beds	add 33% to FTE above
Add CSTC and OCF	64 satellite beds	add 5% to FTE above

There are an additional 73.7 FTE dietary staff located throughout the campus with most of those on the wards. No staffing changes at those locations would be required regardless of the production and distribution method chosen.

As this study recommends serving Our Store, CSTC and OCT, the total number of FET's will be 30.8 (27.5 x 105% for CSTC/OCF = 28.8 +2 for Our Store = 30.8 total).

COMMISSARY:

The commissary functions have the current number of FTE's as of April 2008:

<u>Location/Building</u>	<u>Current FTE</u>
Existing Patient Pharmacy (Building 13)	36.5
Existing Patient Central Supply (Building 13)	6
Existing Support bulk Commissary (Buildings 11 and 32)	11 (2 vacant)
Existing Facility / Maintenance (Building 33)	Not analyzed

The proposed number of FTE's for the relocated commissary functions would be:

<u>Location/Building</u>	<u>Proposed FTE</u>
Proposed Patient Pharmacy (Building 13)	36.5
Proposed Patient Central Supply (Building 13)	6
Existing Support Bulk Commissary (Buildings 11 and 32)	8

With the increasing number of medications available, reductions in staffing levels at the Pharmacy would be difficult to achieve. There are two remote satellite pharmacies located at Building 17 and Building 28.

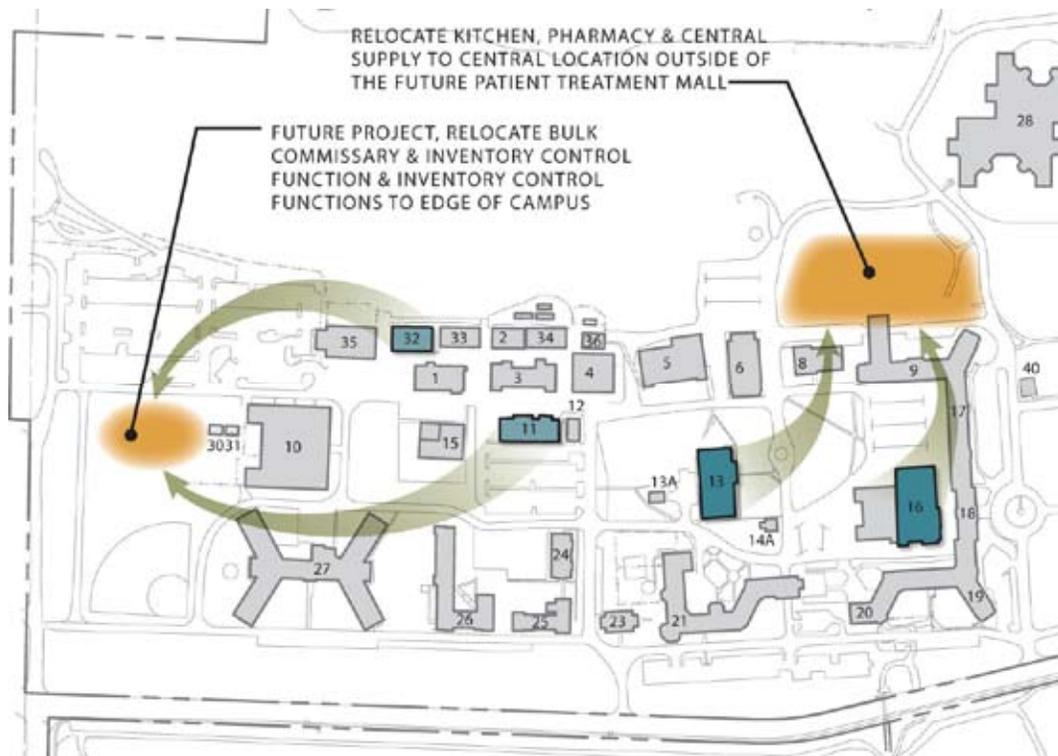
The Central Supply staffing levels are adequate for the function and no reductions would be achieved in the relocation.

The bulk Commissary staff allotment of 11 can be reduced by relocating to a more efficient building, consolidating two separated locations. This relocation/reconfiguration allows the two vacant positions along with one additional position to be eliminated.

3.3 Spatial Relationship Between the Facility and Site

The following relocation site diagram shows the existing locations of the Kitchen (Building 16), Pharmacy and Central Supply (Building 13), the bulk Commissary (Building 11) and Inventory Control (Building 32). The Kitchen, Pharmacy and Central Supply facility will be located immediately north of Buildings 8 and 9. The proposed future bulk Commissary would be located adjacent to the west campus entry, routing truck traffic in and out of the campus via a full signalized intersection.

The proposed location between the central and east campus areas will allow for potential underground connections to multiple buildings in the central campus area as well as a direct underground connection to the west end of Building 28, which has a basement distribution corridor that connects to a similar corridor in Building 29.





3.4 Interrelationships and Adjacencies of Functions

3.4A – KITCHEN, PHARMACY AND CENTRAL SUPPLY AREA MODEL

Kitchen				
Production	Qty.	Area Each	Total Area	Subtotal Area
Hot Food Preparation	1	500	500	
Cold Food Preparation	1	456	456	
Chill Area	1	126	126	
Finish Cooking / Rethermalization	1	200	200	
Tray Line	1	550	550	
Special Diet Preparation	1	200	200	
Bakery	1	400	400	
Meat Cutting	1	200	200	
Production Subtotal	8			2,632
Sanitation	Qty.	Area Each	Total Area	Subtotal Area
Ware Washing	1	739	739	
Garbage / Recycling	1	250	250	
Janitor / Chemical Storage	1	200	200	
Sanitation Subtotal	3			1,189
Support	Qty.	Area Each	Total Area	Subtotal Area
Receiving Dock	1	756	756	
Shipping Staging	1	673	673	
Administration	1	640	640	
Employee Support	1	974	974	
Support Subtotal	4			3,043
Storage	Qty.	Area Each	Total Area	Subtotal Area
Dry Storage	1	880	880	
Cold Storage	1	1,467	1,467	
Food Bank Chilled	1	704	704	
Freezer	1	587	587	
Equipment Storage	1	150	150	
Storage Subtotal	5			3,788
Additional Facility Space	Qty.	Area Each	Total Area	Subtotal Area
Add Servicing to Our Store	1	927	927	
Add Servicing to CSTC and OCF	1	292	292	
Storage Subtotal	2			1,219
Kitchen Total	22			11,871
Circulation Allowance at 25%				2,968
Gross Kitchen Area				14,839

Patient Oriented Commissary

Pharmacy	Qty.	Area Each	Total Area	Subtotal Area
Receiving / Storage	1	3,600	3,600	
Work Room	1	3,400	3,400	
Office	4	150	600	
Break Room	1	225	225	
Custodial	1	150	150	
Toilets	2	160	320	
Pharmacy Subtotal	10			8,295
Circulation Allowance at 5%				415
Gross Pharmacy Area				8,710

Central Supply	Qty.	Area Each	Total Area	Subtotal Area
Processing / Work Area	1	1,570	1,570	
Sterile Storage	1	730	730	
Decontamination	1	475	475	
Main Storage	1	3,685	3,685	
Outside Storage	1	180	180	
Supply Washing	1	100	100	
Supply Storage	1	135	135	
Custodial	1	80	80	
Autoclave	1	112	112	
Office	2	190	380	
Break Room	1	125	125	
Toilets	2	150	300	
Central Supply Subtotal	14			7,872
Circulation Allowance at 5%				394
Gross Central Supply Area				8,266

Miscellaneous	Qty.	Area Each	Total Area	Subtotal Area
Custodial Closets	2	50	100	
Public Toilets	2	250	500	
Conference Room	1	150	150	
General Building Storage	2	180	360	
MDF	1	150	150	
IDF	2	50	100	
Miscellaneous Subtotal	10			1,360

BUILDING TOTALS

	Total Area
Grand Subtotal	33,174
Mechanical / Electrical @ 7% of Net	2,322
Circulation, Walls included in totals above	0
TOTAL GROSS SQUARE FEET	35,496

3.4B – SUPPORT ORIENTED BULK COMMISSARY AREA MODEL

Rather than combine all of the Commissary functions into a single 64,841 square foot building co-located with the Kitchen, this study concluded that it would be more cost effective to locate the bulk commissary support oriented warehousing at the west end of the campus where access to a signalized intersection is available. This facility can be housed in a less expensive pre-engineered steel building. The research conducted for this study resulted in the following suggested area model for the support oriented bulk commissary facility.

Support Oriented Bulk Commissary

Administration	Qty.	Area Each	Total Area	Subtotal Area
Manager's Office	1	120	120	
Conference / Break Room	1	200	200	
General Office Area	1	1,080	1,080	
Waiting / Reception Area	1	100	100	
Staff Restrooms	2	100	200	
Administration Subtotal	6			1,700
Circulation Allowance at 10%				170
Gross Administration Subtotal				1,870
Warehousing	Qty.	Area Each	Total Area	Subtotal Area
Archives	1	1,550	1,550	
Computer and Printer Supplies	1	350	350	
Custodial and Cleaning Supplies	1	2,600	2,600	
Flat Goods	1	1,400	1,400	
Incontinence	1	1,700	1,700	
Paper Goods	1	3,940	3,940	
Patient Clothing	1	3,580	3,580	
Personal Care Products	1	850	850	
Receiving	1	1,450	1,450	
Inventory Control	1	4,560	4,560	
Warehousing Subtotal	10			21,980
Circulation Allowance at 25%				5,495
Gross Warehousing Subtotal				27,475
Mechanical / Electrical				1,870
Circulation, Walls included in totals above				0
Gross Support Oriented Bulk Commissary Area				29,345

3.4C - MAIN KITCHEN SPACE PROGRAM TO SERVE WSH CAMPUS ONLY

	WSH Only			Including Our Store		
	Option K1	Option K2a, K3a	Option K2b, K3b	Option K1	Option K2a, K3a	Option K2b, K3b
	Status Quo	Chill/Bulk	Chill/Portion	Status Quo	Chill/Bulk	Chill/Portion
<u>Storage</u>						
Dry Storage	750	750	750	880	880	880
Cold Storage	1,250	1,250	1,250	1,467	1,467	1,467
Food Bank/Chilled	600	600	600	704	704	704
Freezer	500	500	500	587	587	587
Equipment Storage	150	150	150	150	150	150
<u>Support</u>						
Receiving Dock	756	756	756	756	756	756
Shipping Staging	673	673	673	673	673	673
Administration	560	560	560	640	640	640
<u>Sanitation</u>						
Ware Washing	630	630	630	739	739	739
Garbage/Recycling	250	250	250	250	250	250
Janitor/Chemical Storage	200	200	200	200	200	200
<u>Production</u>						
Hot Food Preparation	500	500	500	500	500	500
Cold Food Preparation	400	400	456	456	456	456
Chill Area Finish		126			126	126
Cooking/Retherm		200	200	200	200	200
Tray Line						550
Special Diet Preparation	200	200	200	200	200	200
Bakery	400	400	400	400	400	400
Meat Cutting	200	200	200	200	200	200
Total Net SF	8,849	9,175	9,725	9,976	10,102	10,652
Total GSF @ +25%	11,061	11,469	12,156	12,471	12,628	13,316

3.5 Major Equipment

3.5A - MAIN KITCHEN EQUIPMENT BUDGETS TO SERVE WSH ONLY

	WSH Only			Including Our Store		
	Option K1	Option K2a, K3a	Option K2b, K3b	Option K1	Option K2a, K3a	Option K2b, K3b
	Status Quo	Chill/Bulk	Chill/Portion	Status Quo	Chill/Bulk	Chill/Portion
<u>Storage</u>						
Dry Storage	24,750	24,750	24,750	29,047	29,047	29,047
Cold Storage	233,750	233,750	233,750	274,332	274,332	274,332
Food Bank/Chilled	112,200	112,200	112,200	131,679	131,679	131,679
Freezer	93,500	93,500	93,500	109,733	109,733	109,733
Equipment Storage	4,950	4,950	4,950	4,950	4,950	4,950
<u>Sanitation</u>						
Ware Washing	318,780	318,780	318,780	374,124	374,124	374,124
Garbage/Recycling	37,500	37,500	37,500	37,500	37,500	37,500
Janitor/Chemical Storage	6,600	6,600	6,600	6,600	6,600	6,600
<u>Production</u>						
Hot Food Preparation	137,500	137,500	137,500	137,500	137,500	137,500
Cold Food Preparation	94,400	94,400	94,400	107,511	107,511	107,511
Chill Area Finish		34,650	34,650		34,650	34,650
Cooking/Retherm		55,000	55,000	55,000	55,000	55,000
Tray Line			129,800			129,800
Special Diet Preparation	47,200	47,200	47,200	47,200	47,200	47,200
Bakery	101,200	101,200	101,200	101,200	101,200	101,200
Meat Cutting	47,200	47,200	47,200	47,200	47,200	47,200
<u>Distribution</u>						
Active Hot/Cold Holding Carts	420,000	420,000	420,000	420,000	420,000	420,000
Total	\$1,259,530	\$1,769,180	\$1,898,980	\$1,883,575	\$1,918,225	\$2,048,025

3.5B - EQUIPMENT BUDGET IMPACT OF ON-SITE RETHERMALIZATION

Single Solution for All Locations			
Combi Ovens	17 Kitchens	\$53,000	\$901,000
Convection	1200 Plates	\$1,800	\$2,160,000
Induction	1200 Plates	\$2,500	\$3,000,000
Ventless Steamer	17 Kitchens	\$30,000	\$510,000

Based on cost and flexibility, combination ovens are an attractive solution in South Hall, Central Hall and PALS.

Due to infrastructure limitations and the location of kitchens in the CFS and COAS facilities, the installation of combination ovens is cost prohibitive. These wards can be served with some food rethermalized at the central kitchen with ventless steamers at the ward locations. A blended solution would require:

Blended Solution			
South Hall	4 Kitchens (Combi-Ovens)	\$53,000	\$212,000
Central	3 Kitchens (Combi-Ovens)	\$53,000	\$159,000
Pals	2 Kitchens (Combi-Ovens)	\$53,000	\$106,000
CFS/COAS	8 Kitchens (Ventless Steamer)	\$30,000	\$240,000
Total			\$717,000

3.5B - EQUIPMENT BUDGET IMPACT OF ON-SITE RETHERMALIZATION

For the most part, existing office and storage furnishings can be relocated from existing facilities and reused. At the future support bulk Commissary warehouse, high capacity pallet racks should be purchased and installed to increase the efficiency of the storage area. This will most likely necessitate procuring an appropriate forklift as part of that future project.

3.6 Offsite Satellite Outsourcing

This study recommends against outsourcing food services to other facilities in Pierce County for the following reasons. At first analysis, the outsourcing of food production from the SCC, Rainier School and other regional DSHS facilities to WSH would appear to carry the potential for moderate gains in labor efficiency. Outsourcing would allow dietary personnel assigned to bulk food production to be eliminated from these other facilities. However, upon further investigation, these potential gains appear to be at least partially offset by the need for additional production labor in the WSH kitchen, since an increase of 2100 meals per day for Rainier School and the SCC combined cannot be absorbed by WSH at the staffing levels used for this study. This observation is strengthened by the fact that both Rainier School and the SCC each produce a sufficient daily volume to justify dedicated, fully utilized production staff, which indicates that the bulk of the labor transfer from these units to WSH would be a 1:1 exchange.

If WSH were to be used as a regional production center, the main efficiencies would therefore be derived through more efficient production methods and the uncoupling of production from the daily schedule of meals. It is important to note, however, that the staff used to handle food and manage the kitchens in the satellite locations will be largely unaffected by outsourcing since their duties do not stem primarily from production.

Furthermore, the marginal gains in efficiency that can be realized, will also be offset by the creation of new FTE positions and transportation costs for shipping and delivery of prepared foods. In effect, in order to outsource production of food for regional satellites to WSH, DSHS will have to internalize the cost of delivery and storage that is currently carried by food purveyors, particularly the prime vendors. This effect is exacerbated by the differential between culinary pay rates and those assigned to delivery drivers. None of these considerations take into account the investment in refrigerated trucks, or the raw cost of transportation in terms of gasoline and vehicle maintenance and depreciation that will be internalized to DSHS in a system based on centralized production.

The menu program at WSH serves a broad variety of individualized dietary needs and is likely to meet most dietary regimens, as well as most diets restricted due to religious or ethnic preference. One of the long term objectives at WSH is to support a dietary program that provides choice to the residents and engages their input as part of the therapeutic process. Much of the efficiency foreseen in food production relies on growing the WSH program without adding to the complexity of the menu. The operational pressures of production efficiency run counter to providing comprehensive and responsive service to a large number of disparate locations and populations.

In sum, barring gross inefficiencies in production among the satellite kitchens, the case for realizing significant financial efficiencies through regional centralization is tenuous. Such a system could easily be more expensive than the current configuration and would likely be less responsive to the individual satellite populations and programs.

The WSH kitchen currently supports the CSTC and OCF by producing sauces and similar bulk items for use at these two facilities. The Blast Chill system will further enhance this service.

Despite these issues, if food services are provided to other institutions in Pierce County, the patient populations would need to be accommodated as follows:

Pierce County DSHS Sites		
Rainier School	300 Patients	(Developmentally Disabled Adults)
Special Commitment Center (SCC)	400 Patients	(Adult Forensic Patients)
Child Study and Treatment Center (CSTC)	48 Patients	(Teen Mentally Disabled)
Oakridge Children’s Home (OCF)	16 Patients	(Teen Rehabilitation)

ADDITIONAL EQUIPMENT REQUIRED

The following table lists the additional cost impact to the Western State Hospital operation that would be required to serve other institutions located in Pierce County. The differential costs listed below do not include additional or reduced FTE’s at the other facilities, costs for additional infrastructure or renovations at those facilities or the additional cost for transporting food to those facilities.

	Add “Our Store”	Add 64 (CSTC, OCR)	Add 300 (Rainier School)	Add 400 (SCC)
<u>Storage</u>				
Dry Storage	4,297	1,320	6,166	8,272
Cold Storage	40,582	12,467	58,438	77,916
Food Bank/Chilled	19,479	5,984	28,050	37,400
Freezer	16,233	4,986	23,375	31,167
Equipment Storage	---	---	---	---
<u>Sanitation</u>				
Ware Washing	55,344	17,002	79,695	106,260
Garbage/Recycling	---	---	1,500	6,000
Janitor/Chemical Storage	---	---	---	---
<u>Production</u>				
Hot Food Preparation	---	---	---	27,500
Cold Food Preparation	13,111	---	---	23,600
Chill Area	---	---	---	11,550
Finish Cooking/Retherm	---	---	---	27,500
Tray Line	---	6,922	32,450	75,717
Special Diet Preparation	---	---	---	23,600
Bakery	---	---	---	---
Meat Cutting	---	---	---	---
Total	\$149,045	\$48,681	\$229,654	\$486,482

Requirements for additional active hot/cold holding carts would be dependent on the types and amount of food produced for remote facilities. For the CSTC and OCF, food would be distributed in bulk to each facility and is accounted for in the storage equipment in the table above.

The total recommended equipment cost to serve WSH, Our Store, CSTC and OCF is \$1,825,752 plus \$420,000 for active hot/cold holding carts for meal distribution to the wards.

IMPACTS OF ADDING SATELLITE FACILITIES

	Space Requirements in Additional NSF	Space Requirements in Additional %	Equipment Budget Impact in \$	Equipment budget Impact in %	Production Labor Impact
Add Our Store	927	9.5%	\$149,045	10.1%	+2 FTE
Add 300 Beds	1598	16.4%	\$229,695	15.5%	+4.8-7.9 FTE
Add 400 Beds	2244	23.1%	\$424,010	28.7%	+6.3-10.5 FTE
Add 64 Beds	292	3.0%	\$48,682	3.3%	+0.9-1.6 FTE

3.6A Rainier School

Rainier School is a residential facility for about 370 adults with developmental disabilities located within the city limits of Buckley, Washington, approximately 30.7 miles or 54 minutes from the WSH campus. Rainier School operates a full service kitchen to serve the needs of the residents at the facility.

The facility provides 24-hour residential and specialized care with life task and vocational training in a home-like setting. Residents have access to vocational training, leisure activities, social relationships, and recreation. Programs and services are individualized and designed to enhance self-determination and maximize independence.

The Rainier School community includes:

- Medical, dental and nursing care.
- Social and psychological services.
- Occupational therapy, physical therapy and speech therapy evaluations, treatment and adaptive equipment.
- Vocational training and employment in paid jobs on-campus and in local communities, including operating the Rainier Thrift and Gift store located in Bonney Lake, Washington.
- Recreation facilities include a swimming pool, gymnasiums, a bowling alley, a social center, an active Special Olympics program, evening and weekend leisure opportunities, dances and special/holiday events.
- Residences are home-like and staffed to promote the care and teaching of daily activities, such as grooming, meals, socialization, shopping and money management, and community experiences.
- Nutrition and dietary services, including modified textures and therapeutic diets.
- A beauty/barber shop, coffee shop, chapel services, volunteers, and other life-enhancing supports and opportunities

Rainier School is an Intermediate Care Facility for the Mentally Retarded (ICF/MR) program certified by the United States Department of Health and Human Services, Center for Medicare and Medicaid Services. Compliance with the ICF/MR regulations enables the state to obtain federal matching funds for this program. Facilities in this program are subject to regular, rigorous surveys to ensure quality care and treatment.

To transfer the production of resident meals to WSH, an additional 4.8 to 7.9 production FTE would be required at the WSH Kitchen. Meals prepared at WSH would be cooked, chilled and stored in transport carts until transported. Adding service to Rainier School would result in the following additional capital costs for the new Kitchen at WSH:

CAPITAL COST IMPACT AT WSH:

Additional equipment:	\$229,654
Additional building area at 1,598 SF:	\$891,524
<hr/>	
TOTAL Capital Cost:	\$1,121,378

OPERATING COST IMPACT AT WSH:

The following annual costs would need to be added at WSH:

7 additional Food Service Worker 1 positions:	\$209,328
Annual maintenance and energy:	\$17,072
<hr/>	
TOTAL Annual Cost:	\$226,400

It is assumed that food carts would be delivered to the existing Rainier School kitchen and held until distribution to the residents.

3.6B Special Commitment Center (SCC)

The Special Commitment Center provides a specialized mental health treatment program for civilly committed sex offenders who have completed their prison sentences. This institutional program, the first stop for civilly committed individuals, provides treatment in a total confinement facility on McNeil Island, approximately 7.1 miles from the WSH campus. The SCC is accessed solely by ferry and travel time is approximately 40 minutes not counting ferry wait times. A full service kitchen at the SCC currently serves the nutritional needs of the approximately 400 residents housed there.

With the exception of 30 special diet meals, all meals are prepared bulk and served from a weekly menu schedule cafeteria style. During lock-down situations, all meals are plated and served individually. The Kitchen maintains an adequate inventory to serve the facility in the event of an emergency or interruption of ferry service.

To transfer the production of meals to WSH, an additional 6.3 to 10.5 production FTE would be required at the WSH Kitchen. Meals prepared at WSH would be cooked, plated, chilled and stored in transport carts until transported. Adding service to the SCC would result in the following additional capital costs for the new kitchen at WSH:

CAPITAL COST IMPACT AT WSH:

Additional equipment:	\$486,482
Additional building area at 2,244 SF:	\$1,251,927
TOTAL Capital Cost:	\$1,738,409

OPERATING COST IMPACT AT WSH:

The following annual costs would need to be added at WSH:

10 additional Food Service Worker 1 positions:	\$299,040
Annual maintenance and energy:	\$23,973
TOTAL Annual Cost:	\$323,013

It is assumed that food carts would be delivered to the existing SCC kitchen and held until distribution to the residents.

3.6C Child Study and Treatment Center (CSTC) and Oakridge Community Facility (OCF)

The CSTC is the state of Washington's only psychiatric hospital for children and treats children from age 5 to 17, who cannot be served in less restrictive settings within the community. The inpatient program has the capacity to serve 16 children between 5-12 years of age and 31 adolescents, ages 12-17. There are three cottages where children each have their own bedrooms. Most cooking occurs in the cottage kitchens with sauces already prepared at the WSH Kitchen.

Part of the Juvenile Rehabilitation Administration (JRA), the OCF focuses on supporting and reinforcing the use of skills that were learned in institutional care. Youth attend regular high school and vocational training programs and/or work at regular jobs in the community. OCF utilizes a Nutrikids program six week menu cycle, and complies with USDA requirements for school meal federal reimbursement.

The Oakridge cook teaches a structured Culinary Arts skills training curriculum as a key component of the treatment program, and works daily with two residents teaching them all aspects of food service to prepare for employment, and transition to independence. Youth are paid a stipend, receive school credit for Culinary Arts, with many advancing to food service employment in the local community as a result of this training.

JRA facilities are required to maintain an OSPI Local Wellness Policy, which required a wide variety of daily healthy snack options be available to the residents. Holiday meals, and various meals with a cultural emphasis are planned to encourage parental involvement in their child's treatment.

To transfer the remaining production of meals to WSH, an additional 0.9 to 1.6 production FTE would be required at the WSH Kitchen. Food deliveries could be accommodated within the current on-campus transport capabilities. WSH currently prepares suaces in bulk for use at both of these facilities.

CAPITAL COST IMPACT AT WSH:

Additional equipment:	\$48,681
Additional building area at 292 SF:	\$162,907
<hr/>	
TOTAL Capital Cost:	\$211,588

OPERATING COST IMPACT AT WSH:

The following annual costs would need to be added at WSH:

1 additional Food Service Worker 1 positions:	\$29,904
Annual maintenance and energy:	\$3,119
<hr/>	
TOTAL Annual Cost:	\$33,023

It is assumed that food carts would be delivered to the existing kitchens and held until distribution to the residents.

3.7 Future Needs and Flexibility

ARCHITECTURAL SYSTEMS:

INTRODUCTION

This section describes the proposed architectural and design direction for the New Kitchen/Commissary Building for Western State Hospital. Context and function are primary drivers in the formulation of an architectural vocabulary that will give appropriate expression to the purpose and setting of this building.

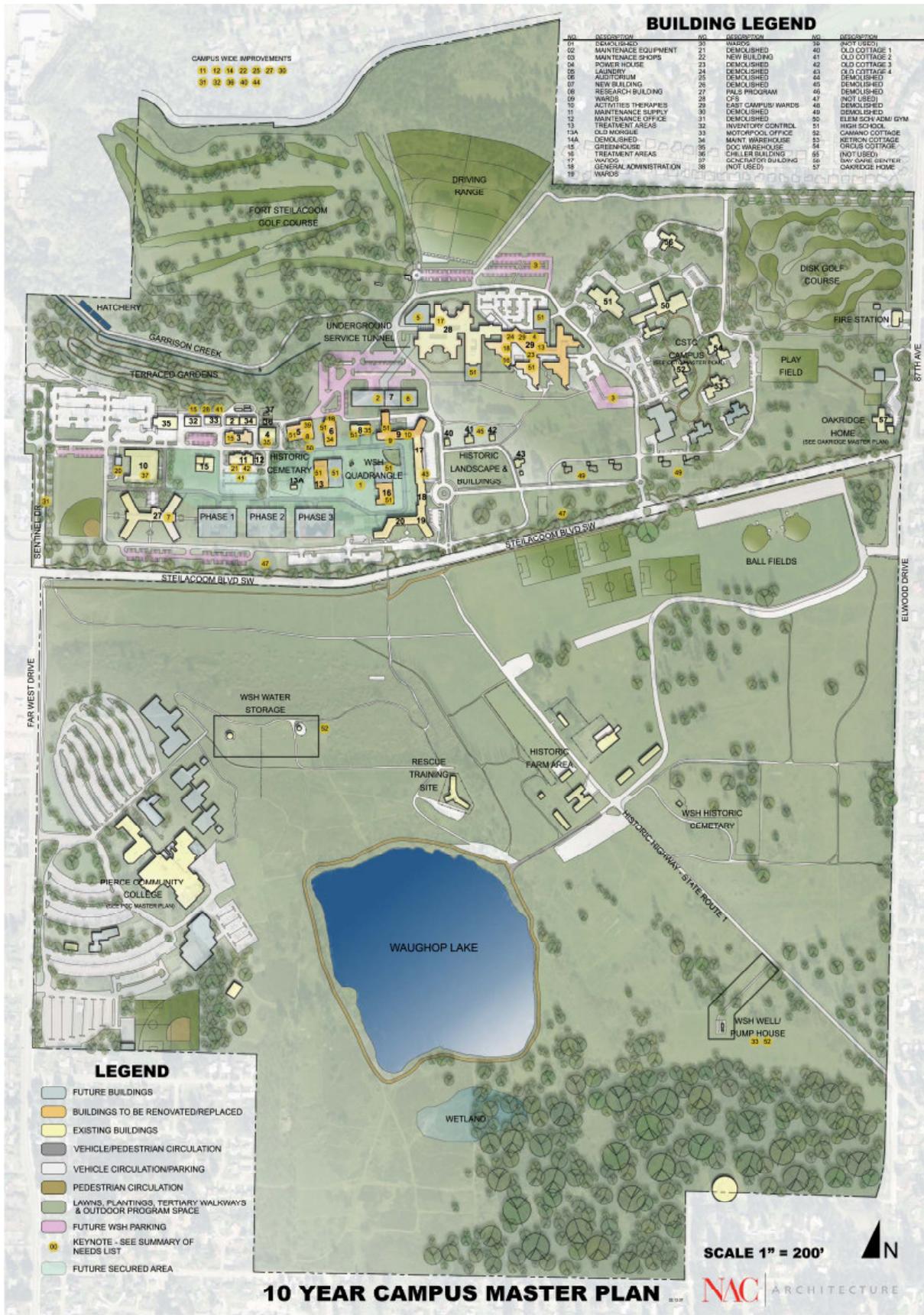
GUIDING DESIGN PRINCIPLES

Two important sets of criteria are used to establish the guiding design principles.

1. Long term Life Cycle Value Analysis will guide the material and form choices.
2. Western State Hospital Campus Master Plan (2007) served as a guide to campus planning and building design criteria.

CONTEXTUAL ISSUES

- Respect the architectural style and scale of the WSH campus.
- Enhance the hierarchy of campus open space.
- Building should reflect its role within campus context.
- Evaluate various approach sequences.
- Evaluate role and function of site entrance points.
- Identify relocation options for displaced functions.



DESIGN

- Be consistent with the historical architectural context of the original hospital campus.
- Complement the existing spatial relationships between buildings.

CAMPUS CIRCULATION/SECURITY

- Circulation scheme is a ring road surrounding a secure core.
- The site aesthetic of Western State Hospital Campus is created by buildings and landscaped open spaces between them.
- Goals:
 - Preserve heritage of historic buildings in a natural setting.
 - Enhance views and vistas.
 - Visually link different areas.
 - Develop campus nodes and links.

DESIGN GUIDELINES:

GENERAL

- All new buildings recognize the larger building on campus.

MATERIALS

- Historically compatible.
- Color/texture.
- Brick.
- Limit large areas of metal/glass.
- No new contrasting materials.

COLOR

- Respond to traditional brick of campus buildings.
- Complementary paint or materials.

SCALE

- Maximum height – respect proportions of the Auditorium (Building 6) and Buildings 8 and 9.
- Utilize slope into ravine to minimize scale.

SITING

- Attention to axis between buildings.
- Consider distance/volume between buildings.
- Respect existing landscape patterns.
- Create pedestrian scaled open space.

BUILDING PROPORTION

- Geometric proportion in harmony with adjacent buildings.

ARCHITECTURAL STYLE

- Blend with existing “style”.
- Do not imitate.
- Be representative of the time constructed.
- Embody the spirit of campus without copying.

HISTORICAL ANALYSIS:

One of the main goals of this pre-design process was to respect and preserve the rich heritage of the Western State Hospital campus.

The legacy of the campus springs from earliest human settlement with the natural attraction of a spring providing a convenient source of potable water. European Americans arriving from the East soon established an outpost centered on this spring and eventually a military post. Artifacts of these early residents are still evident on the site and the more prominent structures on the campus convey a cohesive evolution and predominant architectural character.

Over the last several decades, many of the same important issues that directly relate to this project's scope have been repeatedly discussed and debated:

- Serviceability of aging and inflexible facilities
- New building locations on the campus
- Open space preservation and enhancement
- Preservation of deteriorating yet historically significant structures
- Balancing of campus security with open and efficient circulation
- Balancing the values of a functional facility with maintenance of an historical landmark

With an understanding of the past, this pre-design looks to the future and addresses many of the same issues in a way that will preserve the heritage of the campus for future generations.

STRUCTURAL SYSTEM DESCRIPTION:

APPLICABLE CODES

Building Code: International Building Code (IBC), 2006 Edition, including all referenced material standards and State of Washington amendments

ASCE 7: American Society of Civil Engineers, "Minimum Design Loads for Buildings and Other Structures," 2005 Edition

LOADS

The structure will be designed for the following live loads:

- Corridors & Lobbies at First Floor 100 psf
- Offices and Corridors 80 psf (includes partitions)
- Kitchen 150 psf
- Warehouse 300 psf
- Storage Rooms 125 psf

-
- Mechanical Rooms 125 psf or equipment weights, if greater
 - Roofs 25 psf or snow load plus drifting, if greater
 - Wind loads shall be in accordance with the Building Code. Assumed wind criteria are: Three-second gust wind speed of 85 mph, Exposure B, and Importance Factor of 1.0.
 - Seismic loading for new construction shall be in accordance with the Building Code. Assumed seismic criteria are: Seismic Use Group I, Seismic Design Category D, and Importance Factor of 1.0. The site class and the spectral response coefficients will be determined by the Geotechnical Engineer. The analysis of the existing building assumed the following: Site Class D, $S_S = 1.18$, and $S_1 = 0.42$.

STRUCTURAL MATERIALS:

CONCRETE:

- Foundations and Slab on Grade: Normal weight, $f'_c = 4,000$ psi
- Floor Framing, Columns, and Shear Walls: Normal weight, $f'_c = 5,000$ psi
- Reinforcement: ASTM A615, Grade 60

STEEL FRAMING:

- Wide Flange Shapes for Columns and Beams: ASTM A992, Grade 50
- Rectangular Tubes: ASTM A500, Type B, Grade 46
- All Other Steel: ASTM A572, Grade 50
- High Strength Bolts at Connections: 7/8-inch diameter ASTM A325
- Anchor Bolts: 3/4-inch diameter ASTM F1554
- Welding per AWS D1.1

METAL DECK AND SHEAR STUDS:

- Composite Steel Decking: 3-inch deep Type W, 20 gage minimum
- Composite Shear Studs: 3/4-inch diameter automatically-end-welded headed studs

STRUCTURAL SYSTEMS:

- The new building will consist of at least two levels with on-grade accessibility on an upper and a lower level. This will necessitate the construction of a retaining wall of concrete that will likely require temporary shoring. Excavation may reveal remnants of the foundation of North Hall (Building 7) recently demolished on this site. These old foundations will be removed prior to installation of the new retaining wall and foundation system.
- The foundation system will consist of spread footings or augercast concrete piles that transfer all vertical and lateral forces to the ground. The allowable soil bearing pressure and pile capacities will be determined by a Geotechnical Engineer.
- The slabs-on-grade will consist of a 4-inch-thick cast-in-place concrete slab. The sub-base will be provided according to the Geotechnical Engineer's recommendations. If the geotechnical engineer indicates a potential for ground water beneath the ground-level slabs, the slabs-on-grade will require an under-slab drainage system. The retaining walls will consist of approximately 12 inch to 18-inch-thick cast-in-place concrete walls that will vary by depth. The soil pressures due to hydrostatic and seismic forces will be determined by the Geotechnical Engineer. Temporary shoring will be required to construct the below-grade levels at the east, west, and south sides of the excavation.
- The typical framing bay in the above grade spaces will be 20 feet by 35 feet. A 9" mild reinforced one-way concrete slab will span between mild reinforced concrete beams approximately 28 inches deep at 20 feet on center. These beams will be supported by approximately 18"x18" concrete columns.
- Lateral forces due to seismic, wind, and unbalanced soil pressure will be resisted in the buildings by concrete shear walls. The lateral loads will be carried by the floor diaphragms to the shear walls and then delivered to the foundations in proportion to their ability to resist lateral deformation. The concrete shear walls will all be continuous from the roof to the foundation. The thickness of the shear walls will vary depending on the distribution and lengths of the walls and the height in the buildings. The shear walls in the above grade building will be distributed throughout the buildings around circulation functions (corridors, stairs, elevators, restrooms, etc.).

MECHANICAL SYSTEMS DESCRIPTION:

Design Criteria

- 2006 International Building Code
- 2006 International Mechanical Code
- 2006 Uniform Plumbing Code
- 2006 International Fire Code
- 2006 Washington State Energy Code
- Miscellaneous:
 - National Fire Protection Association (NFPA), Codes, Standards, Recommended Practices, Manuals and Guides
 - ANSI/NFPA 70, "National Electrical Code"
 - Department of Labor, OSHA, Occupational Safety and Health Standards

- National Safety Council, "Accident Prevention Manual"
- SMACNA Seismic Restraint Manual: Guidelines for Mechanical Systems; dated 1998.
- General Administration Facilities Design Guidelines & Construction Standards

DESIGN CONDITIONS:

1. Environmental Conditions:

Design Temperatures	Heating	Cooling
Outdoor Conditions	20 F	85 F DB/67 F WB
General Work Spaces	70 F DB	Air Condition to 75F/no humidity control; ranges from 30% to 70%
Dry Storage Areas	65F DB	75FDB + 4F 50 %RH + 5%
Mechanical & Electrical Rms	55 F DB	Ventilate using outdoor air to 10 deg. F above ambient (95F)
Communication Rms, (MDF –Server rooms) And Elevator Equip Rm	70 F DB	Air condition to 72F DB no humidity control - ranges from 30% to 70%

2. Air Filtration: Pleated media cartridge pre-filters with a Minimum Efficiency Reporting Value (MERV) of 13 or better; as tested in accordance with ASHRAE Test Standard 52.2.
3. Ventilation: To insure that good indoor air quality is maintained for the occupants, a minimum of 20 cfm/person of outside air will be introduced into occupied spaces via the air handling systems. Restroom exhaust will be based on no less than 12 air changes/hour.

EXTERIOR ENVELOPE REQUIREMENTS:

1. General: New components of the building envelope will be insulated to meet or exceed the Washington State Energy Code as applicable to new buildings.
2. Specific Thermal Values:
 - a. Roof R-30 Rigid, U=0.03
 - b. Walls R-19 Batt, U=0.06
 - c. Glazing Double Pane, U=0.45, SC=0.45
 - d. Doors U=0.50
 - e. Slab R-10 Perimeter Rigid Insulation.

MECHANICAL SYSTEMS – GENERAL:

1. In general, the mechanical systems design will comply with the requirements of the applicable State Mechanical, Ventilation and Plumbing Codes as well as the Washington State Health Code. The following information describes features and systems which are unique to this project.
2. A minimum of four feet of clearance will be provided around all mechanical equipment wherever possible. As a bare minimum, clearance will be provided on one side of each air handling unit and equipment for maintenance access and coil removal. In this case, all access doors into the units will be specified on one side.
3. Noise, vibration and seismic control will be provided for the appropriate Mechanical Systems. Sound attenuation requirements will be as recommended by the Acoustical Consultant. Pending an acoustical analysis, it is assumed that sound attenuators will be provided at the outlet of air handling unit supply fans and at the inlet of return fans.
4. Labeling of ductwork, piping, valves and equipment shall be provided.
5. Insulation of Mechanical Systems will include outside air and supply air ductwork, domestic hot water/cold water/hot water circulation piping, steam and condensate piping, and heating water piping. The insulation will be in accordance with the Washington State Energy Code.
6. Duct work will be insulated with external fiberglass duct wrap. Duct liner will not be used for thermal insulation nor for general sound attenuation. Where sound attenuation is needed, sound attenuators will be used.
7. Testing and Balancing of the Air and Water Systems will be accomplished by an Agency certified by the Associated Air Balance Council or the National Environmental Balancing Bureau specializing in Air and Water System Balancing. The mechanical drawings will state the final design system capacities for reference by the Contractor and use by the maintenance personnel.
8. All Mechanical Systems will be commissioned as part of the requirements of the construction contract.
9. Access doors will be provided to maintain access to all mechanical items requiring routine maintenance located above hard lid ceilings.

PLUMBING SYSTEMS

1. Domestic Water Piping System: Will use type L copper above ground, and type K copper below ground. A backflow preventer will not be provided on the water main to the building. Valves will be rated for 125 psi-swp. Valves 2-1/2 inch and smaller will be of bronze construction, threaded or solder type; larger valves will have iron bodies bronze mounted, and be flanged. Water hammer arresters will be provided at cold water headers serving fixtures with flush valves. Valves will be the ball type. Dielectric unions will not be used.
2. Domestic Hot Water Generation: Two electrically heated hot water tanks will provide domestic hot water. A circulation pump will maintain circulation through the system to ensure hot water at the most remote fixture connected to each water heater. This pump will be controlled by a timeclock and Aquastat, connected in series. A diaphragm type expansion tank will be provided on the water heater. Tanks will be set at 120 deg F with the kitchen area hot water tank set at 140 deg F.
3. Sanitary Waste & Vent System: System will use no-hub cast iron, schedule 40 galvanized steel (DWV), or copper DWV. Cleanouts will be provided per code requirements. Floor cleanouts will have round cast iron adjustable housings, with heavy duty bronze top, and be independent from the waste piping cleanout. All floor drains will have trap primers.
4. Plumbing Fixtures: Water closets will be wall mounted siphon-jet type, vitreous china, white, with low water consumption flush valves. Urinals will be the waterless type, wall mounted. Sinks will be of stainless steel construction, 18 gauge, with gooseneck faucets, and basket type strainers. Lavatories will be vitreous china type, with wall carriers, with dual temperature metering type faucets. Drinking fountains will be dual height type, stainless steel, with wall carriers. Wash fountains will be wall mounted, with push button operation, and integral mixing valves.
5. Gas Piping: Will be of schedule 40 black steel, with 2 lb gas service provided. Gas regulators will be provided to reduce gas pressure to 7 inch wc for serving cooling equipment.
6. Steam/Condensate Piping: Steam piping will be schedule 40 black steel; condensate piping will be schedule 80 black steel. Steam service will be obtained from existing piping mains from the main boiler plant. Two stage pressure reduction from 125 psig to 30 psig will be provided. A condensate pump with duplex pumps will return condensate to the central boiler plant.
7. Chilled Water Piping: Chilled water piping will be schedule 40 black steel.
8. Heat Recovery: A pre-heat water storage tank and heat exchanger coil will be provided as part of a heat recovery system, utilizing waste heat from the dishwasher discharge water.

HVAC SYSTEM

1. System Type:
 - Kitchen: The new HVAC systems will provide air conditioning for the kitchen. A combination of constant volume and variable air volume (VAV) rooftop units will be provided. Rooftop units will have steam heating coils and chilled water cooling coils (steam and chilled water provided by existing campus main plants). Constant volume units will provide air to compensate for exhaust thru kitchen hoods. VAV unit(s) will serve all non-cooking spaces.
 - Receiving/Maintenance: Under Alternates 1 and 2, rooftop units with steam heating coils and chilled water cooling coils will be provided. Under Alternate 3, units will be rooftop packaged gas fired heating units.
 - Data/Telephone Equipment Rooms (DF/IDF) will be served by dedicated split system air conditioning units.
 - Mechanical and Electrical Rooms will be ventilated with outside air.
2. Air Distribution: Ductwork will be galvanized steel, constructed per SMACNA and local code standards. Sound attenuators would be used as needed to reduce noise levels from units. Air outlets and inlets will be of steel or aluminum construction.
3. Steam and Hydronic System: See Plumbing System.
4. Exhaust Heat Recovery: Exhaust fans will typically be roof-top mounted. Upblast type would be used for kitchen hoods. Heat will be recovered from main kitchen hoods to pre-heat make-up air.
5. Controls: Will be direct-digital control (DDC) type, as provided by Andover Controls. System will provide timeclock, temperature, and ventilation control for all areas.

FIRE SPRINKLER SYSTEM

1. Water Supply: A double-check backflow preventor will be provided on the fire line to the building. A remote located fire department connection will also be provided.
2. Sprinkler System: System will be a wet type system throughout, with a dry system to serve areas subject to freezing. Area hazard class will be according to NFPA 13. System design will conform to NFPA 13, except that coverage will also be provided above ceilings.
3. Piping: Shall be type as allowed by code.

ELECTRICAL SYSTEMS DESCRIPTION:

Applicable Codes

- NFPA 70-National Electrical Code
- WAC 296-46B-Washington State Electrical Safety Standard, Administration, and Installation
- 2006 International Fire Code
- 2006 International Building Code
- 2006 Washington State Energy Code
- General Administration Facilities Design Guidelines & Construction Standards
- FDA Food Code Requirements for Physical Facilities
- LEED NC2.2

POWER DISTRIBUTION SYSTEM:

The existing campus primary power distribution system will be extended to serve the new facility. A 480/277 volt system will be utilized for lighting, HVAC, and electric cooking loads. A 208/120 volt system will be utilized for convenience outlets and small power loads.

Copper bussed panelboards with door-in-door locking covers to be located in electrical rooms.

STANDBY POWER:

The existing campus primary power distribution system is presently on standby generator.

LIGHTING SYSTEM:

Fluorescent lighting will be used in all interior spaces. Within food handling areas, fixtures will be lensed and gasketed. Within office and accessory spaces, fixtures will be high efficiency fluorescent.

Exterior lighting will have an appearance consistent with campus standards and will be selected to blend with the building facade. Exterior fixtures will utilize compact fluorescent or metal halide light sources; distribution patterns will be selected to minimize glare.

A programmable low voltage lighting control system will be used in all spaces except individual offices. Individual offices will be controlled with a combination of line voltage toggle switches and dual technology occupancy sensors as required by the Washington State Energy Code.

Exterior lighting will be controlled thru the building automation system.

Illumination Levels (Average Maintained)

- | | | |
|----|-------------------------|-------|
| 1. | Food Preparation | 50 FC |
| 2. | Offices | 40 FC |
| 3. | Conference Rooms | 35 FC |
| 4. | Storage, Toilets, Halls | 20 FC |

FIRE ALARM SYSTEM:

A U.L. listed, fully addressable fire alarm system consistent with campus standards will be installed.

INTRUSION ALARM SYSTEM:

A U.L. listed, fully addressable intrusion alarm system consistent with campus standards will be installed.

DATA AND VOICE INFRASTRUCTURE:

The existing Campus network system will be extended to the new facility. Copper phone cable to serve analog phones, fax functions, fire alarm, security and similar equipment will be extended from the Campus head end. A multi-mode fiber cable will be extended for data and voice over IP phones.

The system will be designed to serve all spaces utilizing Category 6 station cable.

SUSTAINABLE DESIGN/ LEED® CERTIFICATION

In July 2005, the State of Washington enacted Senate Bill 5509 requiring publicly funded major building projects to achieve LEED® “Silver Certification” at a minimum. To this end, an eco-charrette was completed as part of the pre-design process to look at alternative design opportunities for the building. The table below is a preliminary illustration of the probable LEED® credits attainable for this project to achieve LEED® Silver and possibly LEED® Gold.



LEED-NC V2.2 CREDIT SCORECARD

		Yes	?	No
Sustainable Sites		10 Points		
Prereq 1	Construction Activity Pollution Prevention	Y		
Credit 1	Site Selection	1		
Credit 2	Development Density & Community Connectivity		?	
Credit 3	Brownfield Redevelopment		?	
Credit 4.1	Alternative Transportation , Public Transportation	1		
Credit 4.2	Alternative Transportation , Bicycle Transportation & Changing Rooms	1		
Credit 4.3	Alternative Transportation , Low-Emitting & Fuel Efficient Vehicles	1		
Credit 4.4	Alternative Transportation , Parking Capacity	1		
Credit 5.1	Site Development , Protect or Restore Habitat		?	
Credit 5.2	Site Development , Maximize Open Space	1		
Credit 6.1	Stormwater Design , Quantity Control	1		
Credit 6.2	Stormwater Design , Quality Control	1		
Credit 7.1	Heat Island Effect , Non-Roof		?	
Credit 7.2	Heat Island Effect , Roof	1		
Credit 8	Light Pollution Reduction	1		
Water Efficiency		2 Points		
Credit 1.1	Water Efficient Landscaping , Reduce by 50%	1		
Credit 1.2	Water Efficient Landscaping , No Potable Use or No Irrigation		?	
Credit 2	Innovative Wastewater Technologies		?	
Credit 3.1	Water Use Reduction , 20% Reduction	1		
Credit 3.2	Water Use Reduction , 30% Reduction		?	

Energy & Atmosphere		5 Points		
Prereq 1	Fundamental Commissioning of the Building Energy Systems	Y		
Prereq 2	Minimum Energy Performance	Y		
Prereq 3	Fundamental Refrigerant Management	Y		
Credit 1	Optimize Energy Performance	3	3	
Credit 2	On-Site Renewable Energy		?	
Credit 3	Enhanced Commissioning	1		
Credit 4	Enhanced Refrigerant Management		?	
Credit 5	Measurement and Verification	1		
Credit 6	Green Power		?	

Materials & Resources		5 Points		
Prereq 1	Storage & Collection of Recyclables	Y		
Credit 1.1	Building Reuse , Maintain 75% of Existing Walls, Floors & Roof			N
Credit 1.2	Building Reuse , Maintain 95% of Existing Walls, Floors & Roof			N
Credit 1.3	Building Reuse , Maintain 50% of Interior Non-Structural Elements			N
Credit 2.1	Construction Waste Management , Divert 50% from Disposal	1		
Credit 2.2	Construction Waste Management , Divert 75% from Disposal	1		
Credit 3.1	Materials Reuse , 5%			N
Credit 3.2	Materials Reuse , 10%			N
Credit 4.1	Recycled Content , 10% (post-consumer + 1/2 pre-consumer)	1		
Credit 4.2	Recycled Content , 20% (post-consumer + 1/2 pre-consumer)		?	
Credit 5.1	Regional Materials , 10% Extracted, Processed & Manufactured	1		
Credit 5.2	Regional Materials , 20% Extracted, Processed & Manufactured	1		
Credit 6	Rapidly Renewable Materials		?	
Credit 7	Certified Wood		?	

Indoor Environmental Quality		13 Points		
Prereq 1	Minimum IAQ Performance	Y		
Prereq 2	Environmental Tobacco Smoke (ETS) Control	Y		
Credit 1	Outdoor Air Delivery Monitoring	1		
Credit 2	Increased Ventilation	1		
Credit 3.1	Construction IAQ Management Plan , During Construction	1		
Credit 3.2	Construction IAQ Management Plan , Before Occupancy	1		
Credit 4.1	Low-Emitting Materials , Adhesives & Sealants	1		
Credit 4.2	Low-Emitting Materials , Paints & Coatings	1		
Credit 4.3	Low-Emitting Materials , Carpets	1		
Credit 4.4	Low-Emitting Materials , Composite Wood & Agrifiber Products	1		

Credit 5	Indoor Chemical & Pollutant Source Control	1		
Credit 6.1	Controllability of Systems , Lighting	1		
Credit 6.2	Controllability of Systems , Thermal Comfort		?	
Credit 7.1	Thermal Comfort , Design	1		
Credit 7.2	Thermal Comfort , Verification	1		
Credit 8.1	Daylight & Views , Daylight 75% of Spaces	1		
Credit 8.2	Daylight & Views , Views for 90% of Spaces		?	

Innovation & Design Process		5 Points		
Credit 1.1	Innovation in Design	1		
Credit 1.2	Innovation in Design	1		
Credit 1.3	Innovation in Design	1		
Credit 1.4	Innovation in Design	1		
Credit 2	LEED® Accredited Professional	1		
Project Totals (pre-certification estimates)		40 Points		

Certified: 26-32 points **Silver:** 33-38 points **Gold:** 39-51 points **Platinum:** 52-69 points

ADDITIONAL LEED CONSIDERATIONS

Sustainable design for this project will focus on the energy efficiencies and reduction of food and water waste associated with the specific operations of the kitchen. A kitchen is an energy intensive operation and many components, such as refrigeration and cooking equipment, generate a significant amount of waste heat. The building design will focus on capturing and re-using this waste heat. Additionally, the kitchen equipment design will evaluate, and hopefully achieve, ways to reduce food waste and find ways to make composting of food waste possible. Utilization of grey water for certain building functions will be evaluated and could result in significant reduction in water use.

SUSTAINABLE SITES

Sustainable Site credit opportunities are discussed in Section 4 – Site Analysis.

WATER EFFICIENCY

Credit 1 – Water Efficient Landscaping. At least one point can be easily achieved with drought tolerant plants. Although there are irrigated areas on the campus, the systems are difficult to maintain and many are no longer in use.

Credit 2 - Innovative Wastewater Technologies. A “Pulper” system for processing dishwasher and disposal waste will be investigated. Grease interceptor sizing will be reviewed for potential reduction in size.

Credit 3.1 – Water Use Reduction – 20%. Water efficient fixtures, sprayers and associated systems will be analyzed.

ENERGY AND ATMOSPHERE

Credit 1 – Optimize Energy Performance. The goal of the lighting system design will be to achieve an average watts per square foot installed that is at least 11% better than the Washington State Energy Code allows. Tacoma Power has a program to assist commercial customers in identifying high efficiency food service equipment and offers rebate incentives. Although food service equipment falls under the category of process energy and would not be calculated using the ASHRAE/IESNA Building Performance Rating Method, improvements in process energy performance can be included using the alternative Exceptional Calculation Method.

Credit 2 – On-Site Renewable Energy. Of the possible on-site renewable electrical systems, the only feasible option is the use of photovoltaic panels. However, photovoltaic panels do not comply with the Campus Master Plan requirement that materials be historically compatible with the existing buildings so this option may not be acceptable to the Owner.

Credit 3 – Enhanced Commissioning. This credit be pursued as a significant benefit to the end users can be achieved through the additional commissioning activities. Although this credit is primarily associated with the mechanical system, additional requirements for commissioning of the low voltage lighting system will be incorporated.

Credit 5 – Measurement and Verification. Metering systems can be incorporated into the electrical distribution system to support achievement of this credit. This may be necessary to satisfy the Tacoma Power rebate requirements.

Credit 6 – Green Power. This credit requires 35% of total facility energy be purchased from green power sources for a minimum of two years. Tacoma Power does offer commercial customers the opportunity to purchase wind power through the Evergreen Options program but may not be able to provide 35% at this time. Tacoma Power is currently in the process of expanding the Evergreen Options program to comply with Initiative 937 which requires large utilities to obtain 15% of their energy from renewable resources such as wind or solar by 2020, so it may be possible to purchase 35% by the time this facility comes online.

Credit 6.1 – Controllability of Systems: Lighting. Individualized lighting controls will be provided.

MATERIALS AND RESOURCES

Credit 2.1 - Construction Waste Management - Divert 50% from Disposal. The specifications will require the contractor to divert waste.

Credit 2.2 - Construction Waste Management - Divert 75% from Disposal. This requirement will be reviewed during design for cost implications.

Credit 4.1 - Recycled Content -10% (post-consumer + ½ pre-consumer). The project team will verify this credit with selected building materials.

Credit 4.2 - Recycled Content -20% (post-consumer + ½ pre-consumer). The project team needs to verify this credit with selected building materials.

Credit 5.1 - Regional Materials -10% Extracted, Processed and Manufactured within 500 miles. The project team needs to verify this credit with selected building materials.

Credit 5.2 - Regional Materials -20% Extracted, Processed and Manufactured within 500 miles. The project team needs to verify this credit with selected building materials.

INDOOR ENVIRONMENTAL QUALITY

Credit 1 - Outdoor Air Delivery Monitoring. Research into employing a stack effect for natural ventilation with CO2 monitoring will be conducted during design, although it may be difficult with the volume exhaust air required for a kitchen.

Credit 2 - Increased Ventilation. This credit will be evaluated.

Credit 3.1 - Construction IAQ Management Plan - During Construction. The contractor will be required to implement this credit.

Credit 3.2 - Construction IAQ Management Plan – Before Occupancy. The contractor will be required to implement this credit.

Credit 4.1 - Low-Emitting Materials - Adhesives & Sealants. This credit will be specified.

Credit 4.2 - Low-Emitting Materials - Paints & Coatings. This credit will be specified.

Credit 4.3 - Low-Emitting Materials – Carpets. Credit is achievable with walk-off mats.

Credit 5 - Indoor Chemical & Pollutant Source Control. This credit can be accommodated in the design of the building.

Credit 6.1 - Controllability of Systems – Lighting. In a group facility like a kitchen, warehouse, the controllability only needs to be controlled by the group not the individual.

Credit 6.2 - Controllability of Systems - Thermal Comfort. In a group facility like a kitchen, warehouse, the controllability only needs to be controlled by the group not the individual.

Credit 7.1 - Thermal Comfort – Design. This credit should be possible. Conditions will be different for Staff at the cooking equipment.

Credit 7.2 - Thermal Comfort – Verification. The State or WSH can conduct the required user survey.

Credit 8.1 - Daylight & Views -Daylight 75% of Spaces. This credit should be achievable.

Credit 8.2 - Daylight & Views - Views for 90% of Spaces. There may be too much equipment to accomplish this.

INNOVATION IN DESIGN

All Innovation in Design credits should be reviewed and sought after.

INTERNATIONAL BUILDING CODE REVIEW:

CHAPTER 3: USE AND OCCUPANCY CLASSIFICATION:

OCCUPANCY GROUPS:

- Group B
- This is the main occupancy group; see incidental and accessory uses below.
- Group S-2 (Low hazard storage) includes all Commissary and similar functions

INCIDENTAL USE AREAS (TABLE 302.1.1):

- Storage Rooms greater than 100SF require 1-hour separation or fire extinguishing system.
- Note that with fire extinguishing system smoke separation is still required (302.1.1.1)

PROGRAM ANALYSIS 3-45:

ACCESSORY USE AREAS (SECTION 302.2):

- Accessory use areas not in table 302.1.1 and not Group H are not required to be separated if the accessory use area is less than 10% of the area of the floor on which it is located and does not exceed Table 503 values for such use group.
- Accessory assembly areas less than 750SF are not considered separate occupancies.

OCCUPANCY SEPARATIONS (SEE SECTION 302.3 AND TABLE 302.3.2):

- In general there is a 2-hour occupancy separation between type B and type A-3 occupancies with reduction to one hour permitted when sprinklers are provided. See note b. in table 302.3.2 for when occupancy separations are not required for storage areas within Group B
- Mixed Occupancy (302.3): If classified as a mixed occupancy building, the uses must be either Separated or Non-Separated and the allowable floor areas would be calculated accordingly:
- Non-Separated Uses (section 302.3.1): Required construction type shall be determined by applying height and area limitations for each use group to the entire building and the most restrictive type so determined shall apply to the entire building.
- Separated Uses (section 302.3.2): In each story, the building area shall be such that the sum of the ratios of floor areas of each use divided by the allowable area for each floor shall be less than one.

SUMMARY:

- Primary Occupancy is Group B with some accessory A-3 and A-2 use groups.
- The Commissary will be Group S-2 and it is considered a separate and distinct building for the purpose of determining area limitations, continuity of firewalls and the limitation on the number of stories.

-
- Based on construction Type I (see chapter 6 summary below), we anticipate that the building will be classified as Mixed Occupancy with Separated Uses because the A-3 and A-2 spaces fill more than 10% of the area of some levels and thus cannot be called accessory use to Group B. Any other occupancy groups classified as accessory or incidental use areas to the main occupancy group do not need to be considered different occupancy and only need to be separated with a fire barrier if required as defined in incidental use areas.

CHAPTER 4: SPECIAL REQUIREMENTS BASED ON USE AND OCCUPANCY:

No unusual requirements are anticipated.

CHAPTER 5: GENERAL BUILDING HEIGHTS AND AREAS:

Building area shall include exterior areas below projections of roofs or floors above (section 502.1):

- Allowable Height and Building Area (see Table 503)
- Assuming Construction Type I-B (refer to Chapters 3 and 6):

Maximum # stories:

- 11 stories for Group B

Maximum height: measured to average height of highest roof surface:

- 160 feet above "grade plane" for type I-B construction
- Grade Plane: Plane representing the average of finished ground level adjoining the building at exterior walls. With building set into hillside, the approximate average grade plane can be averaged from the southeast corner to the northeast corner of the building as those are the highest and lowest points of grade.
- Height and Area Modifications (Section 504 and Section 506):
- May increase maximum height by 20' and 1 additional story if protected with sprinkler system.
- May increase maximum areas per calculations as part of the general area modifications (Section 506.1) if protected with sprinkler system. This includes additions due to a frontage increase (Section 506.2).

SUMMARY

- For construction Type I-B:
- Maximum Allowable Building area (Group B):
 - Unlimited SF/floor
 - Maximum Number of Stories: 11+1story sprinkler modification = 5 stories max.
 - Max building Height: 160 feet +20 feet sprinkler modification = 180 feet.
 - The Building is within maximum allowable area, maximum number of stories and maximum allowable height for construction type I-B.

CHAPTER 6: TYPES OF CONSTRUCTION:

Anticipated Construction Type: Type I-B:

- Type I construction is a type of construction in which all building elements listed in Table 601 are of non-combustible materials.
- Fire resistance-rating requirements of building elements, Type I-B (see Table 601):
- Structural frame: 2 hours
- Bearing walls (interior and exterior): 2 hours
- Nonbearing exterior walls (per table 602): 1 hour (w/ min. fire separation distance of 10')
- Nonbearing interior walls: 0 hours
- Floor Construction: 2 hours
- Roof Construction: 1 hours

CHAPTER 7: FIRE RESISTANCE-RATED CONSTRUCTION:

This chapter describes materials and assemblies to be used when required to be built of fire-resistive rated construction by the code. Some fire rated construction to note:

- Stairway Enclosures 2 hr. when greater than 4 stories (see 1019.1)
- Area Separation 2 hr. (none anticipated)
- Shaft Enclosures (section 707) 1 hr. if less than 4 stories, 2 hr. if greater than 4 stories
- Protected Elevator Lobby Not required if building is sprinkler protected (707.14.1)
- Corridors See section 10.16 (not required if sprinkled)
- Occupancy Separation See chap 3 summary above
- Building Elements See chap 6 summary above
- Table 705.4 – Firewall fire-resistance ratings:
 - Groups B, and S-2 all require 3 hour rating for firewalls. Each portion of a building separated by one or more firewalls that comply with the provisions of this section shall be considered a separate building.
- Table 715.3 – Fire door and fire shutter protective ratings:
 - Firewalls and fire barriers with 3-hour rating require 3-hour rated doors
 - Firewalls and fire barriers with 2-hour rating require 1.5-hour rated doors
 - Shaft exit enclosures and exit passageways with a 1-hour rating require 1-hour rated doors
 - Other fire barriers with 1-hour rating require 0.75-hour rated doors
 - Corridor walls requiring a 1-hour rating require 20min rated doors
 - Exterior walls requiring a 2-hour rating require 1.5-hour rated doors
- 715.3.7 Fire doors shall be self-closing in accordance with this section

-
- 715.3.7.3 Requirements for automatic closing by actuation of smoke detector apply to the cross-corridor doors at exit stairs.

CHAPTER 8: INTERIOR FINISHES:

Wall and Ceiling Finishes: see section 803.1 for Class A, B, and C requirements for flame spread and smoke developed.

Flame Spread of finish materials per Table 803.5 for sprinklered buildings by occupancy group:

- Group B Group S-2
- Stairways: Class B Class B Class C
- Exitways: Class B Class C Class C
- Rooms: Class C Class C Class C

Interior floor finishes per section 804

CHAPTER 9: FIRE PROTECTION SYSTEMS:

Complying automatic sprinkler systems are defined in this chapter, and sprinklers are used as reason for a number of height and area modifications and other exceptions throughout the code.

Sprinklers are not required for occupancy Group B (See Section 903.2).

Sprinklers are only required for occupancy Group A-3 (See Section 903.2.1.3) if the A-3 fire area exceeds 12,000 SF or has an occupant load of 300 or is located on a floor other than level of exit discharge. This requires the buildings A-3 occupancy spaces to be sprinkled.

Sprinklers are only required for occupancy Group A-2 (See Section 903.2.1.2) if the A-2 fire area exceeds 5,000 SF or has an occupant load of 300 or is located on a floor other than level of exit discharge. This requires the buildings A-2 occupancy spaces to be sprinkled.

Sprinklers are required in occupancy Group S-2 (See Section 903.2.9)

It is our intention to equip the building with automatic sprinkler systems throughout.

CHAPTER 10: MEANS OF EGRESS:

Minimum height of egress path: 7'-0" throughout, 6'-8" minimum at stairs

Occupant Load determination (Section 1004): the largest load number calculated by both designed occupant use as well as occupant load calculated per values given by table 1004.1.2.

- Occupant Load Factors (Table 1004.1.2)
- Office & Business Areas: 100 gross
- Kitchens, commercial: 200 gross
- Storage Rooms: 300 gross

- Mechanical Rooms: 300 gross
- Do not sum up the floors. Each floor is independent of the other. (1004.4)

Egress width per person served (Table 1005.1)

Stairways 0.2" per person w/ sprinkler system, not less than 48" (1007.3)

Other egress components 0.15" per person w/ sprinkler system, not less than 44" at corridors

Door encroachment: no more than 7" when fully open (1005.2)

Accessible Means of Egress (1007.1): provides accessible route to an area of refuge, horizontal exit or public way (See section 1002) Accessible spaces shall have minimum of one accessible means of egress or two accessible means from a space required to have more than one exit. See also 1007.3 – an enclosed stair can be considered part of accessible means of egress and per

1007.3 exception #3, a 48" required clear width and a defined area of refuge at enlarged landings is not required if building is fully sprinklered.

Buildings with four or more stories (1007.2.1): One accessible means of egress shall be via a complying elevator when a floor is four or more stories above or below an exit discharge.

Areas of Refuge (1007.6): Sized to accommodate one wheelchair space of 30"x48" for each 200 occupants. When located within enlarged stair enclosure landings, the area of refuge shall not reduce the required exit width. A two-way communication device is required at the area of refuge (1007.6.3). Area of refuge is not required as noted in 1007.3 above.

Roof Stair: One stairway up to the roof is required in buildings 4 or more stories in height (1009.12) Roof stairway access is required through a penthouse (walls, floor and roof) complying with section 1509.2 (1009.12.1)

Egress through intervening spaces (1013.2): Only permitted when intervening space is accessory to the area served.

Common path of egress travel (1013.3): Maximum 75' travel before two means of egress are available.

Exit Access Doorways Required (Table 1014.1): Greater than 50 occupants requires two exit access doorways.

Exit Access and Travel Distance (Table 1015.1): With a sprinkler system, the maximum travel distance is 250 feet for A occupancy, 300 feet for B occupancy, and 400 feet for S-2 occupancy.

Corridors in Group B, Group A, and Group S occupancies shall be 1-hour rated without a sprinkler system or 0-hour rated with a sprinkler system (table 1016.1)

Maximum dead end corridors: 20 feet. 50 feet with a sprinkler system in Group B occupancy

Minimum Number of Exits (1018):

- Room or spaces with occupant load of 1-500 require access to 2 exits (Table 1018.1)

- Room or spaces with occupant load of 501-1,000 require access to 3 exits (Table 1018.1)
- Room or spaces with occupant load >1,000 require access to 4 exits (Table 1018.1)
- Occupied Roof shall have access to exits as required for stories (1018.1)
- Vertical Exit Enclosures (1019):
 - 2-hour rated when connecting greater than 4 stories
 - 1-hour rated when connecting less than 4 stories
 - Exterior walls of vertical exit enclosures shall be rated per 704 for exterior walls. Where non-rated or unprotected openings enclose the stair and are exposed to other parts of the building by less than 180degrees, the building exterior walls within 10 feet shall be rated to minimum 1-hour to a point 10 feet above top most landing or the roof line whichever is lower.
- Chapter 11: Accessibility

In addition to 2003 IBC and any Washington State amendments, it is also anticipated that the design team will discuss accessibility goals with the state that meet universal design standards that may be more stringent than required by any codes or regulations.

CHAPTER 12: INTERIOR ENVIRONMENT:

Applicable ventilation, temperature, lighting and sound transmission provisions.

CHAPTER 13: ENERGY EFFICIENCY:

Refer also to mechanical and electrical systems narratives.

Applicable codes & guidelines to be reviewed with authorities having jurisdiction:

- International Energy Conservation Code
- Washington State Energy Code
- Energy Life Cycle Cost Analysis (ELCCA)
- Leadership in Energy and Environmental Design (LEED®) per RCW 39.35 D
- Washington State Energy Code Minimum Building Envelope Requirements (Table 13-1)
 - Item Minimum Thermal Performance
 - Roofs R-21 or U=0.050
 - Opaque Walls R-19 or U=0.14
 - Opaque Doors U=0.60
 - Floors over unconditioned space R-19 or U=0.056
 - Slab on Grade R-10 or F=0.54
 - Glazing (30% to 45% of wall area) Max U=0.60 and Max SHCG=0.4

CHAPTER 14: EXTERIOR WALLS:

Applicable definitions: Stone (natural), concrete.

CHAPTER 15: ROOF ASSEMBLIES AND ROOFTOP STRUCTURES:

The enclosed mechanical area is considered a penthouse (Section 1509.2).

CHAPTER 16, 17 AND 18:

Structural requirements and standards. Refer to structural narrative.

CHAPTER 19, 20, 21, 22, 23, 24, 25, 26:

Building materials requirements and standards.

CHAPTER 27:

Electrical requirements and standards. Refer to electrical narrative.

CHAPTER 28: MECHANICAL REQUIREMENTS AND STANDARDS:

Refer to mechanical narrative.

CHAPTER 29: PLUMBING SYSTEMS:

Refer also to plumbing systems narrative.

Minimum number of Required Plumbing Facilities (Table 2902.1).

Table 2902.1 has been amended by the State.

- "Average" floor +/- 50,000 sf at 1 person/200 sf = 250 people
- Assume 125 men – requires 5 toilets (or 3 urinals + 2 toilets)
- 3 lavatories
- Assume 125 women – requires 5 toilets
- 3 lavatories

CHAPTER 30: ELEVATORS AND CONVEYING SYSTEMS

Hoistway Enclosure protection: see 3002.1.

Elevator car to accommodate ambulance stretcher required in buildings of 4 stories or more (3002.4).

Emergency Operations per section 3003.

Hoistway venting required per section 3004.

Elevator Machine Rooms per section 3006.

SECTION 4.0 - SITE ANALYSIS



4.1 Site Analysis

SITE EVALUATION:

SITE CONTEXT AND CHARACTER

The project site is the former location of North Hall, a patient ward building dating from the 1920's that was damaged beyond repair during the 2001 Nisqually Earthquake. Also known as Building 7, this ward building was at the end of its useful life when the earthquake struck, so the decision was made to demolish it. The recently updated Western State Hospital Campus Master Plan has identified this site as a desirable central location for activities that require outside vehicular deliveries and no direct patient access. The ten year Master Plan map is shown on the following page.

OWNERSHIP AND ACQUISITION

The site is owned by the State of Washington and is part of the Western State Hospital Campus. Therefore there are not ownership or acquisition issues to address.

JURISDICTION AND STAKEHOLDERS

The campus is located in the City of Lakewood. As part of the master planning process, an updated Master Use Permit is currently being prepared for submission to the City. The City is aware of this project and, to date, have expressed no reservations. The jurisdictions that will review the project are listed in the Stakeholders section of chapter 2.

The hospital Kitchen, Commissary, Pharmacy and Central Supply staff will be involved with the design of the facility and are supportive of the proposed location. Facilities and maintenance staff will be involved in analyzing traffic and delivery patterns to insure the access points to the facility are efficient and properly located.

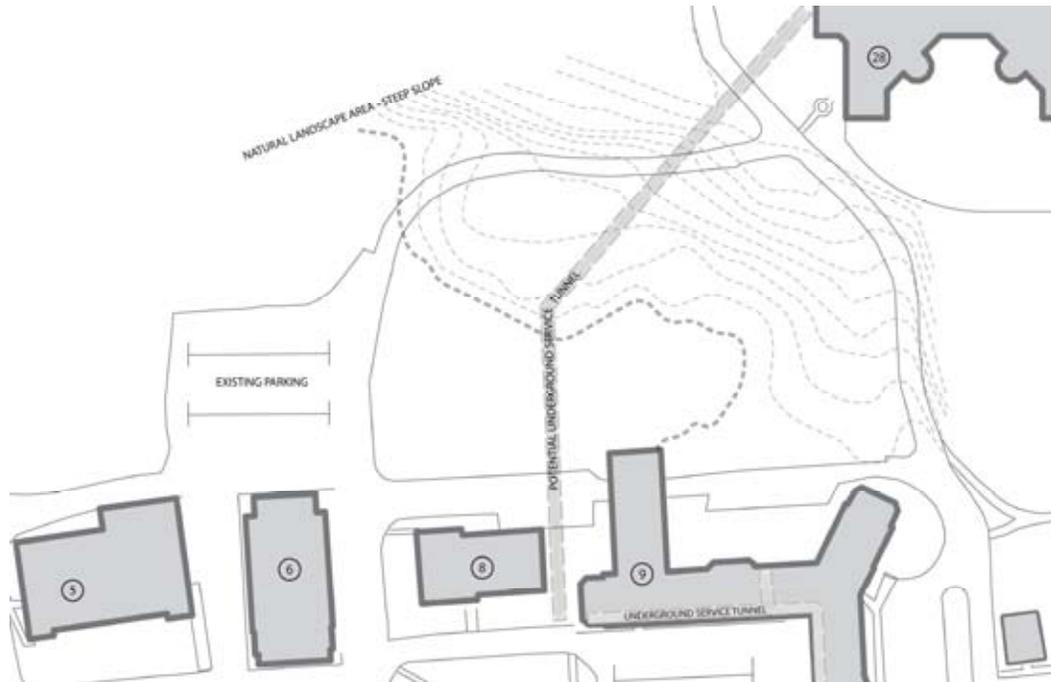
EASEMENTS

A boundary survey of the site, including utility easements, indicated no easements on or near the proposed site. As part of the demolition of North Hall (Building 7), the steam heating loop was relocated to the southwest edge of the proposed site.

LOCATION AND TOPOGRAPHY

Located at the north edge of the main campus area, the site slopes to the northeast with an approximate 25 foot drop in elevation across the site. Ringed by access roads, the topography north of the site slopes steeply into a ravine that contains a natural spring. Stormwater treatment will be required to insure that the stream at the bottom of the ravine is not negatively impacted.

In the area where North Hall (Building 7) was removed, there is a possibility that the fill that was placed will need to be over-excavated and replaced with structural fill material. Limited geotechnical investigation will be necessary after the building footprint is established. A site survey will be required prior to construction documents to confirm existing topography and confirm the locations of nearby utilities.



View to the south

SETBACK REQUIREMENTS

As the proposed site is located away from public right-of-ways, the only required setbacks will be to separate the new building from the existing Building 9 with either a fire wall or a gap between the buildings.

ADJACENT FACILITIES, SITE FEATURES AND NEIGHBORHOOD

The site is currently scrub grass and has a territorial view to the east and northeast. Existing brick buildings with tile roofs are located immediately to the south of the site. A newer CMU and brick ward building is located to the northeast. A treed ravine is located north and northwest of the site, with parking to the west.



*Building 9 drive portico
and exit stair.*



Building 28 to the northeast

GREEN SPACE AND NATURAL AMENITIES

There is an extensive green space to the east of the road bordering the east side of the site that also contains stormwater control features. That space will not be impacted by the new project. The building will be located away from the ravine to the north, which has exhibited unstable slopes in the past. Existing trees on the edge of the site will be preserved to the extent possible.



Building 9 to the southeast.

ENVIRONMENTAL ISSUES

In 2004, North Hall (Building 7) was removed from the site due to earthquake damage. During the demolition process, no contamination was encountered. There appear to be no wetlands on the site and there is no plan to conduct a wetland survey.

As part of the campus master planning process, a Master Use Permit will be submitted to the City of Lakewood. A SEPA checklist will accompany that submittal and should negate the need for additional environmental submittals for this project. Stormwater control and infiltration will be incorporated into the project.



*View of the site from the south.
The ravine north of the site can be
seen in the distance.*

PARKING AND ACCESS

Existing employees that currently park in the area of the proposed patient quadrangle will be relocated to an area outside the proposed quadrangle. There is an existing parking area on the north side of the site which could be expanded to accommodate the staff. Vehicular access is from the northeast, southeast and southwest sides of the site. The site is currently ringed with an access road that will most likely be maintained and improved.

Truck and vendor delivery will most likely continue to access the site from the west, although the site location allows for access from the northeast area of the campus.

LEED CREDIT SUMMARY

The site easily complies with the following LEED Sustainable Sites credits:

Credit 1 - Site Selection. The site is not on or adjacent to flood plains or endangered species habitat.

Credit 2 - Development Density and Community Connectivity. The hospital is located near residential housing and on several bus lines.

Credit 4.1 – Alternative Transportation – Public Transportation. The campus already meets this requirement.

Credit 4.2 - Alternative Transportation – Bicycle Transportation and Changing Rooms. WSH already has a number of employees that bicycle to work. There is a shower facility in Building 9.

Credit 4.2 - Alternative Transportation – Parking Capacity. WSH currently has designated parking for carpools on campus. Additional painting and signage will satisfy this credit.

Credit 5.1 - Site Development Protect or Restore Habitat. The demolished morgue site to the northwest of the project site should be added into the project scope. This area should be restored to native habitat. The landscaping around the new building should be composed of maintainable vegetation to discourage raccoons and other animals near the building. The project team will look at building siting options to achieve this credit.



View of the site from the northwest.

Credit 6.1 - Stormwater Design – Quantity Control. Good soil infiltration is anticipated.

Credit 6.2 - Stormwater Design – Quality Control. To the north east of the project site, and west of Building 28, there is a storm water detention pond that drains into the ravine. If infiltration rates don't meet capacity, then the project team will study a similar approach.

Credit 7.1 – Heat Island Effect – Non-Roof. City of Lakewood requirements will be reviewed to determine if this credit is possible. (Post meeting, the City was contacted and WSH is in a public zoning district that does not have specific development requirements for permeability, but will be reviewed by the planning department to determine if it meets similar landscape screening requirements for a commercial building.)

Credit 7.2 – Heat Island Effect – Roof. A design strategy to achieve this credit is to use a membrane roof similar to the Laundry (Building 5).

Credit 8 – Light Pollution Reduction. “Dark sky” compatible exterior fixtures will be used to achieve this credit.

It is anticipated that the new facility will have significantly less impervious surfaces than that of the former Building 7.



View of the site from the northeast.

REGULATORY FACTORS

The site is currently zoned “Public and Semi-Public Institutional”. The new facility complies with the current zoning of the campus.

An updated Master Use Permit (MUP) package is currently being prepared for submittal to the City of Lakewood. The new Kitchen / Commissary building is indicated in the new package, previous MUP updates have indicated the desire to relocate these existing functions on the campus.

All environmental regulations will be addressed as part of the design. Adjacency to the ravine to the north, stormwater management and exhaust from kitchen production will be the most critical items that will need to be addressed.

Currently, the 2006 edition of the International Building and Fire Codes are in effect.

ENERGY CONSERVATION

The facility will be designed to exceed the Washington State Energy Code. Every effort to meet or exceed “Energy Star” recommendations will be incorporated.

SECTION 5.0 - PROJECT BUDGET ANALYSIS



5.0 Project Budget Analysis

GENERAL PROJECT DESCRIPTION:

This study is for the replacement of the Kitchen and relocation of the Commissary functions on the Western State Hospital campus. The combined development is intended to provide:

- Remove the Kitchen and its receiving and dispatching traffic from the center of the campus.
- Increase the quality and variety of food and nutrition available to the patients, contributing to patient wellbeing and recovery.
- Relocate the Commissary functions from the center of the campus.
- Allow for the establishment of a secure Patient Treatment Mall at the center of the campus.
- Establish a Food Service serving WSH and potentially other State institutions in Pierce County.
- Lower per-meal costs through reductions in energy use, food waste, maintenance and FTE's.

There are 102 dietary staff on the campus, 74 of which are located on the wards to serve patient needs. The analysis of staffing levels and cost in this study was limited to the kitchen and commissary operations. The costs associated with several options for providing food service were analyzed as part of this study. Estimates are initially focused on food service options with later project alternatives exploring the advantages of co-location of Central Kitchen and selected Commissary facilities. Those estimates indicated that a Cook/Blast Chill food service operation co-located with selected Commissary functions will provide the best overall functional solution to the hospital objectives for patient treatment and recovery.

The first alternative that was studied, referred to as Option A, co-located the bulk Commissary (Building 11), Inventory Control (Building 32), Pharmacy and Central Supply (Building 13) with the new kitchen. In studying the different commissary functions on the campus, it became apparent that co-locating the bulk Commissary and Inventory Control functions away from the edge of the campus would increase truck and delivery traffic in close proximity to areas that are occupied by patients.

Therefore a second alternative, Option B, was developed that would reduce truck traffic at the campus center. This option co-locates the kitchen with the Pharmacy and Central Supply (Building 13) functions at a new facility. This option includes a recommended future phase to relocate the bulk Commissary (Building 11) and Inventory Control (Building 32) to a new building located near the west campus entry. Both options address the requirements of accommodating related warehousing and distribution centers identified during the study as requiring relocation.

Option A: Co-Locate Kitchen, Commissary, Inventory Control, Pharmacy and Central Supply at new building

This option, combining all of the Commissary functions within the kitchen building, is the most expensive. The original funding request to the legislature in 2006 (C-2 form), requested \$10,470,000 to construct a 25,000 square foot facility. Option A would require a 64,841 square foot building with a project cost of \$25,493,078, exceeding the original budget request. Option A would move patient oriented functions out of the proposed patient treatment mall, however the bulk Commissary functions currently located in Building 11 and Inventory Control functions at Building 32 do not interfere with the initial mall plan, and will allow the mall to be accomplished on the earliest possible schedule.

Option B: Co-Locate Kitchen, Pharmacy and Central Supply at new building

Since locating the bulk Commissary and Inventory Control functions near a main campus entry to handle the higher vendor delivery traffic will reduce truck at the campus center, this recommended option co-locates the patient oriented Commissary functions with the kitchen, while relocating the bulk Commissary and Inventory Control to the west end of the campus.

Option B represents a 35,496 square foot building at a cost of \$17,960,078. This option will accomplish the programmatic needs for each of the three relocated functions on a single centrally located site and further the campus plan to construct the outdoor patient treatment mall.

To provide funding flexibility, a separate estimate is provided in this report for a first phase of construction to build the Kitchen and Food Service Commissary without the Pharmacy and Central Supply. The area model of the "Phase 1" kitchen building includes common core areas that would accommodate future growth. This building would be 16,199 square feet at a total cost of \$11,778,078.

Option B – Future Commissary Building at West Campus Entry

This study has treated the relocation of the bulk Commissary as a future project. By separately locating the bulk Commissary (Building 11) and Inventory Control (Building 32) in a separate building at the west campus entry, a large volume pre-engineered building can be budgeted as a future appropriation. This building would be 29,345 square feet and will cost \$8,324,000.

OUTLINE SPECIFICATIONS

Uniformat Coding Structure Level 2

The following represents the basic construction systems to be used in the all of the alternatives being examined except as noted:

A10 FOUNDATIONS

See Structural Systems (6) of Section 3 Program Analysis of this report.

- Concrete spread footings or augercast piles

A20 BASEMENT CONSTRUCTION

See Structural Systems (6) of Section 3 Program Analysis of this report.

- Slab on grade with under slab drainage system

B10 SUPERSTRUCTURE

See Structural Systems in Section 3 Program Analysis.

- Steel framing with metal deck and concrete slabs at the office buildings
- Concrete retaining walls below grade
- Concrete columns and slabs at the parking garage
- Concrete shear walls

Engineered Metal Building for bulk Commissary in Option B – Future project

B20 EXTERIOR CLOSURE

See Architectural Systems of Section 3 Program Analysis.

- Brick and Precast Concrete
- Prefinished Metal Panels
- Insulating glass

Engineered Metal Building for bulk Commissary in Option B – Future project

B30 ROOFING

See Architectural Systems of Section 3 Program Analysis.

- Engineered Metal Building for bulk Commissary in Option B – Future project

C10 INTERIOR CONSTRUCTION

See Architectural Systems of Section 3 Program Analysis.

C20 STAIRWAYS

See Architectural Systems of Section 3 Program Analysis.

C30 INTERIOR FINISHES

See Architectural Systems of Section 3 Program Analysis.

D10 CONVEYING SYSTEMS

See Elevators of Section 3 Program Analysis.

D20 PLUMBING SYSTEMS

See Plumbing Systems of Section 3 Program Analysis.

D30 HVAC SYSTEMS

See Mechanical Systems of Section 3 Program Analysis.

- Mechanical rooms located below grade with fresh air intakes located to avoid contaminated air.
- Connect to campus Steam Plant.

D40 FIRE PROJECTION SYSTEMS

See Plumbing Systems of Section 3 Program Analysis.

D50 ELECTRICAL SYSTEMS

See Electrical Systems of Section 3 Program Analysis.

E10 EQUIPMENT

See Electrical Systems of Section 3 Program Analysis.

E20 FURNISHINGS

New furnishings are assumed to be provided outside of the construction contract.

F10 SPECIAL CONSTRUCTION

F20 SELECTIVE DEMOLITION

Abatement and demolition as required for the project is included.

G10 SITE PREPARATION

See Section 4 Site Analysis of this report.

G20 SITE IMPROVEMENTS

See Section 4 Site Analysis of this report.

G30 SITE MECHANICAL UTILITIES

See Mechanical Systems (7) of Section 3 Program Analysis of this report.

G40 SITE ELECTRICAL UTILITIES

See Electrical Systems (9) of Section 3 Program Analysis of this report.

CONSTRUCTION COST ESTIMATES:

C-100 Construction cost estimate forms for Options A and B, along with the proposed future bulk Commissary are included in the Appendix.

Option A: The total project cost for this option is \$25,493,078 with a MACC of \$19,940,000 and will entail a 64,841 GSF of Kitchen, Pharmacy, Central Supply, bulk Commissary and Inventory Control functions constructed on the former site of North Hall (Building 7).

Option B: The total project cost for this option is \$17,960,078 with a MACC of \$12,639,000 and will entail a 35,496 GSF Kitchen, Pharmacy and Central Supply patient oriented functions constructed on the former site of North Hall (Building 7).

Option B – Phase 1 (construct the kitchen with foodstuff commissary). The total project cost to construct the kitchen facility with adequate foodstuff storage is \$11,778,078 with a MACC of \$6,968,000.

Option B (future bulk Commissary): The total project cost for this future project is \$8,324,000 with a MACC of \$7,201,000, and will be a 29,345 GSF building housing bulk Commissary support oriented functions, constructed in a second phase at a future date adjacent to the west campus entry.

TOTAL PROJECT COSTS (CONSTRUCTION, DESIGN & PROJECT MANAGEMENT):

The following is a summary of the total project costs as shown on the OFM C-100 forms included in the Appendix for each of these alternatives. The total project cost includes design and construction of capital improvements. The project costs have been escalated to represent anticipated inflation to the mid-point of construction. Options A and B are escalated two years with the future bulk Commissary in Option B escalated four years.

Total project costs exclude the costs of ongoing operations (e.g. utilities and custodial services). These operational costs are included on the OFM Form C3 and in the Life Cycle Costs section below.

SUMMARY OF ALTERNATIVE TOTAL PROJECT COSTS

The square feet, for each of these options, differs. For Option A the total square feet of new Kitchen/Commissary on the former site of North Hall (Building 7) would be 63,803 gross square feet, for Option B it is 34,458 with a future 29,345 square foot bulk commissary. The project cost per square foot for the new facilities (excluding the internal storage functions but including food service equipment) for each option is:

Option A:	\$350 per square foot for Kitchen. \$220 per square foot for Support Oriented bulk Commissary, Patient Oriented Pharmacy and Central Supply.
Option B:	\$350 per square foot for Kitchen. \$264 per square foot for Patient Oriented Pharmacy and Central Supply.
Option B-Phase 1:	\$350 per square foot for Kitchen. \$350 per square foot for core space to accommodate future additions.
Option B-Future:	\$200 per square foot for future Support Oriented bulk Commissary.

LIFE CYCLE COSTS:

This section summarizes the findings on the OFM Form C3's that are included in the Appendix. The following definitions have been used in the Life Cycle Analysis.

Discount or Interest Rate – Calculation of present worth is often referred to as discounting. Any reference to the discount rate means either the minimum acceptable rate of return for the owner for investment purposes or the current prime or borrowing rate of interest. Whichever rate is used in the calculations, it must be clearly identified and consistent for each alternative studied. For purposes of this study we will use the Office of the State Treasurer's recommended discount rate of 4.59796% over a 50-year period

Escalation – Escalation has a significant impact on the life cycle cost and is accommodated in the life cycle cost by expressing all costs in terms of constant dollars. For example, if the life cycle cost is being conducted in 2008 dollars, then the purchasing power of a 2008 dollar should be used throughout the analysis. When the comparative analysis includes items with equal escalation rates, the effect of escalation will be canceled out.

Operating Costs – Include costs such as utilities, custodial, repairs and maintenance, management services and a capital replacement reserve.

Salvage (Residual) Value – When evaluating alternatives with unequal useful lives during the economic life cycle period, a salvage or residual value must be established. The salvage value is the estimated value (constant baseline currency) of the system or component at the end of the economic life cycle or study period. The value of a system at the end of its useful life is normally equal to its salvage value less the cost incurred for its removal or disposal.

The following is a comparison of the two alternatives on a cash basis. This demonstrates how much will be expended on the alternatives over a 50-year period.

	Cash Basis Comparison			
	Option A	Option B	Option B Phase 1	Option B Future
	Co-located Kitchen Commissary Pharmacy Central Supply Single Phase	Co-located Kitchen Pharmacy Central Supply Single Phase	Kitchen Only Multiple Phase	Separately Located Future Commissary Future Phase
Life Cycle Costs				
Initial Project Cost – Escalated - Include Systems Replacements @ 20 and 40 years	\$44,867,817	\$31,609,737	\$20,729,417	\$14,650,240
Operating Costs	\$535,653,986	\$517,439,766	\$498,712,949	\$79,175,942
Residual Value (90% of value recognizing "sales cost")	-\$41,216,537	-\$29,741,889	-\$19,504,497	-\$13,784,544
Net Recognizing Salvage Value	\$538,305,266	\$519,307,614	\$499,937,869	\$80,041,638

The following is a comparison of the two alternatives on a Present Worth Basis. This adjusts the cash expended for the time value of money, using the Office of the State Treasurer’s recommended discount rate of 4.59796% over a 50-year period.

	Present Worth Comparison			
	Option A	Option B	Option B Phase 1	Option B Future
	Co-located Kitchen Commissary Pharmacy Central Supply Single Phase	Co-located Kitchen Pharmacy Central Supply Single Phase	Co-located Kitchen Pharmacy Central Supply Multiple Phase	Separately Located Future Commissary Future Phase
Life Cycle Costs				
Initial Project Cost - Escalated	\$25,493,078	\$17,960,078	\$11,778,078	\$8,324,000
Operating Costs	\$195,966,421	\$182,293,791	\$169,703,941	\$33,327,935
Residual Value (90% of value recognizing "sales cost")	-\$4,221,654	-\$2,974,189	-\$1,950,450	-\$1,378,454
Net Recognizing Salvage Value	\$217,237,845	\$197,279,680	\$179,953,569	\$40,273,481

FINDINGS

A comparison of the first and replacement cost of the options indicates that on a cash basis Option A is \$61.05 million less expensive over the facilities lifetime than the combination of the Option B and Option B – Future scenarios. Constructing the facility in three phases (kitchen with Pharmacy and Central Supply addition and future bulk Commissary) would cost almost double the cash basis cost of Option A. Note that since there is no guarantee the future bulk Commissary would be built, Option B does not show the reduction on FTE that the future project would gain, skewing the total life cycle cost for the combined Option B projects.

On a “present worth basis” Option A is \$20.32 million more cost effective than the combined Option B and future project. Option A is \$168.73 million more cost effective than three-phase construction of the kitchen, Pharmacy and Central Supply addition and future bulk Commissary.

Looking at only the base Options A and B without the future bulk Commissary project, the “cash basis comparison” indicates that Option B has a 3.5 percent lower cost over the life of the building due to higher FTE requirements, and on a “present worth basis” Option B is more cost effective by 9.2 percent.

The operative element may be the functional considerations of limiting outside delivery truck penetration into the campus. The location of the larger area of bulk warehouse functions near the west entry point to the campus should swing the decision to Option B. This would, in the end, represent the highest value to the Western State Hospital campus.

SECTION 6.0 - MASTER PLAN AND POLICY COORDINATION



6.0 Master Plan and Policy Coordination

STATE POLICY

The draft 2007 Master Plan for Western State of Hospital continues the vision of the previous Master Plan and provides a set of principles and policies that will guide the decision-making process for major development or redevelopment facilities on the Western State Hospital Campus.

STRATEGIC PLAN BACKGROUND

The censuses of Mental Health Division's three psychiatric hospitals are increasingly affected by a major, long-term program reform which began with the Mental Health Reform Act, SB 5400, that was enacted in the 1989 Legislative Session. That trend has been downward over time, predictable over the long run, but not as to time or amount. The state hospitals now have fewer patients, but patients with higher medical and psychiatric acuity. They are treated with a Rehabilitative Model that requires more square footage, somewhat higher staffing per patient, and much greater secure outdoor and activities orientation.

MASTER PLAN – RELEVANT TENETS

State hospitals must serve those patients considered too acute or too dangerous for community-based services: Chapter 205, Laws of 1989 (2SSB 5400), mandate that state hospitals serve the most complicated long-term care patients. (See the Mental Health Division 2006-2011 Strategic Plan at http://www1.dshs.wa.gov/pdf/hrsa/mh/Strategic_Plan_2006.pdf). Persons receiving care at these facilities show an increasing acuity due to physical and psychiatric impairments. This requires a higher staff to patient ratio, higher square footage space needs, and increased space for on-site rehabilitation services. Two other statutes are expected to continue to increase the count of hospital patients likely to cause serious harm. Chapter 297, Laws of 1998 (2SSB 6214), encourages the courts to consider hospital commitment for a misdemeanor who has both a mental disorder and a history of inflicting serious harm. As a result of Chapter 214, Laws of 1999 (SSB 5011), a prisoner in discharge process who has a mental disorder, chemical abuse problems, and a history of inflicting serious harm may be assigned to the state mental health system. These challenging populations raise issues of facility configuration and hardening and proscriptions of movement, in addition to internal and external safety features.

Preservation and Renovation: The state hospitals are a key component of the state mental health system. Preserving these assets, renovating them for current use, and re-fitting them for evolving needs is a significant part of the program's capital administration.

Continue to evolve toward a rehabilitation model: In the spirit of Chapter 205, Laws of 1989 (2SSB 5400), state hospitals continue to evolve toward a rehabilitation model as distinct from a medical model of treatment. New lines of psychotropic medications have enabled large numbers of patients to be discharged from the hospital and to participate more fully in therapeutic activities while in the hospital. The fundamental importance of access to various levels of indoor and outdoor activity - recreational, pre-vocational, and vocational - is becoming increasingly more apparent in the speed of recovery and the permanence of improvement of hospitalized patients.

Rehabilitation Model: For the civilly-committed populations, provide the facilities and grounds that support the hospital's increasing commitment to a rehabilitation model. A medical model seeks to restore the patient to their pre-crisis condition. A rehabilitation model seeks to go much further: to return patients to the community with an ability to live as independently as possible, including self-supporting as possible. This requires facilities and grounds for increased patient activities, including freedom of movement with a secure and safe environment. A rehabilitation program builds on their strengths rather than focusing on their illnesses as a general hospital would do. This requires a mix of use of facilities and outdoor space. Recreational, pre-vocational, and vocational outlets are increasingly more apparent in the speed of recovery and permanence of improvement of hospitalized patients. It includes a patient quadrangle at Western State that would be safe both inside and outside with less or minimal need for staff supervision, and a more active, activities-based recreational outside program at Eastern State Hospital, improving access to patios for patients on secure wards, and greenhouses at both state hospitals.

Ancillary Services: Assure effective and efficient provision of ancillary services for increasingly clinically complex patients. As the problems and treatments of patients become more differentiated, there is an increasing impact on the facilities and equipment in ancillary services such as pharmacy, laboratory, food service, laundry and plant maintenance. It is important to provide these in an efficient and effective manner.

MASTER PLAN – EVALUATION CRITERIA

The following are criteria to evaluate future projects as to their relevance in fulfilling the objectives of the Master Plan for Western State Hospital – 2007.

1. Provide pedestrian friendly, patient oriented central campus/quadrangle.
2. Phase construction projects with minimal hospital disruption.
3. Project should be responsive to Pierce County and the City of Lakewood anticipated growth management issues. It is anticipated that this Master Plan and county/city involvement and review at this time will greatly streamline the permit processes that are associated with future projects.
4. Project should provide clear campus way finding.
5. Project should be responsive to the following stakeholders:
 - a. Western State Hospital
 - b. State Legislature
 - c. Local Jurisdiction
 - d. Local Community and Businesses
 - e. Department of Social and Health Services Mental Health Division
 - f. Child Study and Treatment Center
 - g. Oakridge Community Facility
 - h. Lakewood Fire Department
6. The Project should provide a safe and secure campus.

7. Ancillary Services should be located outside of secure Patient Treatment Mall. Provide for an organized infrastructure corridor.
8. Provide additional physical and recreational opportunities to patients which are pedestrian accessible.
9. Accommodate anticipated patient population.

With regard to Master Plan Objective 1: Relocation of the Kitchen and Commissary facilities from the present Buildings # 11, 13 and 16 will remove vehicular traffic associated with these intensive functions from the center of the campus defined by the main campus structures. This will free this area for safer pedestrian circulation.

Objective 2: The preferred site for the Kitchen/Commissary is current vacant and somewhat removed from active areas on the campus. It can be approached directly from 3 directions and efficiently use 4 campus entrances for the construction and operations access.

Objective 3: The 2007 WSH Campus Master Plan has identified the former site of Building #7, North Hall as a future Kitchen/Commissary Building. The City of Lakewood is currently reviewing the Master plan as the basis for future projects at Western State Hospital. This Pre-design is examining the favorability of concepts consistent with what the City of Lakewood will expect to see as future work at the institution.

Objective 4: Establishment of a secure central pedestrian patient treatment mall and the exclusion of vehicular traffic will establish a perimeter vehicle circulation route within the campus. The arrangement of campus service components along this route will be a simple and clear wayfinding plan that allows ingress and egress traffic to easily find and negotiate the patterns that most efficiently serve their varied needs and routes on and off campus.

Objective 5: As stakeholders each of the named entities bring standards and in many cases impose a separate review process on the conduct of projects within their jurisdiction. The processes employed in the conduct of the design of the Kitchen/Commissary will be formed on the premise that the best outcome will be one that springs the cooperative integration of the overlapping requirements of all stakeholders. To that end the designers will be directed to understand all requirements of the project as represented by stakeholder interests prior to beginning the design. Early meetings in the Pre-design and subsequent design steps will be conducted with most stakeholder identified, others such as the State Legislature will be represented by the laws and rules implemented and followed in the design solutions.

Objective 6: Safety and security of campus employees and residents will remain a paramount criteria in evaluating all aspects of the plans generated by the design processes conducted on behalf of this project.

Objective 7: The primary motivation of this project is the implementation of a Secure Patient Treatment Mall.

Objective 8: By creating a Secure Patient Treatment Mall patients are given the opportunity to pursue a greater variety of self selected recreational opportunities that can be offered in a larger secure exterior setting.

Objective 9: New Food Service and Commissary facilities can be created in a way that can be expanded and contracted as the facilities being served vary in population.

STATE CODES, STANDARDS AND GUIDELINES

Application of Revised Code of Washington

There are a number of Revised Code of Washington codes applicable to this project. Highlighted here are those with a unique applicability to this project:

- RCW 39.04.330 Use of wood products -- Compliance with chapter 39.35D RCW.
- RCW 39.35.050 Life-cycle cost analysis – Guidelines
- RCW 43.01.091 Departments to share debt service costs.
- RCW 43.19.668 Energy Conservation – Legislative Finding – Declaration
- RCW 43.19.682 Energy conservation to be included in landscape objectives.
- RCW 43.34.040 Buildings – Erection -- Improvements

WESTERN STATE HOSPITAL CAMPUS DESIGN GUIDELINES

Section C of the General Requirements section of the “General Administration Facilities Design Guidelines and Construction Standards” (March 2003) states:

Consultants are required to comply with all applicable codes and ordinances including Title 51 of the Washington Administrative Code (WAC) and the Americans with Disabilities Act. The Western State Hospital Campus is located within the City of Lakewood and the Lakewood Building Official is the Authority Having Jurisdiction (AHJ) for most building related issues. The Lakewood Fire Marshall is the AHJ for fire protection, alarm and life-safety issues. Electrical Inspection is performed by the City of Lakewood.

HIGH PERFORMANCE BUILDING GUIDELINES

The High Performance Building (HPB) Design Guidelines were developed to guide the development of buildings that the state might one day own. Among the HPB guidelines, those most applicable to the proviso provisions are:

- Limit number of interior columns
- LEED® Silver designation
- Include alternative transportation amenities such as bike lockers, shower facilities, carpooling resources, nearby bus stops, etc.
- Follow site development practices to limit water use and stormwater runoff
- Minimize heat islands

SUSTAINABILITY

According to Engrossed Substitute Senate Bill 5509 – Related to High Performance Green Building, state facilities will now be designed and built to the LEED® Silver standard. LEED® is a Green Building Rating System developed by the US Green Building Council. The bill has now been transferred into statute at RCW 39.35.D. The pertinent sections in RCW 39.35D reads as follows:

39.35.D 030 (1) All major facility projects of public agencies receiving any funding in a state capital budget, or projects financed through a financing contract as defined in RCW 39.94.020, must be designed, constructed, and certified to at least the LEED® silver standard. This subsection applies to major facility projects that have not entered the design phase prior to the effective date of this section and to the extent appropriate LEED® silver standards exist for that type of building or facility.

Sustainable design and construction promotes building systems, materials and methods that achieve environmental quality, economic vitality, and social benefits during construction and during the ongoing operation of the buildings. The entire lifecycle of the building is considered including operation and demolition.

A GA Pre-Design/Schematic QA Submittal and associated forms and information will be submitted after an "integrated design workshop." A LEED® Checklist will be prepared. This submittal includes an Environmental Design Considerations form and LEED® Checklist along with the GA LEED® QA Submittal.

SECTION 7.0 - FACILITY OPERATIONS AND
MAINTENANCE REQUIREMENTS



7.1 Assumptions

The cost to operate and maintain a building throughout its useful life will far exceed its initial design and construction cost. Expenditures related to salaries and health of employees working will exceed the operations and maintenance costs.

The forecasted inflation applied to the 2007 base operating and staffing costs are:

Inflation Assumptions	Annual Inflation Rate (%)
Utilities	3.80%
Custodial	3.23%
Maintenance	3.02%
Security	2.09%
Property Taxes	0.00%
Insurance	2.90%
Parking Costs	2.90%
Tenant Improvement Reserve/Payments	4.00%
Capital Replacement Reserve	4.00%
Management Fees	2.99%
Added Operational Staff Cost (in included in categories above)	2.09%
Operational Savings from Alternative (can be 0.00%)	0.00%
Building Value	4.00%

HIGH PERFORMANCE LEED SILVER CERTIFIED BUILDING

This project will be required to achieve a Silver Rating based on the Leadership in Energy and Environmental Design (LEED) rating system. In the rigor of achieving this rating there is the opportunity to explore interrelationship among the building siting, building function, building systems, and design elements that can result in substantial savings in energy, water and sewer usage compared to a building designed to minimum code standards. The goals of a high performance building can lead not only to lower operating expenses through reduced utility costs, but also to increased staff productivity.

This study targets a reduced energy cost of 25% and reduced water usage of 20% compared to the design standards set forth by LEED.

7.2 Operating Costs

A. STAFFING COSTS

Western State Hospital's staff operates and maintains the equipment, systems and buildings that provide the dietary, pharmacy and commissary services for the patient population. These existing services currently function in facilities that are inefficient and poorly configured for their use.

Option B provides the opportunity for the Kitchen, Pharmacy and Central Supply to be designed to take advantage of state of the art technology to increase efficiency, capacity and flexibility while reducing full time employees. The future bulk Commissary can be designed with computerized inventory control and tracking systems that will reduce the full time employees required to receive, track and distribute support oriented supplies.

STATUS QUO

<u>Service</u>	<u>FTE</u>	<u>Salaries & Benefits (2011)</u>
Dietary	28.6	\$1,019,364
Pharmacy	36.5	\$2,932,014
Central Supply and Bulk Commissary	20.0	\$869,121

PROPOSED OPTIONS A AND B

Both Options A and B would result in the following changes in FTEs, with the exception that Option B delays the reduction in Bulk Commissary employees levels until that future building is funded and constructed.

<u>Service</u>	<u>FTE</u>	<u>Salaries & Benefits (2011)</u>
Dietary	30.8	\$1,091,168
Pharmacy	36.5	\$2,932,014
Central Supply and Bulk Commissary	17.0	\$761,906

DIETARY SERVICES SALARIES – STATUS QUO

The status quo and proposed numbers of FTEs were analyzed based on an annual salary for each position.

		Annual Salaries & Benefits (2007)	Totals
Dietary Services Salary Cost Proposed	101.2		\$3,239,295
Dietary Manager	1.0	\$77,314	\$77,314
Secretary Supervisor	1.0	\$40,692	\$40,692
Office Assistant 3	3.0	\$32,808	\$98,424
Warehouse Operator 4	1.0	\$40,692	\$40,692
Warehouse Operator 2	1.0	\$33,588	\$33,588
Warehouse Operator 1	1.0	\$31,332	\$31,332
Meatcutter 1	1.0	\$36,888	\$36,888
Food Manager 3	1.0	\$46,092	\$46,092
Food Service Supervisor 1	4.0	\$37,800	\$151,200
Food Service Worker Lead	4.0	\$31,332	\$125,328
Food Service Worker 1	62.1	\$29,904	\$1,860,029
Cook 3	3.0	\$36,036	\$108,108
Cook 2	4.0	\$35,220	\$140,880
Cook 1	14.0	\$32,052	\$448,728

DIETARY SERVICES SALARIES – PROPOSED

Note there are 74 dietary FTE staff that work on-ward distributing food to patients at both mealtime and at other snack times during most hours. Although the 19 ward kitchen and serving areas were all surveyed, no changes to staffing on-ward is expected. These FTE's were not included in the salary analysis in this report.

		Annual Salaries & Benefits (2007)	Totals
Dietary Services Salary Cost - Proposed Option A	30.8		\$1,091,168
Dietary Manager	1.0	\$77,314	\$77,314
Warehouse Operator 4	1.0	\$40,692	\$40,692
Warehouse Operator 2	1.0	\$33,588	\$33,588
Warehouse Operator 1	1.0	\$31,332	\$31,332
Meatcutter 1	1.0	\$36,888	\$36,888
Food Manager 3	1.0	\$46,092	\$46,092
Food Service Supervisor 1	1.0	\$37,800	\$37,800
Cook 3	3.0	\$36,036	\$108,108
Cook 2	4.0	\$35,220	\$140,880
Cook 1	16.8	\$32,052	\$538,474

PHARMACY SERVICES SALARIES – STATUS QUO AND PROPOSED

		Annual Salaries & Benefits (2007)	
Pharmacy Services Salary Cost Status Quo	36.5		\$2,755,602
Director of Pharmacy	1.0	\$104,400	\$104,400
Administrative Assistant 3	1.0	\$39,732	\$39,732
Medical Transcriptionist	0.5	\$34,356	\$17,178
IT App Specialist 6	1.0	\$85,392	\$85,392
IT Specialist 2	1.0	\$57,504	\$57,504
Pharmacist Supervisor	1.0	\$104,184	\$104,184
Clinical Pharmacists	16.0	\$101,496	\$1,623,936
Pharmacy Technician A	13.0	\$48,396	\$629,148
Pharmacy Assistant/Courier	1.0	\$40,692	\$40,692
Procurement & Supply Specialist 3	1.0	\$53,436	\$53,436

CENTRAL SUPPLY AND BULK COMMISSARY SALARIES – STATUS QUO

		Annual Salaries & Benefits (2007)	
Commissary Services Salary Cost Status Quo	20.0		\$816,828
Fiscal Analyst 5	1.0	\$60,420	\$60,420
Procurement & Supply Officer 2	1.0	\$46,092	\$46,092
Procurement & Supply Officer 3	1.0	\$53,436	\$53,436
Biomed Tech (ITS3)	1.0	\$63,468	\$63,468
Central Supply Supervisor 2	1.0	\$46,092	\$46,092
Supply Officer 1 (Procurement & Supply Officer 2)	1.0	\$46,092	\$46,092
Warehouse Operator 2	8.0	\$33,588	\$268,704
Warehouse Operator 3	1.0	\$36,888	\$36,888
Warehouse Operator 4	1.0	\$40,692	\$40,692
Hospital Central Supply Technician 1	4.0	\$38,736	\$154,944

CENTRAL SUPPLY AND BULK COMMISSARY SALARIES – PROPOSED

		Annual Salaries & Benefits (2007)	
Commissary Services Salary Cost Proposed	17.0		\$716,064
Fiscal Analyst 5	1.0	\$60,420	\$60,420
Procurement & Supply Officer 2	1.0	\$46,092	\$46,092
Procurement & Supply Officer 3	1.0	\$53,436	\$53,436
Biomed Tech (ITS3)	1.0	\$63,468	\$63,468
Central Supply Supervisor 2	1.0	\$46,092	\$46,092
Supply Officer 1 (Procurement & Supply Officer 2)	1.0	\$46,092	\$46,092
Warehouse Operator 2	5.0	\$33,588	\$167,940
Warehouse Operator 3	1.0	\$36,888	\$36,888
Warehouse Operator 4	1.0	\$40,692	\$40,692
Hospital Central Supply Technician 1	4.0	\$38,736	\$154,944

B. OPERATING COSTS

The existing building envelopes and systems that support the current dietary, pharmacy and commissary services do not comply with the current energy code.

Both Options provide the opportunity to optimize energy performance with building envelopes, HVAC systems, lighting systems that meet or exceed the Washington State Energy Code. Energy efficiency can be further maximized with heat recovery systems, direct-digital control systems and metering, while maintaining the required temperature and humidity ranges.

Status Quo

<u>Facility</u>	<u>Area in Square Feet</u>	<u>Annual Energy Costs (2011)</u>
Kitchen	21,620 sf	\$643,173
Pharmacy	6,370 sf	\$30,633
Central Supply	8,854 sf	\$42,577
Bulk Commissary	32,850 sf	\$157,983

Proposed Option A

<u>Facility</u>	<u>Area in Square Feet</u>	<u>Annual Energy Costs (2011)</u>
Kitchen	14,839 sf	\$246,973
Pharmacy	10,036 sf	\$46,022
Central Supply	9,583 sf	\$43,941
Bulk Commissary	29,345 sf	\$134,553

Proposed Option B

<u>Facility</u>	<u>Area in Square Feet</u>	<u>Annual Energy Costs (2011)</u>
Kitchen	14,839 sf	\$246,973
Pharmacy	10,036 sf	\$46,002
Central Supply	9,583 sf	\$43,941

Proposed Option B – Phase 1 Kitchen Only

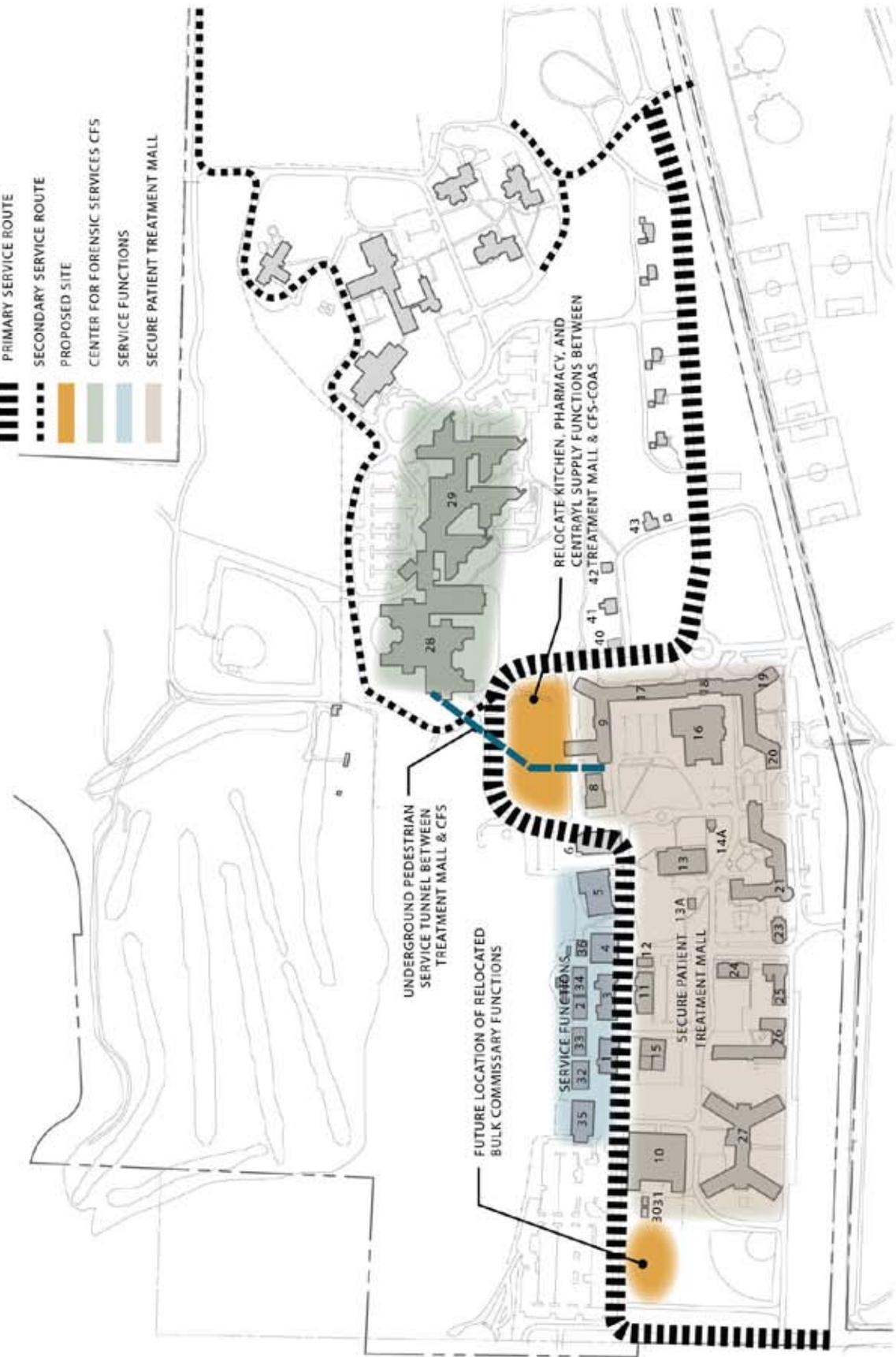
Facility	Area in Square Feet	Annual Energy Costs (2011)
Kitchen	14,830 sf	\$246,973
Core area for future addition	1,360 sf	Incl. in kitchen
Future Project:		Costs (2012)
Bulk Commissary	29,345 sf	\$139,666

The area allowance for the pharmacy increased due to current lack of secure medication storage space and mechanical spaces that will accommodate current HVAC design requirements. The Central Supply area increased due to added HVAC space requirements.

SECTION 8.0 - PROJECT DRAWINGS/DIAGRAMS



- PRIMARY SERVICE ROUTE
- SECONDARY SERVICE ROUTE
- PROPOSED SITE
- CENTER FOR FORENSIC SERVICES CFS
- SERVICE FUNCTIONS
- SECURE PATIENT TREATMENT MALL



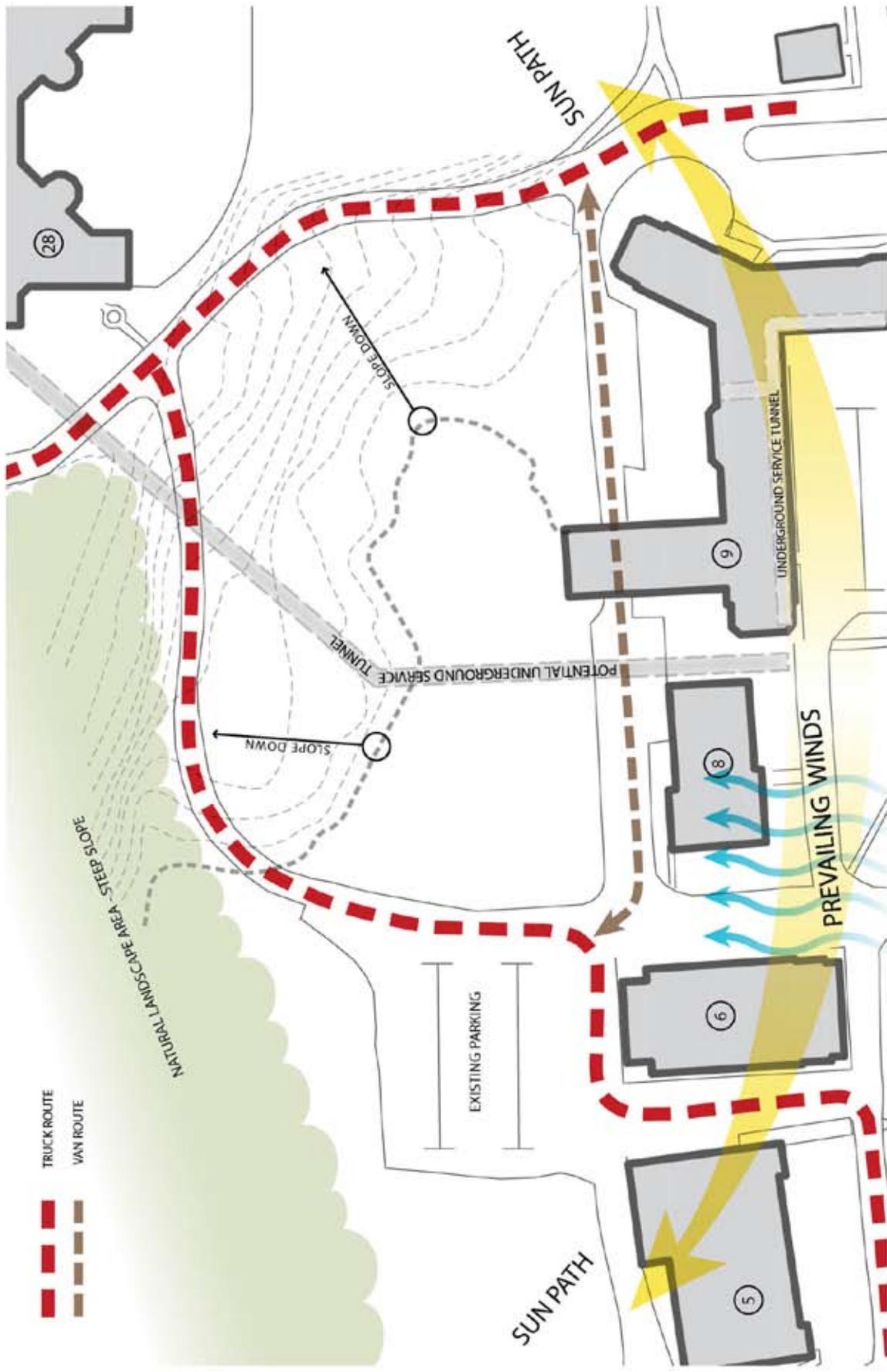
MASTER PLANNING CONCEPT
KITCHEN/COMMISSARY LOCATION



- PROPOSED SITE
- SERVICES TO BE RELOCATED TO PROPOSED SITE
- SERVICES TO BE RELOCATED TO FUTURE PROJECT



RELOCATION SITE PLAN



TRUCK ROUTE
VAN ROUTE

SITE ANALYSIS DIAGRAM

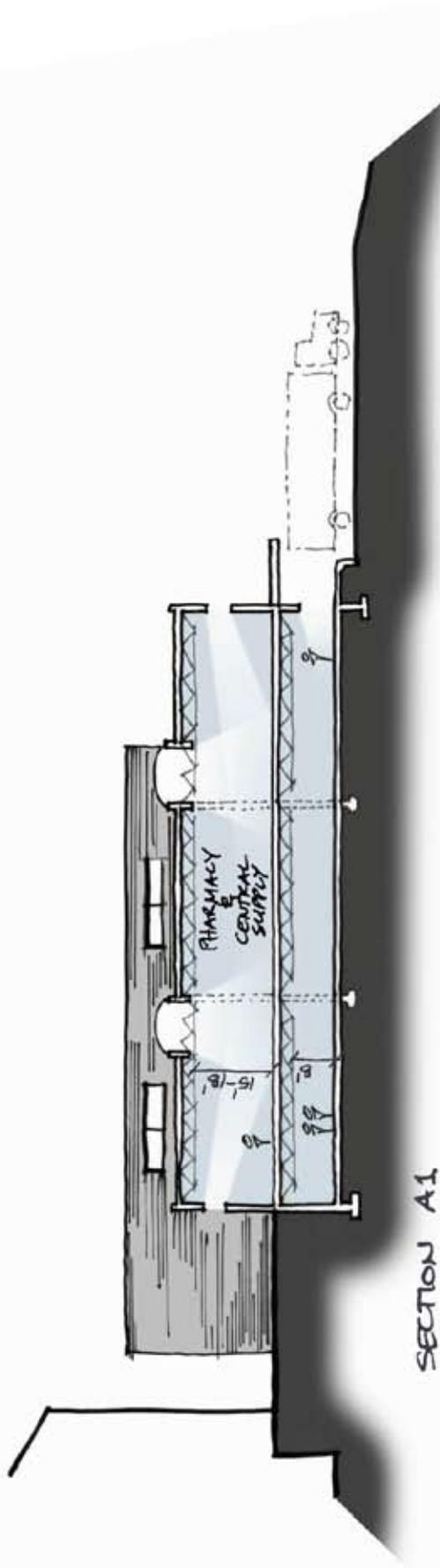


SITE OPTION A

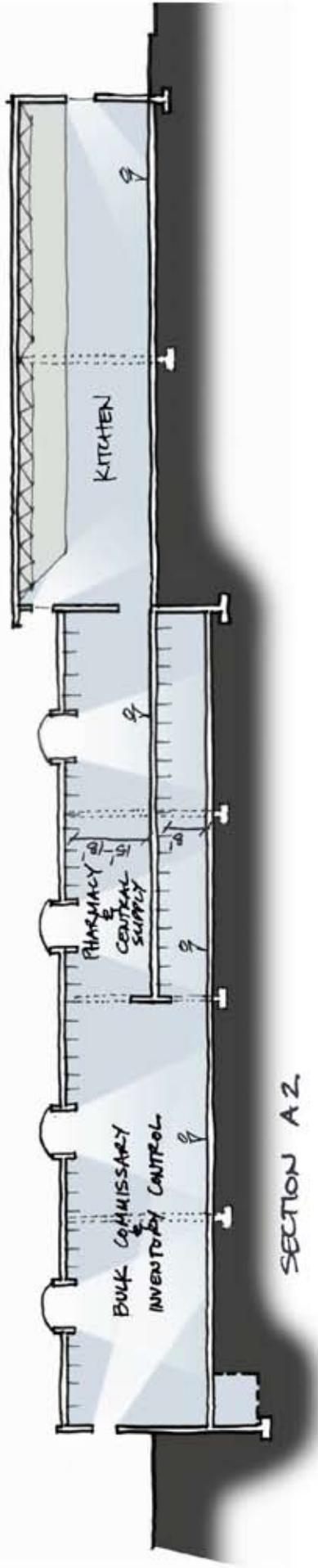


NAC

ARCHITECTURE



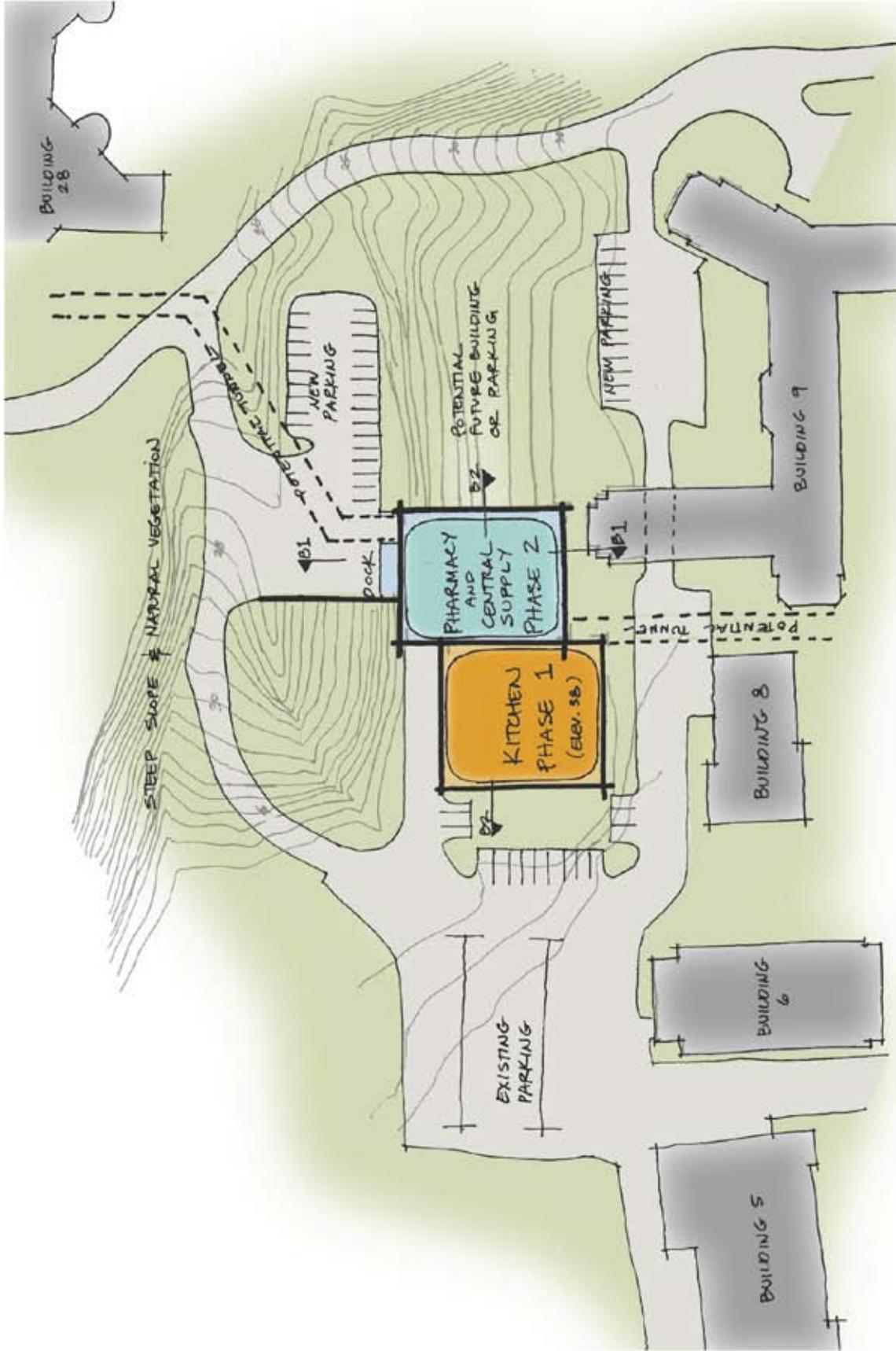
SECTION A1



SECTION A2

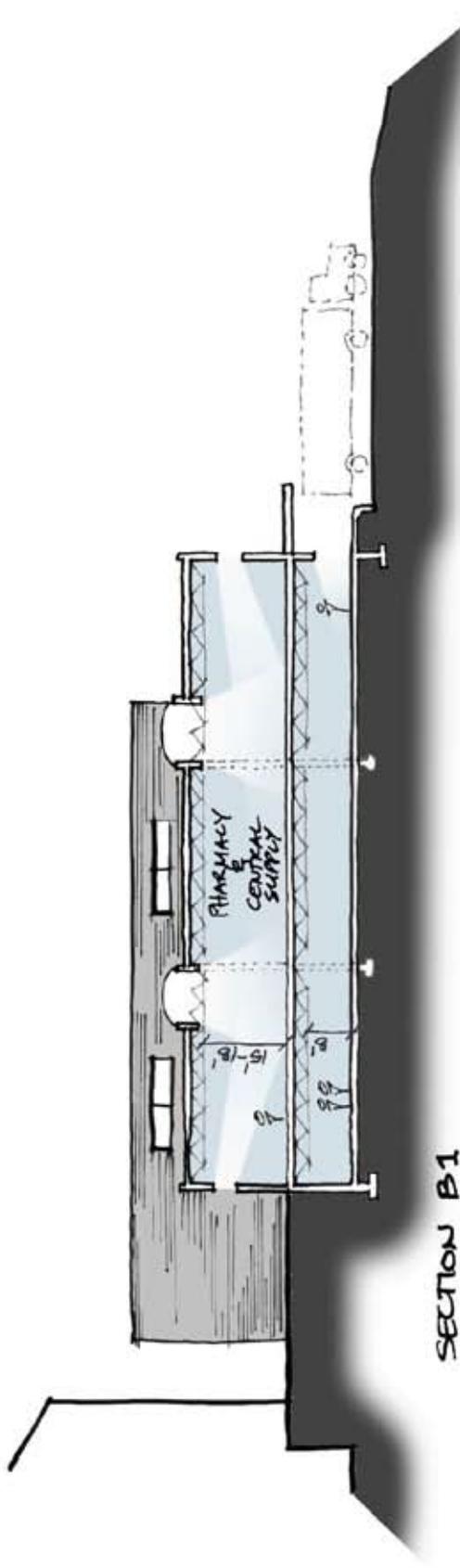
SECTION A



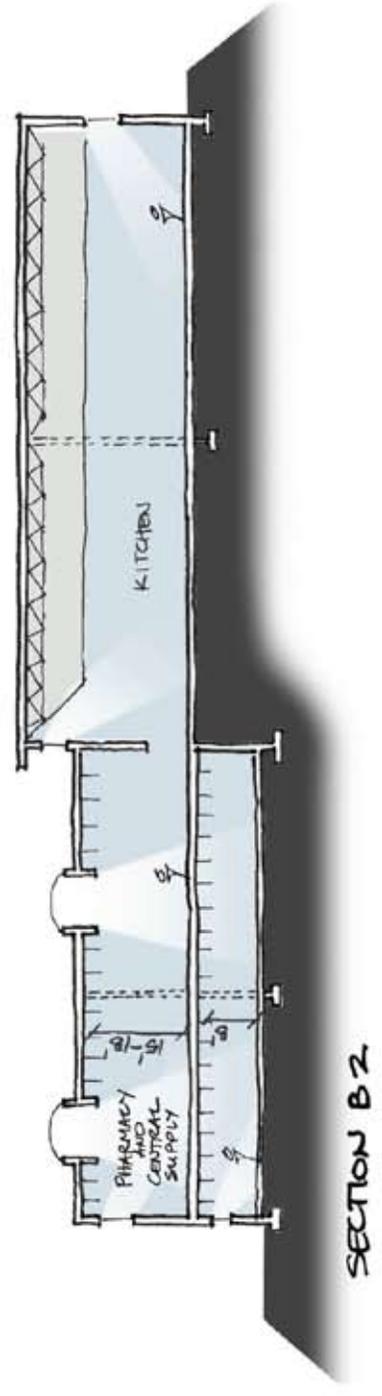


SITE OPTION B





SECTION B1



SECTION B2

SECTION B



SECTION 9.0 - APPENDIX



9.1 Predesign Checklist

PREDESIGN CHECKLIST

The predesign checklist should be completed by the agency and submitted to the Office of Financial Management with the predesign.

Is the following in the predesign? If not, it should be noted "not applicable".

- Executive Summary
- Project Analysis
 - Discussion of operational needs
 - Discussion of alternatives
 - Discussion of selected alternative
 - Identification of issues
 - Prior planning and history
 - Stakeholders
 - Implementation approach
 - Project management
 - Schedule
- Program Analysis
 - Assumptions
 - Functions and FTEs
 - Spatial relationships between the facility and site
 - Interrelationships and adjacencies of functions
 - Major equipment
 - Special systems such as environmental, information technology, etc.
 - Future needs and flexibility
 - Sustainability and energy utilization
 - Applicable codes and regulations
- Site Analysis
 - Potential sites
 - Building footprint
 - Site considerations such as physical, regulatory, and access issues
 - Acquisition process

-
- Project Budget Analysis
 - Assumptions
 - Detailed estimates
 - Funding sources
 - Form C-4, Predesign Capital Project Request Report Summary
 - Form C100, Agency/Institution Project Cost Estimate
 - Form C-3, Benefit and Life Cycle Cost Analysis Summary
 - Sign off by agency
 - Master Plan and Policy Coordination
 - Impacts to existing plans
 - Adherence to significant state policies
 - Facility Operations and Maintenance Requirements
 - Assumptions
 - Operating costs in table form
 - Staffing plan (capital and operating)
 - Project Drawings/Diagrams
 - Site plans
 - Building plans
 - Building volumes
 - Elevations
 - Appendix
 - Predesign checklist
 - Project budget unit cost detail (C-3 and C-100 Forms)
 - Sustainable design charette summary
 - Additional information as needed

9.2 C-3 Form

STATE OF WASHINGTON	FORM
BENEFIT & LIFE CYCLE COST ANALYSIS SUMMARY	C-3
	(Rev 6-01)

AGENCY: Dept. of Social and Health Services PROJECT: Western State Hospital – Kitchen/Commissary LOCATION: Lakewood, WA Economic Life: 50 Yrs Discount Rate: .04598	ANALYSIS TYPE: LCC ANALYSIS DATE: July 28, 2008 ANALYSIS BY: Steve Shiver, AIA FILE NAME:
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------

Description	Option A		Option B		Option B - Future	
	Estimated Cost	Present Worth	Estimated Cost	Present Worth	Estimated Cost	Present Worth
1. Initial Costs						
A. Construction		<u>25,195,150</u>		<u>12,384,000</u>		<u>7,201,000</u>
B.						
C.						
D.						
E.						
F.						
G.						
Total Initial Cost (PW)						
Total Initial Cost Savings						
2. Replacement/Salvage Costs						
Year PW						
A. _____ 2062 X		-4,225,308		-2,078,804		-1,191,702
B. _____						
C. _____						
D. _____						
E. _____						
F. _____						
G. _____						
H. _____						
Total Replacement/Savings(PW)						
3. Annual Costs						
Dif. PWA						
Escal e						
A. _____ 3.5 X		263,914,152		252,585,095		31,976,687
B. _____						
C. _____						
D. _____						
E. _____						
F. _____						
G. _____						
Total Annual Cost						
Total Annual Cost (PW)						
Grand Total PW Costs		\$284,883,994		\$262,890,291		\$37,985,985
Life Cycle PW Savings		\$15,992,282				
Savings %		.532%				

Note: Assuming Option B – Future bulk commissary is constructed, the total life cycle cost for Option B combined is \$301,193,194, or 5.32% more expensive than combining all functions on a single site (Option A).

**STATE OF WASHINGTON
BENEFIT & LIFE CYCLE COST ANALYSIS SUMMARY**

**FORM
C-3
(Rev 6-01)**

AGENCY: Dept. of Social and Health Services PROJECT: Western State Hospital – Kitchen/Commissary LOCATION: Lakewood, WA Economic Life: 50 Yrs Discount Rate: .04598	ANALYSIS TYPE: LCC ANALYSIS DATE: November 24, 2008 ANALYSIS BY: Steve Shiver, AIA FILE NAME:
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------

Description	Option A		Option B		Option B - Future	
	Estimated Cost	Present Worth	Estimated Cost	Present Worth	Estimated Cost	Present Worth
1. Initial Costs						
A. Construction		<u>25,493,078</u>		<u>17,960,078</u>		<u>8,324,000</u>
B.						
C.						
D.						
E.						
F.						
G.						
Total Initial Cost (PW)						
Total Initial Cost Savings						
2. Replacement/Salvage Costs						
Year PW						
A. _____ 2062 X		<u>-4,221,654</u>		<u>-2,974,189</u>		<u>-1,378,454</u>
B. _____						
C. _____						
D. _____						
E. _____						
F. _____						
G. _____						
H. _____						
Total Replacement/Savings(PW)						
3. Annual Costs						
Dif. PWA						
Escal e						
A. _____ 3.5 X		<u>195,966,421</u>		<u>182,293,791</u>		<u>33,327,935</u>
B. _____						
C. _____						
D. _____						
E. _____						
F. _____						
G. _____						
H. _____						
Total Annual Cost						
Total Annual Cost (PW)						
Grand Total PW Costs		\$217,237,845		\$197,279,680		\$40,273,481
Life Cycle PW Savings		\$19,958,165				
Savings %		9.187%				

Note: Assuming Option B – Future bulk commissary is constructed, the total life cycle cost for Option B combined is \$237,553161, or 9.35% more expensive than combining all functions on a single site (Option A).

9.3 Life Cycle Cost Analysis Summary

OPTION A:

LIFE CYCLE COST SPREADSHEET									
-----PROJECT DATA-----									24-Nov-08
PROJECT: WSH Kitchen/Commissary Pre-Design					NAC/Architecture				
Option A - New Kitchen, Pharmacy, Central Supply and Bulk Commissary					Colin Jones				
-----DISCOUNT & ESCALATION Real Rates as of November 2004-----									
Enter 1 or 0 for each fuel type:					Years:			Rate:	
		1 = Yes			Real Discount Rate (i) 2005 - 2065			4.59796%	
		0 = No							
IOU Electricity Source*		0							
POU Electricity Source**		1							
Natural Gas Fuel?		1			Energy 2005 - 2015			3.80%	
Propane Fuel?		0			Natural Gas/POU Electricity 2016 - 2025			3.80%	
Oil Fuel?		0			2026 - 2065			3.80%	
					Maintenance 2005 - 2065			3.02%	
					Staff 2005 - 2065			2.09%	
					Inflation (Nominal) 2005 - 2065			3.00%	
* IOU = Investor Owned Utility									
** POU = Publicly Owned Utility									
									\$195,966,421 =50-year LCC
-----ANNUAL REAL CASH FLOWS-----									
(Begin Year	First & Replace. Costs	Annual Staff Costs	Annual Maint. Costs	Annual Energy Costs	Total Annual Costs	Present Worth Factor (1+i) ⁻ⁿ	Present Worth of Annual Costs	Present Worth of Cumulative Costs	
2011	\$25,493,078	\$4,785,088	\$203,810	\$471,490	\$675,300	1.00	\$25,493,078	\$25,493,078	
2011	\$25,493,078	--	--	--	\$25,493,078	0.96	5,338,984	30,832,062	
2012	0	4,885,096	209,965	489,407	5,584,468	0.91	5,094,427	36,052,466	
2013	0	4,987,195	216,306	508,004	5,711,505	0.87	5,104,583	41,157,048	
2014	0	5,091,427	222,838	527,308	5,841,574	0.84	4,991,454	46,148,502	
2015	0	5,197,838	229,568	547,346	5,974,752	0.80	4,880,954	51,029,456	
2016	0	5,306,473	236,501	568,145	6,111,119	0.76	4,773,020	55,802,476	
2017	0	5,417,378	243,643	589,735	6,250,756	0.73	4,667,593	60,470,069	
2018	0	5,530,601	251,001	612,145	6,393,747	0.70	4,564,612	65,034,681	
2019	0	5,646,191	258,582	635,406	6,540,179	0.67	4,464,021	69,498,702	
2020	0	5,764,196	266,391	659,551	6,690,139	0.64	4,365,761	73,864,463	
2021	0	5,884,668	274,436	684,614	6,843,718	0.61	4,269,779	78,134,242	
2022	0	6,007,658	282,724	710,630	7,001,011	0.58	4,176,020	82,310,262	
2023	0	6,133,218	291,262	737,634	7,162,113	0.56	4,084,433	86,394,695	
2024	0	6,261,402	300,058	765,664	7,327,124	0.53	3,994,965	90,389,660	
2025	0	6,392,265	309,120	794,759	7,496,144	0.51	3,907,566	94,297,226	
2026	0	6,525,864	318,455	824,960	7,669,279	0.49	3,822,188	98,119,413	
2027	0	6,662,254	328,073	856,308	7,846,635	0.47	3,738,783	101,858,196	
2028	0	6,801,495	337,981	888,848	8,028,324	0.45	3,657,304	105,515,500	
2029	0	6,943,646	348,188	922,624	8,214,458	0.43	3,577,706	109,093,206	
2030	0	7,088,769	358,703	957,684	8,405,155	0.41	3,499,715	112,692,921	
2031	8,157,785	7,236,924	369,536	994,076	16,758,320	0.39	3,423,977	116,316,898	
2032	0	7,388,176	380,696	1,031,851	8,800,722	0.37	3,349,759	120,066,657	
2033	0	7,542,588	392,193	1,071,061	9,005,842	0.36	3,277,252	123,943,909	
2034	0	7,700,229	404,037	1,111,761	9,216,027	0.34	3,206,413	127,950,322	
2035	0	7,861,163	416,239	1,154,008	9,431,411	0.33	3,137,205	132,097,527	
2036	0	8,025,462	428,809	1,197,861	9,652,132	0.31	3,069,588	136,377,115	
2037	0	8,193,194	441,759	1,243,379	9,878,333	0.30	3,003,525	140,780,640	
2038	0	8,364,432	455,100	1,290,628	10,110,160	0.28	2,938,979	145,319,619	
2039	0	8,539,248	468,844	1,339,672	10,347,764	0.27	2,875,915	150,005,534	
2040	0	8,717,718	483,004	1,390,579	10,591,301	0.26	2,814,298	154,849,833	
2041	0	8,899,919	497,590	1,443,421	10,840,930	0.25	2,754,094	159,854,926	
2042	0	9,085,927	512,617	1,498,271	11,096,816	0.24	2,695,269	165,020,195	
2043	0	9,275,823	528,099	1,555,206	11,359,127	0.23	2,637,791	170,356,986	
2044	0	9,469,688	544,047	1,614,303	11,628,038	0.22	2,581,628	175,874,615	
2045	0	9,667,604	560,477	1,675,647	11,903,728	0.21	2,526,750	181,574,365	
2046	0	9,869,657	577,404	1,739,321	12,186,382	0.20	2,473,126	187,458,491	
2047	0	10,075,933	594,841	1,805,416	12,476,190	0.19	2,420,727	193,529,217	
2048	0	10,286,520	612,806	1,874,021	12,773,347	0.18	2,369,523	199,788,741	
2049	0	10,501,508	631,312	1,945,234	13,078,055	0.17	2,319,488	206,228,229	
2050	0	10,720,990	650,378	2,019,153	13,390,521	0.17	2,271,168	212,849,397	
2051	11,216,954	10,945,058	670,019	2,095,881	24,927,913	0.16	2,222,811	219,572,208	
2052	0	11,173,810	690,254	2,175,525	14,039,588	0.15	2,176,117	226,448,325	
2053	0	11,407,343	711,100	2,258,194	14,376,637	0.14	2,130,485	233,488,810	
2054	0	11,645,756	732,575	2,344,006	14,722,337	0.14	2,085,890	240,594,700	
2055	0	11,889,152	754,699	2,433,078	15,076,929	0.13	2,042,308	247,757,008	
2056	0	12,137,636	777,490	2,525,535	15,440,661	0.13	1,999,715	254,976,723	
2057	0	12,391,312	800,971	2,621,505	15,813,788	0.12	1,958,087	262,344,810	
2058	0	12,650,291	825,160	2,721,123	16,196,573	0.12	1,917,403	269,762,213	
2059	0	12,914,682	850,080	2,824,525	16,589,287	0.11	1,877,640	277,329,854	
2060	0	13,184,599	875,752	2,931,857	16,992,208	0.11	1,838,776	285,048,630	
2061	0	13,460,157	902,200	3,043,268	17,405,624	0.10	1,800,791	292,949,421	
2062	0	13,741,474	929,446	3,158,912	17,829,832	0.10			
Totals:	\$44,867,817	\$437,491,606	\$24,753,329	\$73,409,051	\$580,521,804		\$195,966,421		=50-year LCC
	Ist+Repl	Staff	Maint	Fuel	Total Annual				

OPTION B:

LIFE CYCLE COST SPREADSHEET								
-----PROJECT DATA-----								24-Nov-08
PROJECT: WSH Kitchen/Commissary Pre-Design				NAC Architecture				
Option B - New Kitchen, Pharmacy and Central Supply (existing Bulk Commissary to remain)				Colin Jones				
-----DISCOUNT & ESCALATION Real Rates as of November 2004-----								
Enter 1 or 0 for each fuel type:		1 = Yes 0 = No		Years:			Rate:	
				Real Discount Rate (i) 2005 - 2065			4.59796%	
IOU Electricity Source*		0		Energy 2005 - 2015			3.80%	
POU Electricity Source**		1		Natural Gas/POU Electricity 2016 - 2025			3.80%	
Natural Gas Fuel?		1		2026 - 2065			3.80%	
Propane Fuel?		0		Maintenance 2005 - 2065			3.02%	
Oil Fuel?		0		Staff 2005 - 2065			2.09%	
				Inflation (Nominal) 2005 - 2065			3.00%	
* IOU = Investor Owned Utility								
** POU = Publicly Owned Utility								
				\$182,293,791 =50-year LCC				
-----ANNUAL REAL CASH FLOWS-----								
(Begin) Year	First & Replace. Costs	Annual Staff Costs	Annual Maint. Costs	Annual Energy Costs	Total Annual Costs	Present Worth Factor (1+i) ⁻ⁿ	Present Worth of Annual Costs	Present Worth of Cumulative Costs
2011	\$17,960,078	\$4,892,303	\$145,647	\$336,916	\$482,563	1.00	\$17,960,078	\$17,960,078
2012	0	4,994,552	150,046	349,719	5,494,316	0.96	5,252,795	23,212,873
2013	0	5,098,938	154,577	363,008	5,616,523	0.91	5,133,589	28,346,463
2014	0	5,205,506	159,245	376,802	5,741,554	0.87	5,017,181	33,363,644
2015	0	5,314,301	164,054	391,121	5,869,476	0.84	4,903,504	38,267,147
2016	0	5,425,370	169,009	405,984	6,000,362	0.80	4,792,492	43,059,639
2017	0	5,538,760	174,113	421,411	6,134,284	0.76	4,684,083	47,743,723
2018	0	5,654,520	179,371	437,425	6,271,316	0.73	4,578,215	52,321,938
2019	0	5,772,700	184,788	454,047	6,411,535	0.70	4,474,827	56,796,765
2020	0	5,893,349	190,369	471,300	6,555,018	0.67	4,373,861	61,170,626
2021	0	6,016,520	196,118	489,210	6,701,848	0.64	4,275,259	65,445,885
2022	0	6,142,266	202,041	507,800	6,852,106	0.61	4,178,965	69,624,850
2023	0	6,270,639	208,142	527,096	7,005,877	0.58	4,084,924	73,709,773
2024	0	6,401,695	214,428	547,126	7,163,249	0.56	3,993,082	77,702,856
2025	0	6,535,491	220,904	567,917	7,324,311	0.53	3,903,389	81,606,244
2026	0	6,672,082	227,575	589,497	7,489,155	0.51	3,815,791	85,422,035
2027	0	6,811,529	234,448	611,898	7,657,875	0.49	3,730,241	89,152,276
2028	0	6,953,890	241,528	635,151	7,830,569	0.47	3,646,688	92,798,964
2029	0	7,099,226	248,822	659,286	8,007,335	0.45	3,565,087	96,364,051
2030	0	7,247,600	256,337	684,339	8,188,276	0.43	3,485,390	99,849,441
2031	5,747,225	7,399,075	264,078	710,344	14,120,722	0.41	5,746,357	105,595,799
2032	0	7,553,716	272,053	737,337	8,563,106	0.39	3,331,531	108,927,329
2033	0	7,711,588	280,269	765,356	8,757,213	0.37	3,257,281	112,184,610
2034	0	7,872,760	288,733	794,439	8,955,933	0.36	3,184,762	115,369,372
2035	0	8,037,301	297,453	824,628	9,159,382	0.34	3,113,931	118,483,303
2036	0	8,205,281	306,436	855,964	9,367,681	0.33	3,044,751	121,528,054
2037	0	8,376,771	315,691	888,491	9,580,952	0.31	2,977,180	124,505,234
2038	0	8,551,846	325,225	922,253	9,799,323	0.30	2,911,182	127,416,415
2039	0	8,730,579	335,046	957,299	10,022,924	0.28	2,846,718	130,263,133
2040	0	8,913,048	345,165	993,676	10,251,889	0.27	2,783,753	133,046,886
2041	0	9,099,331	355,589	1,031,436	10,486,356	0.26	2,722,251	135,769,137
2042	0	9,289,507	366,327	1,070,630	10,726,465	0.25	2,662,177	138,431,314
2043	0	9,483,658	377,391	1,111,314	10,972,363	0.24	2,603,498	141,034,813
2044	0	9,681,866	388,788	1,153,544	11,224,198	0.23	2,546,181	143,580,993
2045	0	9,884,217	400,529	1,197,379	11,482,125	0.22	2,490,193	146,071,186
2046	0	10,090,797	412,625	1,242,879	11,746,302	0.21	2,435,503	148,506,689
2047	0	10,301,695	425,086	1,290,109	12,016,890	0.20	2,382,080	150,888,769
2048	0	10,517,000	437,924	1,339,133	12,294,057	0.19	2,329,895	153,218,664
2049	0	10,736,806	451,149	1,390,020	12,577,975	0.18	2,278,917	155,497,581
2050	0	10,961,205	464,774	1,442,841	12,868,820	0.17	2,229,120	157,726,701
2051	7,902,434	11,190,294	478,810	1,497,669	21,069,207	0.17	3,489,150	161,215,851
2052	0	11,424,171	493,270	1,554,580	13,472,022	0.16	2,132,951	163,348,802
2053	0	11,662,936	508,167	1,613,654	13,784,758	0.15	2,086,528	165,435,330
2054	0	11,906,692	523,514	1,674,973	14,105,179	0.14	2,041,176	167,476,505
2055	0	12,155,542	539,324	1,738,622	14,433,487	0.14	1,996,870	169,473,376
2056	0	12,409,592	555,611	1,804,690	14,769,893	0.13	1,953,587	171,426,962
2057	0	12,668,953	572,391	1,873,268	15,114,612	0.13	1,911,301	173,338,264
2058	0	12,933,734	589,677	1,944,452	15,467,863	0.12	1,869,990	175,208,253
2059	0	13,204,049	607,485	2,018,341	15,829,876	0.12	1,829,630	177,037,883
2060	0	13,480,014	625,831	2,095,038	16,200,883	0.11	1,790,198	178,828,082
2061	0	13,761,746	644,731	2,174,650	16,581,127	0.11	1,751,674	180,579,756
2062	0	14,049,366	664,202	2,257,286	16,970,855	0.10	1,714,035	182,293,791
Totals:	\$31,609,737 1st+Repl	\$447,294,072 Staff	\$17,689,260 Maint	\$52,456,434 Fuel	\$549,049,503 Total Annual		\$182,293,791	=50-year LCC

OPTION B - PHASE 1:

LIFE CYCLE COST SPREADSHEET									
									24-Nov-08
PROJECT DATA									
PROJECT: WSH Kitchen/Commissary Pre-Design						NAC Architecture			
Option B - Phase 1 - New Kitchen Only						Colin Jones			
(existing Bulk Commissary to remain)									
DISCOUNT & ESCALATION Real Rates as of November 2004									
Enter 1 or 0 for each fuel type:		1 = Yes 0 = No		Years:			Rate:		
				Real Discount Rate (i) 2005 - 2065			4.59796%		
IOU Electricity Source*		0		Energy 2005 - 2015			3.80%		
POU Electricity Source**		1		Natural Gas/POU Electricity 2016 - 2025			3.80%		
Natural Gas Fuel?		1		2026 - 2065			3.80%		
Propane Fuel?		0		Maintenance 2005 - 2065			3.02%		
Oil Fuel?		0		Staff 2005 - 2065			2.09%		
				Inflation (Nominal) 2005 - 2065			3.00%		
* IOU = Investor Owned Utility									
** POU = Publicly Owned Utility									
						\$169,703,941		=50-year LCC	
ANNUAL REAL CASH FLOWS									
(Begin) Year	First & Replace. Costs	Annual Staff Costs	Annual Maint. Costs	Annual Energy Costs	Total Annual Costs	Present Worth Factor (1+i) ⁻ⁿ	Present Worth of Annual Costs	Present Worth of Cumulative Costs	
2011	\$11,778,078	\$4,892,303	\$106,759	\$246,973	\$353,732				
2011	\$11,778,078	--	--	--	\$11,778,078	1.00	\$11,778,078	\$11,778,078	
2012	0	4,994,552	109,983	256,358	5,360,893	0.96	5,125,237	16,903,315	
2013	0	5,098,938	113,305	266,100	5,478,342	0.91	5,007,290	21,910,605	
2014	0	5,205,506	116,726	276,211	5,598,444	0.87	4,892,127	26,802,731	
2015	0	5,314,301	120,252	286,707	5,721,260	0.84	4,779,680	31,582,412	
2016	0	5,425,370	123,883	297,602	5,846,855	0.80	4,669,886	36,252,298	
2017	0	5,538,760	127,624	308,911	5,975,296	0.76	4,562,681	40,814,979	
2018	0	5,654,520	131,479	320,650	6,106,649	0.73	4,458,004	45,272,983	
2019	0	5,772,700	135,449	332,834	6,240,984	0.70	4,355,794	49,628,777	
2020	0	5,893,349	139,540	345,482	6,378,371	0.67	4,255,993	53,884,769	
2021	0	6,016,520	143,754	358,611	6,518,885	0.64	4,158,543	58,043,312	
2022	0	6,142,266	148,095	372,238	6,662,599	0.61	4,063,388	62,106,700	
2023	0	6,270,639	152,568	386,383	6,809,590	0.58	3,970,474	66,077,174	
2024	0	6,401,695	157,175	401,065	6,959,936	0.56	3,879,747	69,956,922	
2025	0	6,535,491	161,922	416,306	7,113,719	0.53	3,791,156	73,748,078	
2026	0	6,672,082	166,812	432,125	7,271,020	0.51	3,704,649	77,452,727	
2027	0	6,811,529	171,850	448,546	7,431,925	0.49	3,620,178	81,072,905	
2028	0	6,953,890	177,040	465,591	7,596,521	0.47	3,537,692	84,610,597	
2029	0	7,099,226	182,386	483,283	7,764,896	0.45	3,457,146	88,067,744	
2030	0	7,247,600	187,894	501,648	7,937,143	0.43	3,378,494	91,446,237	
2031	3,768,985	7,399,075	193,569	520,711	11,882,339	0.41	4,835,459	96,281,696	
2032	0	7,553,716	199,415	540,498	8,293,628	0.39	3,226,689	99,508,385	
2033	0	7,711,588	205,437	561,037	8,478,062	0.37	3,153,449	102,661,834	
2034	0	7,872,760	211,641	582,356	8,666,758	0.36	3,081,930	105,743,764	
2035	0	8,037,301	218,033	604,486	8,859,819	0.34	3,012,088	108,755,852	
2036	0	8,205,281	224,617	627,456	9,057,354	0.33	2,943,886	111,699,738	
2037	0	8,376,771	231,401	651,299	9,259,471	0.31	2,877,283	114,577,021	
2038	0	8,551,846	238,389	676,049	9,466,283	0.30	2,812,242	117,389,263	
2039	0	8,730,579	245,588	701,739	9,677,906	0.28	2,748,726	120,137,989	
2040	0	8,913,048	253,005	728,405	9,894,458	0.27	2,686,698	122,824,687	
2041	0	9,099,331	260,646	756,084	10,116,061	0.26	2,626,123	125,450,809	
2042	0	9,289,507	268,517	784,815	10,342,840	0.25	2,566,966	128,017,775	
2043	0	9,483,658	276,627	814,638	10,574,923	0.24	2,509,195	130,526,970	
2044	0	9,681,866	284,981	845,594	10,812,441	0.23	2,452,775	132,979,745	
2045	0	9,884,217	293,587	877,727	11,055,531	0.22	2,397,675	135,377,420	
2046	0	10,090,797	302,453	911,081	11,304,331	0.21	2,343,864	137,721,284	
2047	0	10,301,695	311,588	945,702	11,558,984	0.20	2,291,311	140,012,594	
2048	0	10,517,000	320,998	981,638	11,819,636	0.19	2,239,985	142,252,580	
2049	0	10,736,806	330,692	1,018,941	12,086,438	0.18	2,189,859	144,442,439	
2050	0	10,961,205	340,679	1,057,660	12,359,544	0.17	2,140,903	146,583,342	
2051	5,182,354	11,190,294	350,967	1,097,852	17,821,467	0.17	2,951,310	149,534,652	
2052	0	11,424,171	361,566	1,139,570	12,925,307	0.16	2,046,393	151,581,046	
2053	0	11,662,936	372,486	1,182,874	13,218,295	0.15	2,000,785	153,581,831	
2054	0	11,906,692	383,735	1,227,823	13,518,249	0.14	1,956,240	155,538,071	
2055	0	12,155,542	395,323	1,274,480	13,825,345	0.14	1,912,734	157,450,805	
2056	0	12,409,592	407,262	1,322,910	14,139,765	0.13	1,870,241	159,321,046	
2057	0	12,668,953	419,561	1,373,181	14,461,695	0.13	1,828,737	161,149,783	
2058	0	12,933,734	432,232	1,425,362	14,791,328	0.12	1,788,200	162,937,983	
2059	0	13,204,049	445,286	1,479,525	15,128,860	0.12	1,748,606	164,686,589	
2060	0	13,480,014	458,733	1,535,747	15,474,494	0.11	1,709,932	166,396,521	
2061	0	13,761,746	472,587	1,594,106	15,828,439	0.11	1,672,158	168,068,680	
2062	0	14,049,366	486,859	1,654,682	16,190,907	0.10	1,635,262	169,703,941	
Totals:	\$20,729,417	\$447,294,072	\$12,966,197	\$38,452,679	\$519,442,366		\$169,703,941	=50-year LCC	
	1st+Repl	Staff	Maint	Fuel	Total Annual				

OPTION B - FUTURE:

LIFE CYCLE COST SPREADSHEET									
									24-Nov-08
-----PROJECT DATA-----									
PROJECT: WSH Kitchen/Commissary Pre-Design Option B (Future) - New Bulk Commissary						NAC/Architecture Colin Jones			
-----DISCOUNT & ESCALATION Real Rates as of November 2004-----									
Enter 1 or 0 for each fuel type:				Years:		Rate:			
		1 = Yes 0 = No		Real Discount Rate (i) 2005 - 2065		4.59796%			
IOU Electricity Source*		0		Energy 2005 - 2015		3.80%			
POU Electricity Source**		1		Natural Gas/POU Electricity 2016 - 2025		3.80%			
Natural Gas Fuel?		1		2026 - 2065		3.80%			
Propane Fuel?		0		Maintenance 2005 - 2065		3.02%			
Oil Fuel?		0		Staff 2005 - 2065		2.09%			
				Inflation (Nominal) 2005 - 2065		3.00%			
* IOU = Investor Owned Utility									
** POU = Publicly Owned Utility									
\$33,327,935 =50-year LCC									
-----ANNUAL REAL CASH FLOWS-----									
(Begin) Year	First & Replace. Costs	Annual Staff Costs	Annual Maint. Costs	Annual Energy Costs	Total Annual Costs	Present Worth Factor (1+i) ⁻ⁿ	Present Worth of Annual Costs	Present Worth of Cumulative Costs	
2012	\$8,324,000	\$358,550	\$101,905	\$139,670	\$241,575				
2012	\$8,324,000	--	--	--	\$8,324,000	1.00	\$8,324,000	\$8,324,000	
2013	0	366,044	104,983	144,977	616,004	0.96	588,925	8,912,925	
2014	0	373,694	216,306	150,487	740,487	0.91	676,816	9,589,741	
2015	0	381,504	222,838	156,205	760,548	0.87	664,595	10,254,336	
2016	0	389,478	229,568	162,141	781,187	0.84	652,622	10,906,958	
2017	0	397,618	236,501	168,302	802,421	0.80	640,894	11,547,853	
2018	0	405,928	243,643	174,698	824,269	0.76	629,404	12,177,257	
2019	0	414,412	251,001	181,336	846,750	0.73	618,148	12,795,405	
2020	0	423,073	258,582	188,227	869,882	0.70	607,120	13,402,525	
2021	0	431,915	266,391	195,380	893,686	0.67	596,315	13,998,840	
2022	0	440,942	274,436	202,804	918,182	0.64	585,729	14,584,569	
2023	0	450,158	282,724	210,511	943,392	0.61	575,357	15,159,926	
2024	0	459,566	291,262	218,510	969,338	0.58	565,193	15,725,119	
2025	0	469,171	300,058	226,813	996,043	0.56	555,234	16,280,353	
2026	0	478,977	309,120	235,432	1,023,529	0.53	545,476	16,825,829	
2027	0	488,988	318,455	244,379	1,051,822	0.51	535,913	17,361,741	
2028	0	499,207	328,073	253,665	1,080,945	0.49	526,541	17,888,282	
2029	0	509,641	337,981	263,304	1,110,926	0.47	517,357	18,405,639	
2030	0	520,292	348,188	273,310	1,141,790	0.45	508,356	18,913,996	
2031	0	531,166	358,703	283,696	1,173,565	0.43	499,535	19,413,531	
2032	2,663,680	542,268	369,536	294,476	3,869,960	0.41	1,574,861	20,988,392	
2033	0	553,601	380,696	305,666	1,239,963	0.39	482,416	21,470,807	
2034	0	565,171	392,193	317,282	1,274,646	0.37	474,110	21,944,917	
2035	0	576,984	404,037	329,338	1,310,359	0.36	465,968	22,410,885	
2036	0	589,042	416,239	341,853	1,347,134	0.34	457,988	22,868,873	
2037	0	601,353	428,809	354,844	1,385,006	0.33	450,165	23,319,037	
2038	0	613,922	441,759	368,328	1,424,009	0.31	442,496	23,761,533	
2039	0	626,753	455,100	382,324	1,464,177	0.30	434,978	24,196,511	
2040	0	639,852	468,844	396,852	1,505,549	0.28	427,607	24,624,118	
2041	0	653,225	483,004	411,933	1,548,161	0.27	420,381	25,044,499	
2042	0	666,877	497,590	427,586	1,592,054	0.26	413,296	25,457,795	
2043	0	680,815	512,617	443,835	1,637,267	0.25	406,350	25,864,144	
2044	0	695,044	528,098	460,700	1,683,843	0.24	399,539	26,263,683	
2045	0	709,570	544,047	478,207	1,731,824	0.23	392,860	26,656,543	
2046	0	724,400	560,477	496,379	1,781,256	0.22	386,311	27,042,854	
2047	0	739,540	577,404	515,241	1,832,185	0.21	379,889	27,422,743	
2048	0	754,997	594,841	534,820	1,884,658	0.20	373,591	27,796,334	
2049	0	770,776	612,806	555,143	1,938,725	0.19	367,415	28,163,750	
2050	0	786,885	631,312	576,239	1,994,436	0.18	361,358	28,525,108	
2051	0	803,331	650,378	598,136	2,051,845	0.17	355,418	28,880,526	
2052	3,662,560	820,121	670,019	620,865	5,773,565	0.17	956,127	29,836,653	
2053	0	837,261	690,254	644,458	2,171,973	0.16	343,877	30,180,529	
2054	0	854,760	711,100	668,947	2,234,807	0.15	338,271	30,518,800	
2055	0	872,625	732,575	694,367	2,299,567	0.14	332,773	30,851,573	
2056	0	890,863	754,698	720,753	2,366,314	0.14	327,379	31,178,952	
2057	0	909,482	777,490	748,142	2,435,114	0.13	322,088	31,501,040	
2058	0	928,490	800,971	776,571	2,506,032	0.13	316,897	31,817,938	
2059	0	947,895	825,160	806,081	2,579,136	0.12	311,805	32,129,743	
2060	0	967,706	850,080	836,712	2,654,498	0.12	306,809	32,436,552	
2061	0	987,931	875,752	868,507	2,732,191	0.11	301,907	32,738,459	
2062	0	1,008,579	902,200	901,511	2,812,289	0.11	297,098	33,035,557	
2063	0	1,029,658	929,446	935,768	2,894,873	0.10	292,379	33,327,935	
Totals:	\$14,650,240 1st+Repl	\$32,781,553 Staff	\$24,648,346 Maint	\$21,746,044 Fuel	\$93,826,182 Total Annual		\$33,327,935	=50-year LCC	

9.4 Form C100, Agency/Institution Project Cost Estimate

OPTION A:

STATE OF WASHINGTON AGENCY/INSTITUTION PROJECT COST SUMMARY		
Agency	Department of Social and Health Services	
Project Name	WSH New Kitchen/Pharmacy/Cent. Supply/Commissary - Option A	
Project Number	08-1-319	

Contact Information	
Analysis Date	5/20/2008
Analysis By	NAC/Architecture
Contact Phone Number	206 441 4522

Statistics	Primary	Secondary	Total
Gross Square Feet	14,839	50,002	64,841
Net Square Feet	11,871	41,207	53,078
Efficiency	80%	82%	82%
Escalated MACC Cost per Sq.Ft.	350	220	250
Building Type	Dining Halls/Institute	Warehouses	
Is project a remodel?	No	No	
A/E Fee Class	B	C	
A/E Fee Percentage	8.50%	6.41%	

Schedule	Start Date	End Date
Predesign (mm-yyyy)	Sep-2007	May-2008
Design (mm-yyyy)	Jun-2008	Apr-2009
Construction (mm-yyyy)	Sep-2009	Dec-2010
Construction Duration (months)	15	

Cost Summary	
Project Phase	Escalated Cost
Project Total	\$25,493,078
Consultant Services	\$2,173,000
Pre-Schematic Design Services	\$127,000
A/E Basic Design Services	\$760,000
A/E Extra Services/Reimbursables	\$629,000
Other Services	\$485,000
Design Services Contingency	\$172,000
Construction	\$19,940,000
MACC - Primary	\$5,200,000
MACC - Secondary	\$11,016,000
GC/CM Risk Contingency	\$0
GC/CM or Design Build	\$0
Contingencies	\$2,110,000
Sales Tax	\$1,614,000
Other	\$3,380,078
Acquisition	\$0
Equipment	\$2,627,000
Equipment Tax	\$231,000
Artwork	\$23,078
Agency Project Administration	\$0
Other	\$499,000

Other Details	
Number of C100s Included in Summary	1
Alternative Public Works Project	No
State Construction Inflation Rate	3.00%
Base Month	Mar-2006
Project Administration by	GA
Project Admin Impact to GA that is NOT included in Project Total	\$709,442

STATE OF WASHINGTON
AGENCY/INSTITUTION PROJECT COST ESTIMATE

FORM
C-100
Version 2.6.1
July 1, 2005

AGENCY: Department of Social and Health Services
PROJECT NAME: WSH New Kitchen/Pharmacy/Cent.Supply/Commissary - Option A
PROJECT NUMBER: 08-1-319
LOCATION: Steilacoom, Washington

Analysis Date: 5/20/2008
Analysis By: NAC|Architecture
Contact Phone #: 206 441 4522

STATISTICS:	Primary	Secondary
Gross Square Feet	14,839	50,002
Net Square Feet	11,871	41,207
Efficiency	80%	82%
Estimated Cost per S.F.	350	220
Building Type:	Dining Halls/Institute	Warehouses
Is project a remodel?	No	No
A/E Fee Class	B	C
A/E Fee Percentage:	8.50%	6.41%

Project Schedule	Start Date	End Date
1. Predesign (mm-yyyy):	Sep-2007	May-2008
2. Design (mm-yyyy):	Jun-2008	Apr-2009
3. Construction (mm-yyyy):	Sep-2009	Dec-2010
5. Construction Duration (in Months):	15	
State Construction Inflation Rate:	3.00%	
Base Month:	Mar-2006	

Contingency Rate:	10.00%
Management Reserve:	3.00%
Tax Rate:	8.80%
Art Requirement Applies:	Yes
Project Admin by GA:	Yes
Higher Ed. Institution:	No
Alternative Public Works Project:	No

Project Cost Summary	
Primary MACC (escalated):	\$5,200,000
Secondary MACC (escalated):	\$11,016,000
Current Project Total:	\$22,647,049
Escalated Project Total:	\$25,493,078

Includes Formula Overrides:	Yes
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ITEM	BASE MONTH AMOUNT	FORMULA OVERRIDE	STANDARD FORMULA	ESCALATION FACTOR	ESCALATED COST
A. ACQUISITION COSTS					
1 Purchase/Lease Cost	\$0				
2 Appraisal and Closing Costs	\$0				
3 Right-of-Way Costs	\$0				
4 Offsite Mitigation	\$0				
5					
INSERT <--Double-Click Here to Insert a Row					
Total: Acquisition Costs	\$0			1.0000	\$0
B. CONSULTANT SERVICES					
1 Pre-Schematic Design Services					
a. Programming/Site Analysis	\$15,000				
b. Environmental Analysis	\$15,000				
c. Predesign Study	\$88,410				
d.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Pre-Schematic Design Services	\$118,410			1.0689	\$127,000
2 Construction Documents					
a. A/E Basic Design Services - Up to Bidding (69%)	\$270,615		\$270,615		
b. A/E Basic Design Services - Secondary (69%)	\$431,367		\$431,367		
SubTotal: Construction Documents	\$701,982			1.0822	\$760,000
3 Extra Services					
a. Civil Design (Above Basic Services)	\$82,000				
b. Geotechnical Investigation	\$15,000				
c. Commissioning	\$60,000				
d. Site Survey	\$10,000				
e. Testing	\$25,000				
f. Energy Conservation Report	\$7,000				
g. Voice/Data Consultant	\$5,000				
h. VE Participation & Implementation	\$17,000				
i. Constructability Review Participation	\$12,000				
j. Environmental Mitigation Services (EIS)	\$10,000				
k. Landscape Consultant	\$25,000				
l. Food Service Consultant	\$205,000				
m. LEED Management	\$80,000				
n. Cost Estimating	\$28,000				
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Extra Services	\$581,000			1.0822	\$629,000
4 Other Services					
a. Bid/Construction/Closeout - 31% of basic services	\$117,178	\$117,178	\$121,581		
b. Bid/Construction/Closeout - Secondary	\$181,936	\$181,936	\$193,802		
c. HVAC Balancing	\$50,000				
d. Commissioning and Training	\$80,000				
e.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Other Services	\$429,114			1.1299	\$485,000
5 Design Services Contingency					
a.	10.00%	\$152,230	\$152,230	\$183,051	
INSERT <--Double-Click Here to Insert a Row					

ITEM	BASE MONTH AMOUNT	FORMULA OVERRIDE	STANDARD FORMULA	ESCALATION FACTOR	ESCALATED COST
SubTotal: Design Services Contingency	\$152,230			1.1299	\$172,000
Total: Consultant Services	\$1,982,736				\$2,173,000
C. CONSTRUCTION CONTRACTS					
1 Site Work					
a. G10 - Site Preparation	\$104,167				
b. G20 - Site Improvements	\$50,000				
c. G30 - Site Mechanical Utilities	\$104,167				
d. G40 - Site Electrical Utilities	\$104,167				
e. G60 - Other Site Construction	\$50,000				
f. Landscape, Hardscape & UG Utilities	\$104,167				
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Site Work	\$516,668			1.1092	\$573,000
2 Related Project Costs					
a. Off site improvements	\$0				
b. City Utilities Relocation	\$0				
c. Parking Mitigation	\$0				
d. Stormwater Retention/Detention	\$208,335				
e. Wetland Mitigation	\$0				
f.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Related Project Costs	\$208,335			1.1092	\$231,000
3A Facility Construction - Primary					
a. A10 - Foundations	\$260,500				
b. A20 - Basement Construction	\$0				
c. B10 - Superstructure	\$260,500				
d. B20 - Exterior Closure	\$520,840				
e. B30 - Roofing	\$150,000				
f. C10 - Interior Construction	\$100,000				
g. C20 - Stairs	\$0				
h. C30 - Interior Finishes	\$300,000				
i. D10 - Conveying	\$0				
j. D20 - Plumbing Systems	\$200,000				
k. D30 - HVAC Systems	\$300,000				
l. D40 - Fire Protection Systems	\$80,000				
m. D50 - Electrical Systems	\$312,500				
n. F10 - Special Construction	\$156,250				
o. F20 - Selective Demolition	\$0				
p. General Conditions	\$1,250,000				
q.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Facility Construction - Primary	\$3,890,590			1.1299	\$4,396,000
Maximum Allowable Construction Cost (MACC) - Primary	\$4,615,593				\$5,200,000
3B Facility Construction -Secondary (By Building System)					
a. A10 - Foundations	\$1,500,000				
b. A20 - Basement Construction	\$0				
c. B10 - Superstructure	\$1,600,000				
d. B20 - Exterior Closure	\$850,000				
e. B30 - Roofing	\$500,000				
f. C10 - Interior Construction	\$200,000				
g. C20 - Stairs	\$50,000				
h. C30 - Interior Finishes	\$250,000				
i. D10 - Conveying	\$0				
j. D20 - Plumbing Systems	\$250,000				
k. D30 - HVAC Systems	\$650,000				
l. D40 - Fire Protection Systems	\$350,000				
m. D50 - Electrical Systems	\$650,000				
n. F10 - Special Construction	\$400,000				
o. F20 - Selective Demolition	\$0				
p. General Conditions	\$2,500,000				
q.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Facility Construction -Secondary (By Building System)	\$9,750,000			1.1299	\$11,016,000
Maximum Allowable Construction Cost (MACC) - Secondary	\$9,750,000				\$11,016,000
4 GC/CM Risk Contingency - NOT APPLICABLE					
5 GC/CM or Design Build Costs - NOT APPLICABLE					
6 Construction Contingencies					
a. Management Reserve	3.00%	\$430,968	\$430,968		
b. Allowance for Change Orders	10.00%	\$1,436,559	\$1,436,559		
c.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Construction Contingencies		\$1,867,527		1.1299	\$2,110,000
7 Sales Tax	8.80%	\$1,428,515	\$1,428,515		
a.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Sales Tax		\$1,428,515		1.1299	\$1,614,000
Total: Construction Contracts	\$17,661,635				\$19,940,000

ITEM	BASE MONTH AMOUNT	FORMULA OVERRIDE	STANDARD FORMULA	ESCALATION FACTOR	ESCALATED COST
D. EQUIPMENT					
1 E10 - Equipment	\$1,630,000				
2 E20 - Furnishings	\$275,000				
3 F10 - Special Construction					
4 E10 - Active Holding Carts	\$420,000				
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Equipment	\$2,325,000			1.1299	\$2,627,000
99 Sales Tax	8.80%		\$204,600		
100					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Sales Tax	\$204,600			1.1299	\$231,000
Total: Equipment	\$2,529,600				\$2,858,000
E. ARTWORK					
1 Project Artwork	\$23,078		\$23,078		
2 Higher Education Artwork	N/A		N/A		
3					
INSERT <--Double-Click Here to Insert a Row					
Total: Artwork	\$23,078			1.0000	\$23,078
F. OTHER COSTS					
1 Mitigation Costs					
2 Hazardous Material Remediation/Removal					
3 Demolition of Old Kitchen (Building 16)	\$450,000				
INSERT <--Double-Click Here to Insert a Row					
Total: Other Costs	\$450,000			1.1092	\$499,000
G. PROJECT MANAGEMENT					
1 Agency Project Management	\$0		\$0		
2					
INSERT <--Double-Click Here to Insert a Row					
Total: Project Management	\$0			1.0000	\$0
GRAND TOTAL	\$22,647,049				\$25,493,078
NOTES					
Option A: Construct a new Kitchen, Pharmacy, Medical Equipment Storage, Central Supply, Commissary, and Inventory Control at the center of campus between the Treatment Mall and Legal Offenders Unit.					

OPTION B:

STATE OF WASHINGTON AGENCY/INSTITUTION PROJECT COST SUMMARY		
Agency	Department of Social and Health Services	
Project Name	WSH New Kitchen, Pharmacy, Central Supply - Option B	
Project Number	08-1-319	

Contact Information	
Analysis Date	5/20/2008
Analysis By	NAC Architecture
Contact Phone Number	206 441 4522

Statistics	Primary	Secondary	Total
Gross Square Feet	14,839	19,619	34,458
Net Square Feet	11,871	17,527	29,398
Efficiency	80%	89%	85%
Escalated MACC Cost per Sq.Ft.	350	259	298
Building Type	Dining Halls/Institute	Warehouses	
Is project a remodel?	No	No	
A/E Fee Class	B	C	
A/E Fee Percentage	8.50%	7.16%	

Schedule	Start Date	End Date
Predesign (mm-yyyy)	Sep-2007	May-2008
Design (mm-yyyy)	Jun-2008	Apr-2009
Construction (mm-yyyy)	Sep-2009	Oct-2010
Construction Duration (months)		13

Cost Summary	
Project Phase	Escalated Cost
Project Total	\$17,960,078
Consultant Services	\$2,132,000
Pre-Schematic Design Services	\$127,000
A/E Basic Design Services	\$720,000
A/E Extra Services/Reimbursables	\$629,000
Other Services	\$484,000
Design Services Contingency	\$172,000
Construction	\$12,639,000
MACC - Primary	\$5,189,000
MACC - Secondary	\$5,089,000
GC/CM Risk Contingency	\$0
GC/CM or Design Build	\$0
Contingencies	\$1,338,000
Sales Tax	\$1,023,000
Other	\$3,189,078
Acquisition	\$0
Equipment	\$2,451,000
Equipment Tax	\$216,000
Artwork	\$23,078
Agency Project Administration	\$0
Other	\$499,000

Other Details	
Number of C100s Included in Summary	1
Alternative Public Works Project	No
State Construction Inflation Rate	3.00%
Base Month	Mar-2006
Project Administration by	GA
Project Admin Impact to GA that is NOT included in Project Total	\$501,632

STATE OF WASHINGTON
AGENCY/INSTITUTION PROJECT COST ESTIMATE

FORM
C-100
Version 2.6.1
July 1, 2005

AGENCY:	Department of Social and Health Services	Analysis Date:	5/20/2008
PROJECT NAME:	WSH New Kitchen, Pharmacy, Central Supply - Option B	Analysis By:	NAC/Architecture
PROJECT NUMBER:	08-1-319	Contact Phone #:	206 441 4522
LOCATION:	Stellacoom, Washington	WARNING: Dates are NOT checked when you Paste!	

STATISTICS:	Primary	Secondary
Gross Square Feet	14,839	19,619
Net Square Feet	11,871	17,527
Efficiency	80%	89%
Estimated Cost per S.F.	350	259
Building Type:	Dining Halls/Institute	Warehouses
Is project a remodel?	No	No
A/E Fee Class	B	C
A/E Fee Percentage:	8.50%	7.16%

Project Schedule	Start Date	End Date
1. Predesign (mm-yyyy):	Sep-2007	May-2008
2. Design (mm-yyyy):	Jun-2008	Apr-2009
3. Construction (mm-yyyy):	Sep-2009	Oct-2010
5. Construction Duration (in Months):	13	
State Construction Inflation Rate:	3.00%	
Base Month:	Mar-2006	

Project Cost Summary	
Primary MACC (escalated):	\$5,189,000
Secondary MACC (escalated):	\$5,089,000
Current Project Total:	\$16,011,519
Escalated Project Total:	\$17,960,078

Contingency Rate:	10.00%
Management Reserve:	3.00%
Tax Rate:	8.80%
Art Requirement Applies:	Yes
Project Admin by GA:	Yes
Higher Ed. Institution:	No
Alternative Public Works Project:	No

Includes Formula Overrides:	Yes
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ITEM	BASE MONTH AMOUNT	FORMULA OVERRIDE	STANDARD FORMULA	ESCALATION FACTOR	ESCALATED COST
A. ACQUISITION COSTS					
1 Purchase/Lease Cost	\$0				
2 Appraisal and Closing Costs	\$0				
3 Right-of-Way Costs	\$0				
4 Offsite Mitigation	\$0				
5					
INSERT <--Double-Click Here to Insert a Row					
Total: Acquisition Costs	\$0			1.0000	\$0
B. CONSULTANT SERVICES					
1 Pre-Schematic Design Services					
a. Programming/Site Analysis	\$15,000				
b. Environmental Analysis	\$15,000				
c. Predesign Study	\$88,410				
d.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Pre-Schematic Design Services	\$118,410			1.0689	\$127,000
2 Construction Documents					
a. A/E Basic Design Services - Up to Bidding (69%)	\$260,816	\$260,816	\$270,615		
b. A/E Basic Design Services - Secondary (69%)	\$404,955	\$404,955	\$223,048		
SubTotal: Construction Documents	\$665,771			1.0822	\$720,000
3 Extra Services					
a. Civil Design (Above Basic Services)	\$82,000				
b. Geotechnical Investigation	\$15,000				
c. Commissioning	\$60,000				
d. Site Survey	\$10,000				
e. Testing	\$25,000				
f. Energy Conservation Report	\$7,000				
g. Voice/Data Consultant	\$5,000				
h. VE Participation & Implementation	\$17,000				
i. Constructability Review Participation	\$12,000				
j. Environmental Mitigation Services (EIS)	\$10,000				
k. Landscape Consultant	\$25,000				
l. Food Service Consultant	\$205,000				
m. LEED Management	\$80,000				
n. Cost Estimating	\$28,000				
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Extra Services	\$581,000			1.0822	\$629,000
4 Other Services					
a. Bid/Construction/Closeout - 31% of basic services	\$117,178	\$117,178	\$121,581		
b. Bid/Construction/Closeout - Secondary	\$181,936	\$181,936	\$100,210		
c. HVAC Balancing	\$50,000				
d. Commissioning and Training	\$80,000				
e.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Other Services	\$429,114			1.1271	\$484,000
5 Design Services Contingency					
a.	\$152,230	100.00%	\$152,230	\$179,430	
INSERT <--Double-Click Here to Insert a Row					

ITEM	BASE MONTH AMOUNT	FORMULA OVERRIDE	STANDARD FORMULA	ESCALATION FACTOR	ESCALATED COST
SubTotal: Design Services Contingency	\$152,230			1.1271	\$172,000
Total: Consultant Services	\$1,946,525				\$2,132,000
C. CONSTRUCTION CONTRACTS					
1 Site Work					
a. G10 - Site Preparation	\$104,167				
b. G20 - Site Improvements	\$50,000				
c. G30 - Site Mechanical Utilities	\$104,167				
d. G40 - Site Electrical Utilities	\$104,167				
e. G60 - Other Site Construction	\$50,000				
f. Landscape, Hardscape & UG Utilities	\$104,167				
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Site Work	\$516,668			1.1092	\$573,000
2 Related Project Costs					
a. Off site improvements	\$0				
b. City Utilities Relocation	\$0				
c. Parking Mitigation	\$0				
d. Stormwater Retention/Detention	\$208,335				
e. Wetland Mitigation	\$0				
f.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Related Project Costs	\$208,335			1.1092	\$231,000
3A Facility Construction - Primary					
a. A10 - Foundations	\$260,500				
b. A20 - Basement Construction	\$0				
c. B10 - Superstructure	\$260,500				
d. B20 - Exterior Closure	\$520,840				
e. B30 - Roofing	\$150,000				
f. C10 - Interior Construction	\$100,000				
g. C20 - Stairs	\$0				
h. C30 - Interior Finishes	\$300,000				
i. D10 - Conveying	\$0				
j. D20 - Plumbing Systems	\$200,000				
k. D30 - HVAC Systems	\$300,000				
l. D40 - Fire Protection Systems	\$80,000				
m. D50 - Electrical Systems	\$312,500				
n. F10 - Special Construction	\$156,250				
o. F20 - Selective Demolition	\$0				
p. General Conditions	\$1,250,000				
q.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Facility Construction - Primary	\$3,890,590			1.1271	\$4,385,000
Maximum Allowable Construction Cost (MACC) - Primary	\$4,615,593				\$5,189,000
3B Facility Construction -Secondary (By Building System)					
a. A10 - Foundations	\$600,000				
b. A20 - Basement Construction	\$0				
c. B10 - Superstructure	\$625,000				
d. B20 - Exterior Closure	\$500,000				
e. B30 - Roofing	\$250,000				
f. C10 - Interior Construction	\$100,000				
g. C20 - Stairs	\$50,000				
h. C30 - Interior Finishes	\$100,000				
i. D10 - Conveying	\$0				
j. D20 - Plumbing Systems	\$100,000				
k. D30 - HVAC Systems	\$290,000				
l. D40 - Fire Protection Systems	\$150,000				
m. D50 - Electrical Systems	\$300,000				
n. F10 - Special Construction	\$200,000				
o. F20 - Selective Demolition	\$0				
p. General Conditions	\$1,250,000				
q.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Facility Construction -Secondary (By Building System)	\$4,515,000			1.1271	\$5,089,000
Maximum Allowable Construction Cost (MACC) - Secondary	\$4,515,000				\$5,089,000
4 GC/CM Risk Contingency - NOT APPLICABLE					
5 GC/CM or Design Build Costs - NOT APPLICABLE					
6 Construction Contingencies					
a. Management Reserve	3.00%		\$273,918		\$273,918
b. Allowance for Change Orders	10.00%		\$913,059		\$913,059
c.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Construction Contingencies			\$1,186,977	1.1271	\$1,338,000
7 Sales Tax	8.80%		\$907,946		\$907,946
a.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Sales Tax			\$907,946	1.1271	\$1,023,000
Total: Construction Contracts	\$11,225,516				\$12,639,000

ITEM	BASE MONTH AMOUNT	FORMULA OVERRIDE	STANDARD FORMULA	ESCALATION FACTOR	ESCALATED COST
D. EQUIPMENT					
1 E10 - Equipment	\$1,630,000				
2 E20 - Furnishings	\$125,000				
3 F10 - Special Construction					
4 E10 - Active Holding Carts	\$420,000				
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Equipment	\$2,175,000			1.1271	\$2,451,000
99 Sales Tax	8.80%		\$191,400		
100					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Sales Tax	\$191,400			1.1271	\$216,000
Total: Equipment	\$2,366,400				\$2,667,000
E. ARTWORK					
1 Project Artwork	\$23,078		\$23,078		
2 Higher Education Artwork	N/A		N/A		
3					
INSERT <--Double-Click Here to Insert a Row					
Total: Artwork	\$23,078			1.0000	\$23,078
F. OTHER COSTS					
1 Mitigation Costs					
2 Hazardous Material Remediation/Removal					
3 Demolition of Old Kitchen (Building 16)	\$450,000				
INSERT <--Double-Click Here to Insert a Row					
Total: Other Costs	\$450,000			1.1092	\$499,000
G. PROJECT MANAGEMENT					
1 Agency Project Management	\$0		\$0		
2					
INSERT <--Double-Click Here to Insert a Row					
Total: Project Management	\$0			1.0000	\$0
GRAND TOTAL	\$16,011,519				\$17,960,078
NOTES					
Option B: Construct a new Kitchen, Pharmacy, Medical Equipment Storage, and Central Supply at the center of campus between the Treatment Mall and Legal Offenders Unit.					

OPTION B - PHASE 1:

STATE OF WASHINGTON AGENCY/INSTITUTION PROJECT COST SUMMARY		
Agency	Department of Social and Health Services	
Project Name	WSH New Kitchen Only - Option B Phase 1	
Project Number	08-1-319	

Contact Information	
Analysis Date	5/20/2008
Analysis By	NAC Architecture
Contact Phone Number	206 441 4522

Statistics	Primary	Secondary	Total
Gross Square Feet	14,839	1,360	16,199
Net Square Feet	11,871	1,100	12,971
Efficiency	80%	81%	80%
Escalated MACC Cost per Sq.Ft.	350	350	350
Building Type	Dining Halls/Institute	Dining Halls/Institute	
Is project a remodel?	No	No	
A/E Fee Class	B	B	
A/E Fee Percentage	8.50%	10.71%	

Schedule	Start Date	End Date
Predesign (mm-yyyy)	Sep-2007	May-2008
Design (mm-yyyy)	Jun-2008	Apr-2009
Construction (mm-yyyy)	Sep-2009	Oct-2010
Construction Duration (months)	13	

Cost Summary	
Project Phase	Escalated Cost
Project Total	\$11,778,078
Consultant Services	\$1,491,000
Pre-Schematic Design Services	\$127,000
A/E Basic Design Services	\$327,000
A/E Extra Services/Reimbursables	\$620,000
Other Services	\$277,000
Design Services Contingency	\$140,000
Construction	\$6,968,000
MACC - Primary	\$5,189,000
MACC - Secondary	\$476,000
GC/CM Risk Contingency	\$0
GC/CM or Design Build	\$0
Contingencies	\$738,000
Sales Tax	\$565,000
Other	\$3,319,078
Acquisition	\$0
Equipment	\$2,571,000
Equipment Tax	\$226,000
Artwork	\$23,078
Agency Project Administration	\$0
Other	\$499,000

Other Details	
Number of C100s Included in Summary	1
Alternative Public Works Project	No
State Construction Inflation Rate	3.00%
Base Month	Mar-2006
Project Administration by	GA
Project Admin Impact to GA that is NOT included in Project Total	\$329,612

STATE OF WASHINGTON
AGENCY/INSTITUTION PROJECT COST ESTIMATE

FORM
C-100
Version 2.6.1
July 1, 2005

AGENCY:	Department of Social and Health Services	Analysis Date:	5/20/2008
PROJECT NAME:	WSH New Kitchen Only - Option B Phase 1	Analysis By:	NAC/Architecture
PROJECT NUMBER:	08-1-319	Contact Phone #:	206 441 4522
LOCATION:	Stellacoom, Washington		

STATISTICS:	Primary	Secondary
Gross Square Feet	14,839	1,360
Net Square Feet	11,871	1,100
Efficiency	80%	81%
Estimated Cost per S.F.	350	350
Building Type:	Dining Halls/Institute	Dining Halls/Institute
Is project a remodel?	No	No
A/E Fee Class	B	B
A/E Fee Percentage:	8.50%	10.71%

Project Schedule	Start Date	End Date
1. Predesign (mm-yyyy):	Sep-2007	May-2008
2. Design (mm-yyyy):	Jun-2008	Apr-2009
3. Construction (mm-yyyy):	Sep-2009	Oct-2010
5. Construction Duration (in Months):	13	
State Construction Inflation Rate:	3.00%	
Base Month:	Mar-2006	

Project Cost Summary	
Primary MACC (escalated):	\$5,189,000
Secondary MACC (escalated):	\$476,000
Current Project Total:	\$10,510,756
Escalated Project Total:	\$11,778,078

Contingency Rate:	10.00%
Management Reserve:	3.00%
Tax Rate:	8.80%
Art Requirement Applies:	Yes
Project Admin by GA:	Yes
Higher Ed. Institution:	No
Alternative Public Works Project:	No

Includes Formula Overrides:	No
-----------------------------	----

ITEM	BASE MONTH AMOUNT	FORMULA OVERRIDE	STANDARD FORMULA	ESCALATION FACTOR	ESCALATED COST
A. ACQUISITION COSTS					
1 Purchase/Lease Cost	\$0				
2 Appraisal and Closing Costs	\$0				
3 Right-of-Way Costs	\$0				
4 Offsite Mitigation	\$0				
5					
INSERT <--Double-Click Here to Insert a Row					
Total: Acquisition Costs	\$0			1.0000	\$0
B. CONSULTANT SERVICES					
1 Pre-Schematic Design Services					
a. Programming/Site Analysis	\$15,000				
b. Environmental Analysis	\$15,000				
c. Predesign Study	\$88,410				
d.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Pre-Schematic Design Services	\$118,410			1.0689	\$127,000
2 Construction Documents					
a. A/E Basic Design Services - Up to Bidding (69%)	\$270,615		\$270,615		
b. A/E Basic Design Services - Secondary (69%)	\$31,183		\$31,183		
SubTotal: Construction Documents	\$301,798			1.0822	\$327,000
3 Extra Services					
a. Civil Design (Above Basic Services)	\$82,000				
b. Geotechnical Investigation	\$15,000				
c. Commissioning	\$60,000				
d. Site Survey	\$10,000				
e. Testing	\$25,000				
f. Energy Conservation Report	\$7,000				
g. Voice/Data Consultant	\$5,000				
h. VE Participation & Implementation	\$17,000				
i. Constructability Review Participation	\$12,000				
j. Environmental Mitigation Services (EIS)	\$10,000				
k. Landscape Consultant	\$25,000				
l. Food Service Consultant	\$205,000				
m. LEED Management	\$80,000				
n. Cost Estimating	\$20,000				
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Extra Services	\$573,000			1.0822	\$620,000
4 Other Services					
a. Bid/Construction/Closeout - 31% of basic services	\$121,581		\$121,581		
b. Bid/Construction/Closeout - Secondary	\$14,010		\$14,010		
c. HVAC Balancing	\$40,000				
d. Commissioning and Training	\$70,000				
e.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Other Services	\$245,591			1.1271	\$277,000
5 Design Services Contingency					
a.		10.00%			
	\$123,880		\$123,880		
INSERT <--Double-Click Here to Insert a Row					

ITEM	BASE MONTH AMOUNT	FORMULA OVERRIDE	STANDARD FORMULA	ESCALATION FACTOR	ESCALATED COST
SubTotal: Design Services Contingency	\$123,880			1.1271	\$140,000
Total: Consultant Services	\$1,362,679				\$1,491,000
C. CONSTRUCTION CONTRACTS					
1 Site Work					
a. G10 - Site Preparation	\$104,167				
b. G20 - Site Improvements	\$50,000				
c. G30 - Site Mechanical Utilities	\$104,167				
d. G40 - Site Electrical Utilities	\$104,167				
e. G60 - Other Site Construction	\$50,000				
f. Landscape, Hardscape & UG Utilities	\$104,167				
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Site Work	\$516,668			1.1092	\$573,000
2 Related Project Costs					
a. Off site improvements	\$0				
b. City Utilities Relocation	\$0				
c. Parking Mitigation	\$0				
d. Stormwater Retention/Detention	\$208,335				
e. Wetland Mitigation	\$0				
f.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Related Project Costs	\$208,335			1.1092	\$231,000
3A Facility Construction - Primary					
a. A10 - Foundations	\$260,500				
b. A20 - Basement Construction	\$0				
c. B10 - Superstructure	\$260,500				
d. B20 - Exterior Closure	\$520,840				
e. B30 - Roofing	\$150,000				
f. C10 - Interior Construction	\$100,000				
g. C20 - Stairs	\$0				
h. C30 - Interior Finishes	\$300,000				
i. D10 - Conveying	\$0				
j. D20 - Plumbing Systems	\$200,000				
k. D30 - HVAC Systems	\$300,000				
l. D40 - Fire Protection Systems	\$80,000				
m. D50 - Electrical Systems	\$312,500				
n.. F10 - Special Construction	\$156,250				
o.. F20 - Selective Demolition	\$0				
p. General Conditions	\$1,250,000				
q.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Facility Construction - Primary	\$3,890,590			1.1271	\$4,385,000
Maximum Allowable Construction Cost (MACC) - Primary	\$4,615,593				\$5,189,000
3B Facility Construction -Secondary (By Building System)					
a. A10 - Foundations	\$56,000				
b. A20 - Basement Construction	\$0				
c. B10 - Superstructure	\$55,000				
d. B20 - Exterior Closure	\$46,800				
e. B30 - Roofing	\$23,500				
f. C10 - Interior Construction	\$9,300				
g. C20 - Stairs	\$4,700				
h. C30 - Interior Finishes	\$9,400				
i. D10 - Conveying	\$0				
j. D20 - Plumbing Systems	\$9,400				
k. D30 - HVAC Systems	\$27,000				
l. D40 - Fire Protection Systems	\$14,000				
m. D50 - Electrical Systems	\$28,000				
n.. F10 - Special Construction	\$19,000				
o.. F20 - Selective Demolition	\$0				
p. General Conditions	\$120,000				
q.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Facility Construction -Secondary (By Building System)	\$422,100			1.1271	\$476,000
Maximum Allowable Construction Cost (MACC) - Secondary	\$422,100				\$476,000
4 GC/CM Risk Contingency - NOT APPLICABLE					
5 GC/CM or Design Build Costs - NOT APPLICABLE					
6 Construction Contingencies					
a. Management Reserve	3.00%		\$151,131	\$151,131	
b. Allowance for Change Orders	10.00%		\$503,769	\$503,769	
c.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Construction Contingencies			\$654,900		\$738,000
7 Sales Tax	8.80%		\$500,948	\$500,948	
a.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Sales Tax			\$500,948	1.1271	\$565,000
Total: Construction Contracts	\$6,193,541				\$6,968,000

ITEM	BASE MONTH AMOUNT	FORMULA OVERRIDE	STANDARD FORMULA	ESCALATION FACTOR	ESCALATED COST
D. EQUIPMENT					
1	E10 - Equipment				\$1,825,752
2	E20 - Furnishings				\$35,000
3	F10 - Special Construction				
4	E10 - Active Holding Carts				\$420,000
INSERT	<--Double-Click Here to Insert a Row				
	SubTotal: Equipment			1.1271	\$2,571,000
99	Sales Tax				
100	8.80%		\$200,706		\$200,706
INSERT	<--Double-Click Here to Insert a Row				
	SubTotal: Sales Tax			1.1271	\$226,000
	Total: Equipment				\$2,797,000
E. ARTWORK					
1	Project Artwork		\$23,078		\$23,078
2	Higher Education Artwork		N/A		N/A
3					
INSERT	<--Double-Click Here to Insert a Row				
	Total: Artwork			1.0000	\$23,078
F. OTHER COSTS					
1	Mitigation Costs				
2	Hazardous Material Remediation/Removal				
3	Demolition of Old Kitchen (Building 16)				\$450,000
INSERT	<--Double-Click Here to Insert a Row				
	Total: Other Costs			1.1092	\$499,000
G. PROJECT MANAGEMENT					
1	Agency Project Management		\$0		\$0
2					
INSERT	<--Double-Click Here to Insert a Row				
	Total: Project Management			1.0000	\$0
GRAND TOTAL			\$10,510,756		\$11,778,078
NOTES					
Option B: Construct a new Kitchen, Pharmacy, Medical Equipment Storage, and Central Supply at the center of campus between the Treatment Mall and Legal Offenders Unit.					

OPTION B- FUTURE:

STATE OF WASHINGTON AGENCY/INSTITUTION PROJECT COST SUMMARY		
Agency	Department of Social and Health Services	
Project Name	WSH New Bulk Commissary - Option B (Future)	
Project Number	08-1-319	

Contact Information	
Analysis Date	5/20/2008
Analysis By	NAC Architecture
Contact Phone Number	206 441 4522

Statistics	Primary	Secondary	Total
Gross Square Feet	29,345	0	29,345
Net Square Feet	27,475	0	27,475
Efficiency	94%	0%	94%
Escalated MACC Cost per Sq.Ft.	200	0	200
Building Type	Warehouses		
Is project a remodel?	No		
A/E Fee Class	C		
A/E Fee Percentage	7.08%		

Schedule	Start Date	End Date
Predesign (mm-yyyy)	Sep-2007	May-2008
Design (mm-yyyy)	Jun-2008	Apr-2009
Construction (mm-yyyy)	Sep-2011	Jun-2012
Construction Duration (months)	9	

Cost Summary	
Project Phase	Escalated Cost
Project Total	\$8,324,000
Consultant Services	\$839,000
Pre-Schematic Design Services	\$63,000
A/E Basic Design Services	\$320,000
A/E Extra Services/Reimbursables	\$140,000
Other Services	\$235,000
Design Services Contingency	\$81,000
Construction	\$7,201,000
MACC - Primary	\$5,856,000
MACC - Secondary	\$0
GC/CM Risk Contingency	\$0
GC/CM or Design Build	\$0
Contingencies	\$762,000
Sales Tax	\$583,000
Other	\$284,000
Acquisition	\$0
Equipment	\$238,000
Equipment Tax	\$21,000
Artwork	\$25,000
Agency Project Administration	\$0
Other	\$0

Other Details	
Number of C100s Included in Summary	1
Alternative Public Works Project	No
State Construction Inflation Rate	3.00%
Base Month	Mar-2006
Project Administration by	GA
Project Admin Impact to GA that is NOT included in Project Total	\$231,600

STATE OF WASHINGTON
AGENCY/INSTITUTION PROJECT COST ESTIMATE

FORM
C-100
Version 2.6.1
July 1, 2005

AGENCY:	Department of Social and Health Services	Analysis Date:	5/20/2008
PROJECT NAME:	WSH New Bulk Commissary - Option B (Future)	Analysis By:	NAC/Architecture
PROJECT NUMBER:	08-1-319	Contact Phone #:	206 441 4522
LOCATION:	Stellacoom, Washington		

STATISTICS:	Primary	Secondary
Gross Square Feet	29,345	
Net Square Feet	27,475	
Efficiency	94%	0%
Estimated Cost per S.F.	200	0
Building Type:	Warehouses	
Is project a remodel?	No	No
A/E Fee Class	C	
A/E Fee Percentage:	7.08%	0.00%

Project Schedule	Start Date	End Date
1. Pre-design (mm-yyyy):	Sep-2007	May-2008
2. Design (mm-yyyy):	Jun-2008	Apr-2009
3. Construction (mm-yyyy):	Sep-2011	Jun-2012
5. Construction Duration (in Months):	9	
State Construction Inflation Rate:	3.00%	
Base Month:	Mar-2006	

Project Cost Summary	
Primary MACC (escalated):	\$5,856,000
Secondary MACC (escalated):	\$0
Current Project Total:	\$7,047,207
Escalated Project Total:	\$8,324,000

Contingency Rate:	10.00%
Management Reserve:	3.00%
Tax Rate:	8.80%
Art Requirement Applies:	Yes
Project Admin by GA:	Yes
Higher Ed. Institution:	No
Alternative Public Works Project:	No

Includes Formula Overrides:	Yes
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ITEM	BASE MONTH AMOUNT	FORMULA OVERRIDE	STANDARD FORMULA	ESCALATION FACTOR	ESCALATED COST
A. ACQUISITION COSTS					
1 Purchase/Lease Cost	\$0				
2 Appraisal and Closing Costs	\$0				
3 Right-of-Way Costs	\$0				
4 Offsite Mitigation	\$0				
5					
INSERT <--Double-Click Here to Insert a Row					
Total: Acquisition Costs	\$0			1.0000	\$0
B. CONSULTANT SERVICES					
1 Pre-Schematic Design Services					
a. Programming/Site Analysis	\$7,500				
b. Environmental Analysis	\$7,500				
c. Pre-design Study	\$44,205				
d.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Pre-Schematic Design Services	\$59,205			1.0689	\$63,000
2 Construction Documents					
a. A/E Basic Design Services - Up to Bidding (69%)	\$295,392	\$295,392	\$240,465		
b. A/E Basic Design Services - Secondary (69%)	\$0		\$0		
SubTotal: Construction Documents	\$295,392			1.0822	\$320,000
3 Extra Services					
a. Civil Design (Above Basic Services)	\$44,500				
b. Geotechnical Investigation	\$7,500				
c. Commissioning	\$30,000				
d. Site Survey	\$5,000				
e. Testing	\$12,500				
f. Energy Conservation Report	\$5,000				
g. Voice/Data Consultant	\$2,500				
h. VE Participation & Implementation	\$5,000				
i. Constructability Review Participation	\$7,500				
j. Environmental Mitigation Services (EIS)	\$5,000				
k. Landscape Consultant	\$5,000				
l.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Extra Services	\$129,500			1.0822	\$140,000
4 Other Services					
a. Bid/Construction/Closeout - 31% of basic services	\$132,712	\$132,712	\$108,035		
b. Bid/Construction/Closeout - Secondary	\$0		\$0		
c. HVAC Balancing	\$25,000				
d. Commissioning and Training	\$40,000				
e.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Other Services	\$197,712			1.1899	\$235,000
5 Design Services Contingency					
a.		10.00%	\$68,181	\$68,181	\$68,181
INSERT <--Double-Click Here to Insert a Row					

ITEM	BASE MONTH AMOUNT	FORMULA OVERRIDE	STANDARD FORMULA	ESCALATION FACTOR	ESCALATED COST
SubTotal: Design Services Contingency	\$68,181			1.1899	\$81,000
Total: Consultant Services	\$749,990				\$839,000
C. CONSTRUCTION CONTRACTS					
1 Site Work					
a. G10 - Site Preparation	\$75,000				
b. G20 - Site Improvements	\$25,000				
c. G30 - Site Mechanical Utilities	\$50,000				
d. G40 - Site Electrical Utilities	\$50,000				
e. G60 - Other Site Construction	\$25,000				
f. Landscape, Hardscape & UG Utilities	\$50,000				
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Site Work	\$275,000			1.1768	\$324,000
2 Related Project Costs					
a. Off site improvements	\$0				
b. City Utilities Relocation	\$0				
c. Parking Mitigation	\$0				
d. Stormwater Retention/Detention	\$150,000				
e. Wetland Mitigation	\$0				
f.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Related Project Costs	\$150,000			1.1768	\$177,000
3A Facility Construction - Primary					
a. A10 - Foundations	\$750,000				
b. A20 - Basement Construction	\$0				
c. B10 - Superstructure	\$750,000				
d. B20 - Exterior Closure	\$300,000				
e. B30 - Roofing	\$200,000				
f. C10 - Interior Construction	\$50,000				
g. C20 - Stairs	\$0				
h. C30 - Interior Finishes	\$50,000				
i. D10 - Conveying	\$0				
j. D20 - Plumbing Systems	\$100,000				
k. D30 - HVAC Systems	\$200,000				
l. D40 - Fire Protection Systems	\$300,000				
m. D50 - Electrical Systems	\$300,000				
n.. F10 - Special Construction	\$100,000				
o.. F20 - Selective Demolition	\$0				
p. General Conditions	\$1,400,000				
q.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Facility Construction - Primary	\$4,500,000			1.1899	\$5,355,000
Maximum Allowable Construction Cost (MACC) - Primary	\$4,925,000				\$5,856,000
3B Facility Construction -Secondary (By Building System)					
a. A10 - Foundations					
b. A20 - Basement Construction					
c. B10 - Superstructure					
d. B20 - Exterior Closure					
e. B30 - Roofing					
f. C10 - Interior Construction					
g. C20 - Stairs					
h. C30 - Interior Finishes					
i. D10 - Conveying					
j. D20 - Plumbing Systems					
k. D30 - HVAC Systems					
l. D40 - Fire Protection Systems					
m. D50 - Electrical Systems					
n.. F10 - Special Construction					
o.. F20 - Selective Demolition					
p. General Conditions					
q.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Facility Construction -Secondary (By Building System)	\$0			1.1899	\$0
Maximum Allowable Construction Cost (MACC) - Secondary	\$0				\$0
4 GC/CM Risk Contingency - NOT APPLICABLE					
5 GC/CM or Design Build Costs - NOT APPLICABLE					
6 Construction Contingencies					
a. Management Reserve	3.00%	\$147,750	\$147,750		
b. Allowance for Change Orders	10.00%	\$492,500	\$492,500		
c.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Construction Contingencies		\$640,250		1.1899	\$762,000
7 Sales Tax	8.80%	\$489,742	\$489,742		
a.					
INSERT <--Double-Click Here to Insert a Row					
SubTotal: Sales Tax		\$489,742		1.1899	\$583,000
Total: Construction Contracts		\$6,054,992			\$7,201,000

ITEM	BASE MONTH AMOUNT	FORMULA OVERRIDE	STANDARD FORMULA	ESCALATION FACTOR	ESCALATED COST
D. EQUIPMENT					
1	E10 - Equipment				\$0
2	E20 - Furnishings				\$200,000
3	F10 - Special Construction				
4					
INSERT	<--Double-Click Here to Insert a Row				
	SubTotal: Equipment			1.1899	\$238,000
99	Sales Tax	8.80%			
100			\$17,600		\$17,600
INSERT	<--Double-Click Here to Insert a Row				
	SubTotal: Sales Tax			1.1899	\$21,000
	Total: Equipment				\$259,000
E. ARTWORK					
1	Project Artwork		\$24,625		\$24,625
2	Higher Education Artwork		N/A		N/A
3					
INSERT	<--Double-Click Here to Insert a Row				
	Total: Artwork			1.0000	\$25,000
F. OTHER COSTS					
1	Mitigation Costs				
2	Hazardous Material Remediation/Removal				
3					
INSERT	<--Double-Click Here to Insert a Row				
	Total: Other Costs		\$0	1.1768	\$0
G. PROJECT MANAGEMENT					
1	Agency Project Management		\$0		\$0
2					
INSERT	<--Double-Click Here to Insert a Row				
	Total: Project Management		\$0	1.0000	\$0
GRAND TOTAL			\$7,047,207		\$8,324,000
NOTES					
Option B - Future: Construct a new Commissary and Inventory Control facility on the west end of the campus.					

9.5 Department of Social and Health Services Capital Project Request

Version: MH MHD-Majors

Report Number: CBS002

Date Run: 8/14/2008 2:11PM

Project Number: 20081319

Project Title: Western State Hospital New Kitchen and Commissary Building

Description

Starting Fiscal Year: 2008

Project Class: Preservation

Agency Priority: 301

Project Summary

Design and construct a new Kitchen and Commissary Building at Western State Hospital to consolidate the existing food storage and food preparation facilities. The existing structures are woefully outdated and poorly configured to meet the hospital's needs.

Project Description

1) WHAT IS THE PROPOSED PROJECT?

a) Briefly describe the nature of the proposed project and what will be constructed.

This project will: construct a new Kitchen and Commissary at Western State Hospital, demolish the existing kitchen, and remodel the Dining Building for patient activities. Consistent with the master plan, this project will also be one additional step in developing the central core of the hospital to create a central campus quadrangle focused on patient services but separate from vehicular traffic and campus support services.

This project is located at Western State Hospital, City of Lakewood, at GPS 47.180000, -122.567000.

2) WHAT IS THE BUSINESS PROBLEM DRIVING THIS REQUEST?

a) What problem or business opportunity is being addressed?

The master plan for Western State Hospital calls for the development of a central campus quadrangle focused on patient activities and services but separate from vehicular traffic and campus support services. The existing Kitchen/Dining Building operates in the middle of this proposed quadrangle.

The kitchen facility is inadequately housed in a space originally designed as the central boiler plant. The kitchen is poorly laid-out with outdated equipment in need of constant repair, inefficiently organized and does not allow progression to modern cooking techniques. The building is not structurally sound and should not be renovated. The kitchen and dining functions need to be located in a new building on the perimeter of the quadrangle.

The commissary building, which receives and stores most goods destined for the kitchen, is located some distance away, and requires transporting the goods by forklift. This is labor intensive and has numerous safety issues for anyone between the existing kitchen and commissary. The design for the new commissary should provide adequate space for dietary and commissary services with coolers, freezers, and dry storage areas sized to use carts for moving food stores.

This new kitchen facility should be designed for modern and efficient food service storage, preparation, handling and delivery systems. It should be designed as a flexible space to allow installation of a "cook-chill" food preparation system (10% food costs savings and 25% labor cost savings are projected) and provide convenient access into and out of the building to accommodate bulk food handling and delivery systems.

This new building should also include the commissary, which is poorly accommodated in the existing Commissary Building. The existing Commissary Building is a three-story structure, has a floor plan that does not accommodate efficient high-bay storage systems and is inconveniently located far from the kitchen. The design for the new commissary should provide adequate space for food commissary functions with coolers, freezers, and dry storage areas sized to use carts for moving food stores.

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2009-11 Biennium

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Version: MH MHD-Majors

Report Number: CBS002

Date Run: 8/14/2008 2:11PM

Project Number: 20081319

Project Title: Western State Hospital New Kitchen and Commissary Building

Description

The central campus quadrangle should enable the hospital to implement a treatment plan based on a program that includes a secure, spacious, vehicle-free hospital quadrangle. This program would be available to most civilly committed patients, not only those that have grounds privileges. This quadrangle needs to be enclosed for community, patient, and staff safety; landscaped to feature therapeutic, recreational, and social opportunities; provide a sense of place; and allow internal movement within a secure perimeter.

The pre-design and design effort for this project must be coordinated with that of the Laundry Building, project 2006-2-325. Both facilities will be located in the same service zone and the designs should be coordinated to maximize efficiencies in service routes, utilities, loading dock functions, waste handling, etc.

b) What kind of change in results or performance can be expected if this proposal is implemented?

The project will greatly improve the kitchen for the dietary demands of the hospital patients. It will improve workflows and eliminate cross contamination of foodstuffs. The "quick chill" program will result in efficiencies in food preparation, quality and staffing requirements. The campus becomes safer for all patients, staff, and visitors through greatly reduced interaction with food delivery vehicles and forklifts.

Completion of this project will move forward the next phase of development for the Western State Hospital campus. Each advance toward the quadrangle completion has a compelling impact on clients. Those patients with ground privileges are able to go outside and move around with some freedom. Patients that are not allowed that freedom, for their security or the security of others, will be able to spend the day in a much lower-density ward where space can be used therapeutically.

When the quadrangle is complete the majority of civilly committed patients will be able to have grounds privileges. Overall, this plan will promote better treatment and more treatment options. This will allow patients to spend more time away from confining wards. This results in shorter, more effective and less costly treatment, reduced future census pressure for additional wards and the avoidance of future capital costs to develop additional wards.

Stakeholders include institutional, program and clinical staff, mental health advocates, the City of Lakewood and the local historical society.

c) Why is this project necessary?

The master plan for Western State Hospital calls for the development of a central campus quadrangle focused on patient activities and services but separate from vehicular traffic and campus support services. The existing Kitchen/Dining Building operates in the middle of this proposed quadrangle. The kitchen facility is inadequately housed in a space originally designed as the central boiler plant. The kitchen is poorly laid-out with outdated equipment in need of constant repair, inefficiently organized, and does not allow progression to modern cooking techniques. The building is not structurally sound and should not be renovated. The kitchen and dining functions need to be located in a new building on the perimeter of the quadrangle.

This new building should also include the commissary, which is poorly accommodated in the existing Commissary Building. The existing Commissary Building is a three-story structure, has a floor plan that does not accommodate efficient high-bay storage systems and is located some distance from the kitchen. The design for the new commissary should provide adequate space for food commissary functions with coolers, freezers, and dry storage areas sized to use carts for moving food stores.

d) For preservation projects, describe whether this project reduces needs on the agency's preservation backlog.

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Project Number: 20081319

Project Title: Western State Hospital New Kitchen and Commissary Building

Description

This project will build a new kitchen and commissary and make way for demolishing the old kitchen building as part of the WSH Central Campus project. The old kitchen, overall, is in "fair" condition as reported in the 2008 update of the Facilities Condition Assessment (FCA) and has a preservation backlog of \$2.6 million.

f) Effects of non-funding? Describe the consequences to stakeholders and client groups of not funding the request.

Not completing this project stops the strategic plan of developing the quadrangle concept for the benefit of the patients. Increased maintenance costs in having to keep the existing services operational. Potential loss of federal funding by not providing a kitchen that meets the JCAHO and department of health minimum standards.

3) HOW DOES THE PROJECT SUPPORT THE AGENCY AND STATEWIDE RESULTS?

a) Briefly describe how the project contributes to one or more of the following:

- The agency's strategic plan and master plan
- Statewide results or strategies identified by a Priorities of Government results team
- Enabling the agency to do a better job with one or more of its activities.

The agency's strategic plan includes a system where mental health consumers are served in community settings and state owned and operated hospitals. Many of these people are served in one of the department's three psychiatric hospitals. The department has the responsibility of protecting the public, providing mental health services, and ensuring safe and secure facilities for staff and mentally ill patients.

The master plan developed for Western State Hospital has laid out a systematic approach to campus renovations and development. The next phase in the master plan, to be completed over several biennia, calls for the construction of a new Kitchen/Commissary/Pharmacy Building (2009-2011), development of the campus quadrangle and associated site improvements (2011-2013). The facility improvements included in this project support treatment and rehabilitative programs for persons with mental illness.

From the DSHS 2009-2013 Strategic Plan:

MHD's Strategic Plan includes several priorities, which may have with impacts on institutional facilities:

- Improve access to and quality of mental health services
- Improve supports for recovery and resiliency of mental health consumers
- Increase consumer and community safety through effective treatment
- Strengthen capacity to support the overall health of individuals with mental illness
- Make sound and effective community investments

Future Challenges

MHD is committed to creating a seamless system of care that is timely, effective, and efficient. It is a system that treats each person holistically and embraces each person's ability to recover and gain the skills, insight, and personal and interpersonal reserves needed to be resilient as circumstances and symptoms change.

For children and youth, acute inpatient services are provided either in community psychiatric hospitals or in facilities specifically suited for children and youths. These Children's Long-Term Inpatient (CLIP) facilities provide inpatient care for those children and youth who need extended inpatient services. The CLIP facilities include the Child Study and treatment Center in Lakewood, a 47-bed state operated facility, and three other vendor contracted facilities.

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Project Title: Western State Hospital New Kitchen and Commissary Building

Description

Adult acute services begin in community psychiatric hospital or in free-standing evaluation and treatment centers (E&Ts). For individuals requiring longer periods of treatment than community hospitals and E&Ts are able to provide, long term treatment services are provided by the two adult psychiatric hospitals operated by the state. Eastern State Hospital and Western State Hospital provide care for approximately 1,200 individuals each day.

Capital investments are required at the three hospitals to preserve existing assets and accommodate policy initiatives. The following capital projects will be included in the DSHS Ten Year Capital Plan: 9. Western State Hospital: New Dietary Services and Commissary Building.

4) WHAT ARE THE SPECIFIC BENEFITS OF THIS PROJECT?

a) What will this investment buy?

Completion of this project will move forward the next phase of development for the Western State Hospital campus. Each advance toward the quadrangle completion has a compelling impact on clients. Those patients with ground privileges are able to go outside and move around freely. Patients that are not allowed that freedom, for their security or the security of others, will be able to spend the day in a much lower-density ward where space can be used therapeutically.

When the quadrangle is complete, the majority of civilly committed patients will be able to have grounds privileges. Overall, this plan will promote more effective treatment with more treatment options. This will allow patients to spend more time away from confining wards. This results in shorter, more effective and less costly treatment, reduced future census pressure for additional wards and the avoidance of future capital costs to develop additional wards.

b) Does this project increase capacity to accommodate anticipated changes in caseloads and enrollments?

The subsequent campus quadrangle will accommodate a more effective rehabilitative program. This will facilitate increased recovery for the patients. As these patients transition to less structured treatment facilities, it will allow new patients to enter the program.

c) Will this project reduce the preservation backlog?

No, not directly. The construction of a new kitchen and commissary building will reduce the day-to-day maintenance and repair attention required at the two existing structures. But, because the buildings are not being demolished as part of this project, some ongoing maintenance attention will be required. The DSHS Facility Condition Assessment database will be revised to reflect that these two structures are vacant and the preservation backlog costs will be reduced accordingly. Note: The existing Kitchen will be demolished as part of project 2110-2-375, WSH: Central Campus Redevelopment. The Commissary Building will be considered for reuse as maintenance offices.

d) Does this project change the condition of a "needs improvement" facility to "adequate" or "superior?"

No. This project only funds new construction. No work is proposed for the existing kitchen or Commissary Building.

e) Does this extend facility life or enhance health and safety?

This project greatly extends the life of the kitchen operations and provides new facility that meets code and compliance health and safety issues.

5) HOW WILL CLIENTS BE AFFECTED AND SERVICES CHANGE IF THIS PROJECT IS FUNDED?

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Description

a) What levels of service are provided today and at what cost and staffing level?

The kitchen facility currently provides bulk service food to the patients and individual "special" diets. FTE level for Dietary Services is at 88 and the overall expense of Dietary Services is incorporated in our overall Operational Budget for the Hospital. The Commissary currently operates out of a very inefficient building with an FTE level of 6 and the plan is to co-locate the Dietary Warehouse function with the Commissary to combine the two warehouse functions. This is also included within the overall operating budget of WSH.

b) How will existing services be altered by the project?

The goal is to increase the delivery efficiency of food to the Hospital Campus. The delivery system will have flexibility to move from a bulk food delivery system to an individual plate system.

c) Are additional FTEs involved for either operating or capital? If so, how many?

The new kitchen and commissary completion requires the current level of staffing for maintenance. However, with the change in food production and the co-locating of kitchen and commissary, the efficiencies should reduce the level of food service and commissary staff. This would include 8.0 FTEs for kitchen aids. A 0.4 capital FTE is required in the 2007-2009 biennium to manage the financial, predesign and design activities for this project.

6) HOW WILL OTHER STATE PROGRAMS OR UNITS OF GOVERNMENT BE AFFECTED IF THIS PROJECT IS FUNDED?

a) Describe how the project impacts other agency programs, agencies, or another unit of local or federal government?

With the successful completion of the project, including the campus quadrangle WSH will accommodate more effective rehabilitative programs. This will facilitate better recovery for the patients. As the patients transition to less structured treatment facilities, it will allow new patients to enter the program. This will reduce time-until-treatment and reduce waiting list for those with mental health needs awaiting treatment. As a result, other governmental agencies involved in mental health will have the potential to serve additional clients.

7) WHAT IS THE IMPACT ON THE STATE'S OPERATING BUDGET?

a) If the project adds, reduces, or alters space for the agency, describe any changes in maintenance and operating requirements.

The new facility should reduce corrective maintenance and increase preventive maintenance. It requires maintenance staff training in recent improvements to the technology of refrigeration and HVAC systems. Completion of the project may reduce the kitchen aid FTEs and food costs. The initial estimate is 8.0 FTEs, \$350,000 in staff costs, and \$50,000 in reduced food costs. The predesign will study and determine the actual estimate for food cost savings.

b) List estimated FTEs and costs, and the year in which they will impact the operating budget.

Completion of the project should reduce the number of FTEs to operate and maintain the new kitchen and commissary facility. This should begin in 2010, when the project is completed. The initial estimate is 8.0 FTEs in kitchen aids.

For maintenance, the project would add the need for an HVAC Tech at \$50,000 per year at the time of taking possession of the building and every year thereafter.

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Description

c) If a project is tied to an agency's operating budget decision package, the decision package code should be referenced in the narrative.

The operating decision package will exist in the 2009-11 biennium. For the 2007-09 biennium, decision package PL CX - WSH Food Service requests an additional 8.0 FTEs for kitchen aids. If this project is funded, the need for the 8.0 FTEs would cease. Therefore, this project request shows the reduction of the kitchen aid staff from this decision package.

d) For preservation projects, how much has the agency spent from its maintenance funds in the operating budget over the life of this asset? If none, why was the asset not maintained?

The kitchen and commissary buildings have been marked for some years as needing replacement. The buildings have had sufficient maintenance to operate in their current condition until replacement.

8) WHY IS THIS THE BEST OPTION OR ALTERNATIVE?

a) Include a discussion of alternatives explored by the agency including the pros and cons of the alternatives, why they were not selected, and why the recommended alternative was chosen. Examples of options include lease, lease purchase, or build. Include known risks of the options considered.

The current kitchen and commissary configuration is inefficient, unsafe, and fails to meet regulations and codes. The building housing the kitchen has outlived its useful life. The overall plan for WSH is to improve the program with an enclosed quadrangle. This requires moving the kitchen outside the space in the proposal. An on-site kitchen that can meet the multiple dietary needs of our patients is the most efficient and economical option. The quick chill food preparation is more efficient and provides a better tasting and more varied diet for the patients. Relocation in a new building addresses many health and safety issues. Updated equipment and processes result in reduced levels of staffing to perform the same service.

The alternative is to remodel the kitchen in the existing building. This will not meet the plan requirements for an enclosed quadrangle to benefit the clients. It will not provide a more efficient and safe operation between the kitchen and the commissary. It could result in lawsuits, code violation fines, and the potential loss of federal funding. Therefore, this alternative is not an acceptable consideration.

b) How does this cost estimate compare to projects of similar nature?

Pierce County area constructions costs provide the basis for construction estimates. These costs continue to rise due to material volatility and a tight labor market. The estimates are comparable to other project of this nature and building type.

d) For programmatic projects over \$5 million, has predesign or design been completed? If so, what new information did this work reveal?

Not applicable.

9) WHAT IS THE AGENCY'S PROPOSED FUNDING STRATEGY FOR THE PROJECT?

a) What is the proposed funding option for this project (long-term financing, alternative financing or cash)? Are these dedicated fund sources?

DSHS seeks funding for the predesign and design from the Charitable, Educational, Penal, and Reformatory Institutions Account - Fund 042-1. We seek funding for construction from the State Building Construction Account - Fund 057-1. The State finances capital improvements for state assets with these funds.

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Description

b) Are matching funds available (federal or local)? Are there conditions related to these matching funds that may influence the decision?

No local or federal matching funds are available for this project.

Location

City: Lakewood

County: Pierce

Legislative District: 028

Funding

Acct Code	Account Title	Estimated Total	Expenditures		2009-11 Fiscal Period	
			Prior Biennium	Current Biennium	Reapprops	New Approps
057-1	State Bldg Constr-State	23,494,036		70,036		650,000
	Total	23,494,036	0	70,036	0	650,000
Future Fiscal Periods						
		<u>2011-13</u>	<u>2013-15</u>	<u>2015-17</u>	<u>2017-19</u>	
057-1	State Bldg Constr-State	22,774,000				
	Total	22,774,000	0	0	0	

Schedule and Statistics

	<u>Start Date</u>	<u>End Date</u>
Predesign	08/01/2007	06/01/2008
Design	7/1/2008	6/1/2009
Construction	7/1/2009	12/1/2010

	<u>Total</u>
Gross Square Feet:	33,866
Usable Square Feet:	28,179
Efficiency:	83.2%
Escalated MACC Cost per Sq. Ft.:	249
Construction Type:	Dining Halls/Institute
Is this a remodel?	No
A/E Fee Class:	B
A/E Fee Percentage:	8.10%

Cost Summary

	<u>Escalated Cost</u>	<u>% of Project</u>
Acquisition Costs Total	0	0.0%
Consultant Services		
Pre-Schematic Design Services	118,742	0.8%
Construction Documents	452,323	3.0%

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Cost Summary

	<u>Escalated Cost</u>	<u>% of Project</u>
Consultant Services		
Extra Services	591,923	3.9%
Other Services	350,422	2.3%
Design Services Contingency	156,652	1.0%
Consultant Services Total	<u>1,670,062</u>	<u>11.0%</u>
 Maximum Allowable Construction Cost(MACC)	 8,430,983	
 Site work	518,950	3.4%
Related Project Costs	207,580	1.4%
Facility Construction	7,704,453	50.5%
GCCM Risk Contingency	0	0.0%
GCCM or Design Build Costs	0	0.0%
Construction Contingencies	1,267,346	8.3%
Non Taxable Items	0	0.0%
Sales Tax	853,454	5.6%
Construction Contracts Total	<u>10,551,783</u>	<u>69.2%</u>
 Equipment		
Equipment	2,313,330	15.2%
Non Taxable Items	0	0.0%
Sales Tax	203,573	1.3%
Equipment Total	<u>2,516,903</u>	<u>16.5%</u>
 Art Work Total	 42,155	 0.3%
 Other Costs Total	 467,055	 3.1%
 Project Management Total	 0	 0.0%
 Grand Total Escalated Costs	 <u><u>15,247,958</u></u>	
 Rounded Grand Total Escalated Costs	 15,248,000	

Operating Impacts

No Operating Impact

<u>Acct Code</u>	<u>Account Title</u>	<u>FY 2</u>	<u>FY 3</u>	<u>FY 4</u>
FTE	Full Time Employee	-4.0	8.0	8.0
001-1	General Fund-State	(164,000)	(328,000)	(328,000)
001-2	General Fund-Federal	(22,000)	(44,000)	(44,000)
001-7	General Fund-Private/Local	(14,000)	(28,000)	(28,000)

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Project Title: Western State Hospital New Kitchen and Commissary Building

SubProjects

SubProject Number: 10001559
SubProject Title: Predesign & Design

057-1 State Bldg Constr-State	650,000				650,000
Total	650,000	0	0	0	650,000

Future Fiscal Periods

	2011-13	2013-15	2015-17	2017-19
057-1 State Bldg Constr-State				
Total	0	0	0	0

Operating Impacts

No Operating Impact

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<u>Parameter</u>	<u>Entered As</u>	<u>Interpreted As</u>
Biennium	2009-11	2009-11
Agency	300	300
Version	MH-A	MH-A
Project Classification	*	All Project Classifications
Capital Project Number	20081319	20081319
Sort Order	Priority	Priority
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

9.6 Eco-Charette Summary

WSH Central Kitchen/Commissary LEED® Eco-Charette

JOB: Western State Hospital Central Kitchen/Commissary
 JOB NUMBER: 121-07052
 DATE: June 16th 2008

IN ATTENDANCE:

Bob Hubenthal	DSHS Capital Programs Chief
Searetha Kelly	GA/DSHS Team OCP
Nancy Deakins	GA/DSHS Team Manager
Ken Rose	HRSA Facilities Coordinator
Peter Maus	GA/DSHA Project Manager
Rich Christian	GA DSHA Team Project Manager
Stuart Simpson	GA Green Bldg Advisor
Dave Coonan	EQTech 4 Garage
Chris Campbell	WSH Facilities Manager
Dave Hess	WSH Facilities
Blaine D. Wickham	WSH Facilities
Bret Brand	WSH Facilities
Gary Lyons	WSH Dietary Services manager
Steve Daniels	WSH Transportation
Glenn Case	WSH Plumbing Shop
Kathy Goff	WSH Dietary Food Manager 3
Colin Jones	Principal Architect
Jean-Michel Boulot	Kitchen Design
Rick Hultz	Principal Mechanical Engineer
Steve Shiver	Project Manager
Steve Wescott	Project Architect
Matt Rumbaugh	Project Designer
Robert Landa	Project Architect

Meeting Minutes

1. Per RCW 39.35D.030, the state requires all major facility projects of public agencies receiving any funding in a state capital budget, or projects financed through a financing contract as defined in RCW 39.94.020, must be designed, constructed, and certified to at least the LEED silver standard. This subsection applies to major facility projects that have not entered the design phase prior to July 24, 2005, and to the extent appropriate LEED silver standards exist for that type of building or facility.
2. Colin Jones presented the LEED spreadsheet, describing the potential achievability of each LEED credit.



LEED-NC V2.2 CREDIT SCORECARD

Sustainable Sites

- SS Prereq 1** Construction Activity Pollution Prevention
-Post as Yes column on spreadsheet.
-This requirement is mandatory.
- SS Credit 1** Site Selection
-Post as "1" on spreadsheet.
-There are no known wetlands affecting this site. Steep slopes to the north will need to be taken into account.
- SS Credit 2** Development Density & Community Connectivity
-Post as "1" on spreadsheet.
-Credit is achievable by developing on an existing campus.
- SS Credit 3** Brownfield Redevelopment
-Post as "?" on spreadsheet.
-Credit may be achievable by quantifying the hazardous material of the original building as a brownfield.
-Confirm that original documentation of abatement supports this credit.
- SS Credit 4.1** Alternative Transportation -Public Transportation
-Post as "1" on spreadsheet.
-WSH already meets this requirement.
- SS Credit 4.2** Alternative Transportation -Bicycle Transportation & Changing Rooms
-Post as "1" on spreadsheet.
-WSH already has employees that bike to work. There is a shower facility for use in Building 9, which is adjacent to the proposed site.
- SS Credit 4.3** Alternative Transportation -Low-Emitting & Fuel Efficient Vehicles
-Post as "?" on spreadsheet.
-WSH already uses electric carts, which will contribute to this credit.
-Credit may be achievable by providing electrically powered delivery vehicles for 3% of Full-Time Equivalent (FTE) occupants and preferred parking for these vehicles.
- SS Credit 4.4** Alternative Transportation -Parking Capacity
-Post as "1" on spreadsheet.
-WSH currently has reserved carpool spaces on campus. This is mostly a matter of adding paint stripes and signs.
- SS Credit 5.1** Site Development -Protect or Restore Habitat
-Post as "1" on spreadsheet.

-The demolished morgue site to the northwest of the project site should be added into project scope. This new area can be restored to native habitat and will help protect the adjacent steep slopes. The landscaping around the new building should be composed of maintainable vegetation to discourage raccoons and other animals near the building.
-Project team to look at building orientation options to insure this credit is achieved.

SS Credit 5.2 Site Development -Maximize Open Space

-Post as “?” on spreadsheet.
-This credit can be achieved by minimizing the building and parking lot footprint, which will be analyzed during design.

SS Credit 6.1 Stormwater Design -Quantity Control

-Post as “1” under Yes column on spreadsheet.
-Good soil infiltration is anticipated.
-Vegetated roof is less desirable than using the roof area for solar collectors.

SS Credit 6.2 Stormwater Design -Quality Control

-Post as “1” under Yes column on spreadsheet.
-To the north east of project site and west of Building 28 there is a storm water detention pond that drains into ravine. If infiltration rates don't meet capacity, then project team will look into a similar approach.

SS Credit 7.1 Heat Island Effect -Non-Roof

-Post as “?” on spreadsheet.
-Use of additional trees, grasscrete or white concrete will be considered.
-LEED requires 50% minimum permeable area.
-Project Teams will identify what the City of Lakewood requirements are to determine if this credit is possible. (The City of Lakewood was subsequently contacted. WSH is in a public zoning district that does not have specific development requirements for permeability, but will be reviewed by the planning department to determine if it meets similar landscape screening requirements for a commercial building.)

SS Credit 7.2 Heat Island Effect -Roof

-Post as “1” on spreadsheet.
-A design strategy to achieve this credit can be the use of a white membrane roof.

SS Credit 8 Light Pollution Reduction

-Post as “1” on spreadsheet.
-Lighting should not trespass towards Building 9 or native areas to the north.
-A lighted walking path for safety and security will be required.

Water Efficiency

WE Credit 1.1 Water Efficient Landscaping -Reduce by 50%

-Post as “1” on spreadsheet.
-WSH has existing irrigation systems that are not always used or maintained.
-Project team will reduce water use by specifying drought tolerant native plants.

WE Credit 1.2 Water Efficient Landscaping -No Potable Use or No Irrigation

- Post as “?” on spreadsheet.
- WSH is concerned about plant establishment if no irrigation system is installed in the project.
- Recycling gray water for irrigation will be researched.

WE Credit 2 Innovative Wastewater Technologies

- Post as “1” on spreadsheet.
- WSH is currently metered at a residential equivalent.
- Use of a “Pulper” on the dishwasher will be considered. A “pulper” recycles process water for reuse.
- Reduction of the grease interceptor size will be researched.

WE Credit 3.1 Water Use Reduction -20% Reduction

- Post as “1” on spreadsheet.
- We will get this credit if we get Credit 2.
- If we don’t get credit 2, we can look at water efficient fixtures.
- Install water efficient spray nozzles on sinks.
- Use “nugget” ice maker instead of “clean” ice to reduce water use.

WE Credit 3.2 Water Use Reduction -30% Reduction

- Post as “?” on spreadsheet.
- This credit is not readily achievable based on the amount of water used in a kitchen facility.

Energy and Atmosphere

EA Prereq 1 Fundamental Commissioning of the Building Energy Systems

- Post as “Y” on spreadsheet.
- This requirement is mandatory.

EA Prereq 2 Minimum Energy Performance

- Post as “Y” on spreadsheet.
- This requirement is mandatory.

EA Prereq 3 Fundamental Refrigerant Management

- Post as “Y” on spreadsheet.
- This requirement is mandatory.
- Added valves and gauges will be required to verify performance.
- Eastern State Hospital may have a system where gauges are measured and reported on EMS system that can be used as a model.

EA Credit 1 Optimize Energy Performance

- Post as “3” on spreadsheet.
- Separate basic building needs from specific needs such as refrigeration.
- Use of a ground coupled system, cooling towers, high efficiency condensing boilers, variable refrigeration flow, and cogeneration will be considered.
- New kitchen should avoid using the existing campus steam system if possible. If the kitchen does not use steam, it may balance the rest of the campus needs. The idea of free steam is a bad assumption since there is significant energy loss in the distribution system.

-Determine which spaces could use waste heat from the kitchen. Look into waste heat being used to preheat hot water.
-Look into using displacement system for kitchen similar to Highline Community College.

EA Credit 2 On-Site Renewable Energy

-Post as “?” spreadsheet.
-Solar thermal and passive ventilation strategies.

EA Credit 3 Enhanced Commissioning

-Post as “1” on spreadsheet.
-Commissioning agent must be from a 3rd party..
-Commissioning agent needs to be involved early in the project.

EA Credit 4 Enhanced Refrigerant Management

-Post as “?” on spreadsheet.
-Project team will consider this credit.

EA Credit 5 Measurement and Verification

-Post as “1” on spreadsheet.
-Adjust building to perform to modeled performance.

EA Credit 6 Green Power

-Post as “?” on spreadsheet.
-This means buying 35% of the buildings baseline energy use through a green power provider.
-The City of Seattle is already 100% renewable energy, so it qualifies as a green power provider.
-Project Team needs to verify if WSH’s power provider already provides 100% renewable energy or if they could in the future.

Materials and Resources

MR Prereq 1 Storage and Collection of Recyclables

-Post as “Y” on spreadsheet.
-This requirement is mandatory.
-Currently WSH doesn’t have the storage capacity to hold recycling for pickup.
-Need to recycle cardboard and paper at a minimum.
-Need space for food waste storage/composting.
-Look into equipment that can convert food waste into a dry matter that can be combined into a typical composting process.
-Need to check with Pierce County or City of Lakewood to see if they would be able to haul recyclables or if WSH can haul recyclables to recycler.

MR Credit 1.1 Building Reuse -Maintain 75% of Existing Walls, Floor & Roof

-Not achievable. Post as “N” on spreadsheet.

MR Credit 1.2 Building Reuse -Maintain 95% of Existing Walls, Floor & Roof

-Not achievable. Post as “N” on spreadsheet.

MR Credit 1.3 Building Reuse -Maintain 50% of Non-Structural Elements

-Not achievable. Post as “N” on spreadsheet.

MR Credit 2.1 Construction Waste Management -Divert 50% from Disposal
-Post as “1” on spreadsheet.
-Contractor will be required to do this.

MR Credit 2.2 Construction Waste Management -Divert 75% from Disposal
-Post as “1” on spreadsheet.
-Contractor will be required to do this.

MR Credit 3.1 Materials Reuse -5%
-Not available. Post as “N” on spreadsheet.

MR Credit 3.2 Materials Reuse -10%
-Not available. Post as “N” on spreadsheet.

MR Credit 4.1 Recycled Content -10% (post-consumer + ½ pre-consumer)
-Post as “1” on spreadsheet.
-Project Team needs to verify this credit with selected building materials.

MR Credit 4.2 Recycled Content -20% (post-consumer + ½ pre-consumer)
-Post as possible “?” on spreadsheet.
-Project Team needs to verify this credit with selected building materials.

MR Credit 5.1 Regional Materials -10% Extracted, Processed & Mfr’d within 500 miles
-Post as “1” on spreadsheet.
- Project Team needs to verify this credit with selected building materials.

MR Credit 5.2 Regional Materials -20% Extracted, Processed & Mfr’d within 500 miles
-Post as possible “?” on spreadsheet.
- Project Team needs to verify this credit with selected building materials.

MR Credit 6 Rapidly Renewable Materials
-Post as “N” on spreadsheet.
-It is not likely that building materials will meet this requirement.

MR Credit 7 Certified Wood
-Post as possible (?) on Spreadsheet.
-There is interest in using certified wood. Need to verify this credit with building materials.

Indoor Environmental Quality

EQ Prereq 1 Minimum IAQ Performance
-Post as “Y” on spreadsheet.
-This requirement is mandatory.

EQ Prereq 2 Environmental Tobacco Smoke (ETS) Control
-Post as “Y” on spreadsheet.
-This requirement is mandatory.

EQ Credit 1 Outdoor Air Delivery Monitoring
-Post as “1” on spreadsheet.

-Look at using stack effect for natural ventilation with CO2 monitoring.
This approach may not work for the kitchen because of the volume
exhaust air required.

- EQ Credit 2** Increased Ventilation
-Post as "1" on spreadsheet.
- EQ Credit 3.1** Construction IAQ Management Plan -During Construction
-Post as "1" on spreadsheet.
- EQ Credit 3.2** Construction IAQ Management Plan -Before Occupancy
-Post as "1" on spreadsheet.
- EQ Credit 4.1** Low-Emitting Materials -Adhesives & Sealants
-Post as "1" on spreadsheet.
- EQ Credit 4.2** Low-Emitting Materials -Paints & Coatings
-Post as "1" on spreadsheet.
- EQ Credit 4.3** Low-Emitting Materials -Carpets
-Post as "1" on spreadsheet.
-Credit achievable with walk-off mats.
- EQ Credit 4.4** Low-Emitting Materials -Composite Wood & Agrifiber Products
-Not readily achievable. Post as "N" on spreadsheet.
- EQ Credit 5** Indoor Chemical & Pollutant Source Control
-Post as "1" under Yes column on spreadsheet.
-Provide venting for copiers, custodial rooms etc.
- EQ Credit 6.1** Controllability of Systems -Lighting
-Post as "1" under Yes column on spreadsheet.
-In a group facility like a kitchen, warehouse, the controllability only needs
to be controlled by the group not the individual.
- EQ Credit 6.2** Controllability of Systems -Thermal Comfort
-Post as "1" under Yes column on spreadsheet
-In a group facility like a kitchen, warehouse, the controllability only needs
to be by the group not the individual.
- EQ Credit 7.1** Thermal Comfort -Design
-Post as "1" under Yes column on spreadsheet.
-This should be possible.
-Conditions will be different for Staff at the cooking equipment.
- EQ Credit 7.2** Thermal Comfort -Verification
-Post as "1" on spreadsheet.
-State will conduct survey.
- EQ Credit 8.1** Daylight & Views -Daylight 75% of Spaces
-Post as "1" on spreadsheet.
- EQ Credit 8.2** Daylight & Views -Views for 90% of Spaces

-Post as “?” on spreadsheet. There may be too much equipment to accomplish this.

Innovation & Design Process

ID Credit 1.1 Innovation in Design
-Post as “1” on spreadsheet.

Credit 1.2 Innovation in Design
-Post as “1” on spreadsheet.

Credit 1.3 Innovation in Design
-Post as “1” on spreadsheet.

Credit 1.4 Innovation in Design
-Post as “1” on spreadsheet.

Credit 2 LEED® Accredited Professional
-Post as “1” on spreadsheet.
-The design team has multiple LEED AP that will be coordinating LEED process.

9.7 Kitchen Building 16 Facility Assessment



Facilities Condition Assessment

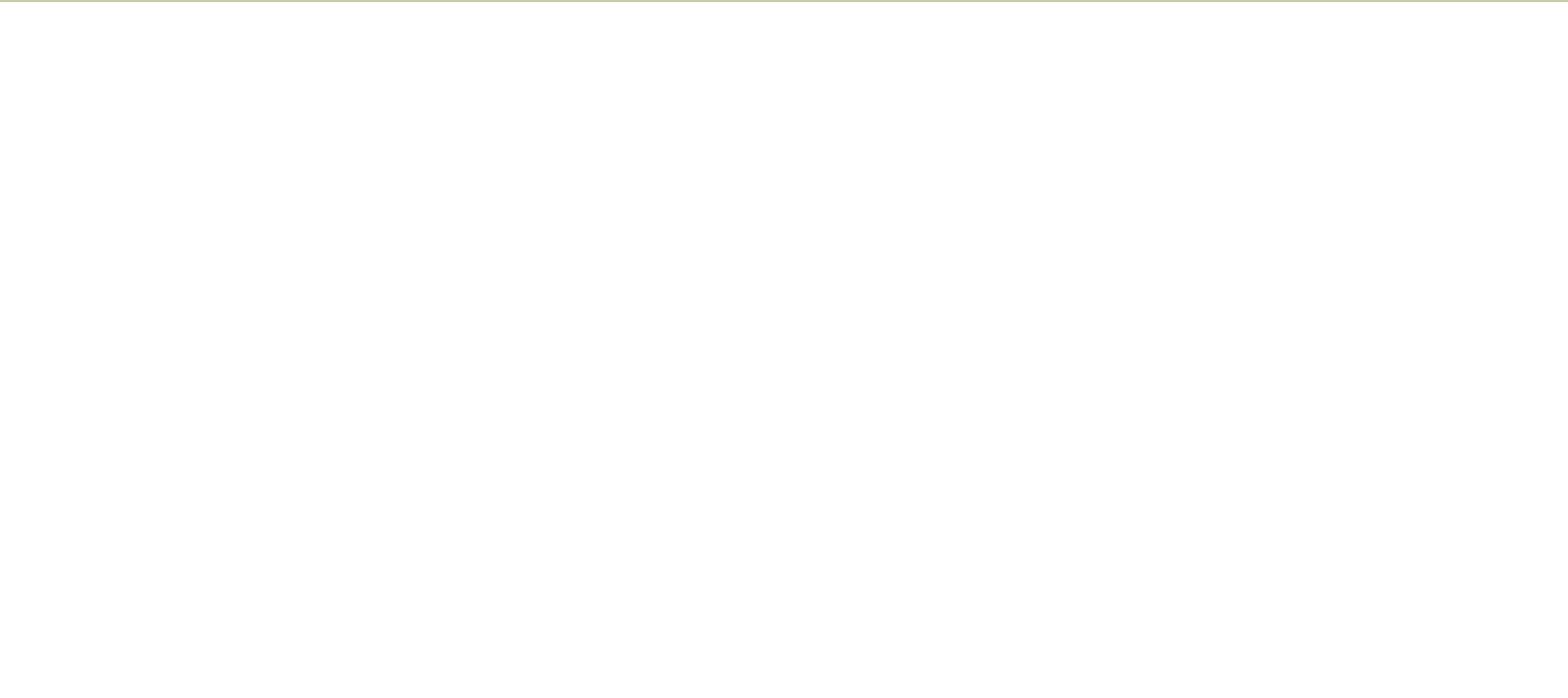
Lands and Buildings Division

Office of Capital Programs

Building Condition Assessment Full Report

Project #: 2374	Project: Facilities Condition Assessment 2006		
County: Pierce	Region:	Site #: 3B	Building #: 3B16A
Site: WESTERN STATE HOSPITAL	Building: 16A-KITCHEN DINING		

Systems	Component(s)	% of System	Rating	Score	Possible Score	Percent Score
Substructure						
Foundations						
	Standard Foundation	Single Component	100.00	Fair	0.96	1.61 60.00
	Slab on Grade	Single Component		(N/A)	0.00	0.00 0.00
Basement Construction						
	Basement Walls	Single Component	100.00	Good	4.32	4.80 90.00
Shell						
Superstructure						
	Floor Construction	Single Component	100.00	Good	0.77	0.86 90.00
	Roof Construction	Single Component	100.00	Good	4.61	5.12 90.00
Exterior Closure						
	Exterior Walls	Single Component	100.00	Good	3.31	3.68 90.00
	Exterior Windows	Single Component	100.00	Poor	1.81	6.03 30.00
	Exterior Doors	Single Component	100.00	Fair	1.83	3.05 60.00
Roofing						
	Roof Coverings	Single Component	100.00	Unsat	0.00	4.94 0.00
	Roof Openings	Single Component		(N/A)	0.00	0.00 0.00
Interior						
Interior Construction						
	Partitions	Single Component	100.00	Fair	1.58	2.63 60.00
	Interior Doors	Single Component	100.00	Fair	0.87	1.44 60.00
Interior Finishes						
	Wall Finishes	Single Component	100.00	Poor	0.41	1.35 30.00
	Floor Finishes	Floor Finishes	75.00	Fair	2.60	4.33 60.00
		Patient Dining Room	25.00	Poor	0.43	1.44 30.00
		System Total:			3.03	5.77 52.50
	Ceiling Finishes	Ceiling Finishes	80.00	Fair	1.62	2.70 60.00
		Cooler Ceilings	20.00	Poor	0.20	0.67 30.00
		System Total:			1.82	3.37 54.00
Services						
Plumbing						
	Plumbing Fixtures	Single Component	100.00	Fair	2.85	4.74 60.00
	Water Distribution	Water Distribution	20.00	Fair	0.35	0.58 60.00
		Supply Lines	80.00	Poor	0.70	2.32 30.00
		System Total:			1.05	2.90 36.00
	Rain Water Drainage	Rain Water Drainage	50.00	Good	0.26	0.28 90.00



NAC | ARCHITECTURE

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ENVISION
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