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PREDESIGN STUDY

NURSING FACILITY NEW CAPACITY at FIRCREST SCHOOL, SHORELINE

PREPARED FOR:

DEPARTMENT OF SOCIAL AND HEALTH SERVICES (DSHS)

WASHINGTON STATE OFFICE OF FINANCIAL MANAGEMENT (OFM)

PREPARED BY:

SAGE ARCHITECTURAL ALLIANCE

PROJECT # 2018-477

Washington State Department of Social & Health Services

Transforming lives

FIRCREST SCHOOL, SHORELINE
NURSING FACILITY NEW CAPACITY

DES PROJECT NO. FIRCREST SCHOOL: 2018-477
AGENCY: Department of Social and Health Services (DSHS)
PREPARED BY: SAGE Architectural Alliance

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1 EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

Summarize the problem, opportunity, or program requirements; alternatives considered; preferred alternative; and why it was chosen. Include basic project cost information.

THE PROBLEM

There are currently 297 DD (Developmentally Disabled) Certified Nursing Facility beds in Washington State located in 3 of the 4 state-operated Residential Habilitation Centers, RHC's. This includes 92 beds at the Fircrest School in Shoreline, WA, 93 beds at Lakeland Village in Medical Lake near Spokane, WA and 112 beds at Yakima Valley School. Rainier School has no Nursing Facility beds. Fircrest is now in the process of opening additional beds and will soon have 120 certified beds. This will bring the state total to 325 certified beds.

The DD Nursing Facilities provide highly specialized-high-acuity care expertise that is not in-line with the expertise generally available in community-based Medicaid-funded skilled nursing. (1)

As you can see in Table 1, the number of DD clients needing Nursing Facility care currently exceeds the DD Certified Nursing Facility beds.

The need for DD client nursing facility care is expected increase state-wide and at Fircrest from several factors:

- 0.6% of DD clients reside in Nursing Facilities and the number of DD clients is growing with state population growth. (2)
- Nursing Facility beds are increasingly needed for respite care as parents and care-takers are aging.
- As parents or care-takers die, Nursing Facility beds also serve as crisis support until new options can be arranged.
- Behavioral health clients have been increasing in effort to relocate clients out of hospitals.

Table 1 – August 2018

Residential Habilitation Center	Certified NF Beds	# of Clients *
Rainier School	0	60
Fircrest School	92	87
Yakima Valley School	73**	68
Lakeland Village	93	67
TOTAL COUNT	258	282

* Clients with documented needs. ** 112 beds partially closed. 57 long- term clients. Not accepting new long- term clients & will eventually close. Short-term beds: 16 short-term respite & crisis placements. 57+16=73.

This table displays statewide population projection requirements. It is not specific to any region of RHC. The intent of this table is to illustrate there is a greater need for DD nursing services long term than addressed in this project. These services may also be provided in community-based settings.

Fircrest Nursing Facility Needs Replacement

Replacement of the six nursing facility buildings is needed for several reasons:

- Buildings are in serious disrepair and in need of upgrades in every aspect; structural, HVAC, plumbing and energy efficiency.
- Facilities are operationally very inefficient. The separate buildings, set at different elevations

along the hillside, make connections between buildings very operationally challenging.

- Living accommodations do not meet CMS (Center for Medicare and Medicaid) nursing facility program standards per CRF (Center of Federal Register) Title 43.. Residents in the facilities, have minimal privacy. They don't sleep in bedrooms, but instead have curtained alcoves along the narrow circulation corridor.
- Physical therapy space and equipment are remotely located requiring clients to be transported by van to therapy due to the grade and distance. This amount of effort is a barrier to receiving quality care.
- Food service is also impaired by operational inefficiencies.
- The lack of physical connection between the Y-Buildings increases the difficulties of nursing staff communication.

ALTERNATES CONSIDERED

No Action Alternative

The effects if no action is taken.

Alternative 1 - Bldg 66 Site

Renovate Building 66 with a new addition – 90 bed option.

Alternative 2A - ATP Site

New construction North East of site (ATP) - 100 nursing bed option.

Alternative 2B - ATP Site

New construction North East of site (ATP) - 160 nursing bed option.

Alternative 3A Madrona Site

New construction North West of site (Madrona) along 15th Ave.- 100 nursing bed option.

Alternative 3B Madrona Site

New construction NW Campus (Madrona) along 15th Ave.- 160 nursing bed options.

Alternative 3C Madrona Site

New construction NW Campus (Madrona) along 15th Ave.- 120 nursing bed options.

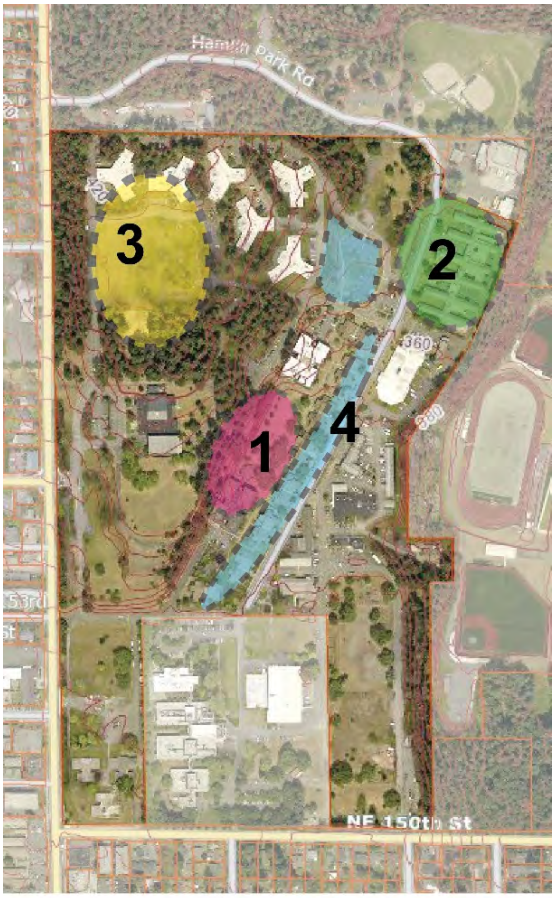
For all action items, LEED Silver was compared with LEED Silver Netzero.

Alternative 4

Renovate 10 wood frame cottages connected with a new interior covered walkway – 84 nursing beds.

Off-Site in King County

Investigation of 5 Nursing Homes in King County that have closed in the last 24 months for potential repurposing to serve the Fircrest Nursing Home population.



PREFERRED ALTERNATIVE

Alternative 3 is the preferred Alternative. Alternative 3 was unanimously preferred to Alternative1, and has several advantages to Alternative 2:

- Less constricted site accommodates preferred 1-story connected residential cottages plus expansion capability.
- Less demolition and no program relocation are required.
- MACC and Life Cycle costs are lower. (3)
- Public visibility along 15th Avenue is likely to produce more volunteerism.
- Potential connection to the existing Activity Building
- Less water main improvements.

All participants agreed that the preferred Alternative is a 1-story contiguous facility that would connect 20-bed cottages to create a 100 to 160 bed facility. 1-story is strongly preferred because Nursing Facility standards require the clients to have ready access to the outdoors. Use of elevators with the typical large reclining wheelchair is a barrier to access.

The proposed Alternate is 120 beds to match maximum capacity of the existing six Nursing Facilities and is also able to be constructed without demolition of existing Y-Buildings needed to operate at full capacity.

LAUNDRY REPLACEMENT

The Fircrest School Central Laundry Building was lost to fire.

Replacement Alternatives Considered

Laundry replacement options studied include:

- Alt L1- Handling Laundry at Rainier
- Alt L2- Outsourcing
- Alt L3- New Laundry Facility at Fircrest

Table 2- LAUNDRY COST OPTIONS		
	PROJECT COST	OPERATION COST PER YR
ALT L1		$561,047
ALT L2		$4,089,060
ALT L3	$8,705,785	$467,353

The operational cost premium for transporting laundry to Rainier is $93,694 per year. This is small compared to the large cost of a new facility.

Laundry MACC is $6,064,109

Laundry Project Cost is $8,705,785

The Preferred Alternative is to continue handling Fircrest laundry at Rainier School.

COST SUMMARY

The estimated construction cost for Preferred Alternative 3: 120 beds, LEED Silver plus Netzero, including new Central Laundry, in 2018 dollars, is as follows. Maximum Allowable Construction Cost (MACC) is estimated at $67,481,076. The estimated total project cost is $93,175,096.

Preferred Alternate 3C – 120-bed Madrona Site

CONCLUSION

The recommended solution to the state-wide need for increased Nursing Facility capacity and poor condition of the existing Fircrest Nursing Facility buildings is to build the Phase 1 - New 120-bed facility at the Madrona site. The construction is budgeted for LEED Silver and Netzero Energy utilization.

Table 3 – Fircrest Alt 3 Implemented

Year	Projected NF Need	Certified Beds incl Alt 3 – 120 beds
2018	282	258
2019	283	258
2020	287	258
2023	297	286*
2030	323	213**
2040	352	253***

*Fircrest opens 120-beds and closes Y-Bldgs.
**Assumes Yakima Valley School is closed.
***Assumes Fircrest has 160-beds.

Table 3 of Need vs State Capacity shows the increased capacity when the Y-Buildings are closed and the Fircrest 120 beds are opened in 2023 will not meet state capacity unless one Y-Building remains in operation during Phase 2, the build-out to 160 beds. If Yakima Valley School's 73 beds are closed by 2030, the available beds will drop to 213, even with the 120-beds added at Fircrest in 2023. This represents a 110 -bed deficit. The potential Fircrest Nursing Facility build-out to 160-beds won't offset the need. By 2040, assuming Yakima Valley has closed and assuming Fircrest has added 40 beds to reach 160 beds, approximately 100 additional beds will be needed at other campuses, without accounting for respite or crisis care. The projection is based on state population growth, assumed to be 2.8%.

Any solution should consider relocation trauma. Transitioning clients to an off-site nursing facility is not recommended due to the dangers associated with relocation stress. Potential relocation trauma should also be considered for any frail DD clients that are transferred to Fircrest from other RHC programs.

(1)See Section 2-The Problem and Appendix G.

(2) Per DDA budget for 2018-2019, population growth of 2.8 assumed. Also see (1).

(3) MACC is Maximum Allowable Construction Costs.

2 THE PROBLEM

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INTRODUCTION

In June of 2018, The Department of Social and Health Services (DSHS) engaged a team lead by SAGE Architectural Alliance to perform a predesign study for new nursing capacity at Fircrest School and Rainier School. The SAGE team developed predesigns at both campuses in parallel.

Stakeholders from DSHS, DDA, Fircrest School and Friends of Fircrest participated in a series of predesign workshops to help frame needs for a new nursing facility. This predesign report is an outcome of that work.

BACKGROUND

Fircrest School is one of four state-operated Residential Habilitation Centers, RHC's, for adults with developmental and intellectual disabilities in Washington State. As the majority of developmentally disabled, DD clients were transitioned to community settings per the state policies of the last 20 years, the RHC setting has remained the safest setting for a limited DD population.

The Fircrest School was built in 1942 as a military hospital. Fircrest School is set in a large, 90-acre wooded campus with a tranquil park-like setting, situated within the urban residential neighborhood of Shoreline. Fircrest School is home to 223 Developmental Disabled residents, with 90 living in the nursing facilities and 133 living in the Intermediate Care Facilities (ICF). The Nursing Facilities consist of six separate 16-bed buildings.

There has not been any significant remodeling or new construction on the Fircrest Campus since the Main Cafeteria Building was constructed in the 1980's. While other states were in the process of shutting down RHC (Residential Habilitation Centers), in 2003 and 2009 studies considered closure of the Fircrest Campus. Families of clients and Shoreline community residents pushed back against the closure.

This was a time of uncertainty for the future of Fircrest School and other RHC's. Maintenance dollars were channeled away from the RHC's, creating a backlog of deferred maintenance.

PROBLEM STATEMENT

Identify the problem, opportunity or program requirement that the project addresses and how it will be accomplished.

Problem Summarized

The six nursing facility buildings at Fircrest are in serious disrepair and in need of upgrades in every aspect; structural, HVAC, plumbing and energy efficiency. Five of the facilities are occupied and the sixth facility is used as a spare

when systems break down and require relocating nursing residents.

The nursing buildings at Fircrest include six 13,135 square foot (including basement) buildings constructed in 1962 and 1963. They are referred to as the "Y-Buildings" due to their unique physical design. The buildings are the core area for caring for Fircrest nursing facility clients who have significant intellectual and physical disabilities. These buildings have far outlived their useful life and are increasingly unable to effectively support the programmatic needs of the nursing program.

For example, current failing building systems include:

- Toilet and bathing areas do not meet current requirements for client accessibility.
- Water and sewer piping routinely fail creating weekly maintenance work orders for immediate corrective action.
- Indoor air quality is difficult to maintain and correct due to antiquated design and installation practices, making infection control very difficult for a very medically compromised clientele.
- Exterior walls do not meet current seismic codes.
- Exterior walls and ceilings are not insulated, making temperature control difficult to maintain.
- Electrical systems are inadequate to serve today's needs.

In addition to life-safety and maintenance issues, the facilities are operationally very inefficient. The separate buildings, set at different elevations along the hillside, make connections between buildings very operationally challenging.

The living accommodations do not meet current nursing facility program standards. Residents in the facilities, don't have their own rooms, but have curtained alcoves along the narrow circulation corridors.

The buildings have exceeded their useful life. The nursing program has managed to receive 4 and 5-star ratings from the CMS (Center for Medicare and Medicaid Services) rating program. The ratings are a reflection of the great commitment of the staff.

Nursing Facility Program Requirements

The Fircrest School Nursing Facility provides nursing, medical and dental care, physical, occupational and speech therapy, and general skill development for clients with intellectual and physical disabilities. This group of clients can no longer participate in "Active Training" as required in an Intermediate Care Facility nor function independently within a community-based setting.

While it is the mission of the Developmental Disabilities Administration (DDA) to help clients develop skills and independence to be able to thrive in their community, for Fircrest's nursing clients, this is their community and often the only one they have ever known. Clients have made Fircrest their home as reflected in the average length of stay of 33 years.

In addition, Developmentally Disabled in the broader community are aging and their caregivers are aging. The Fircrest School programs are increasingly needed for respite and crisis care to support the community care-givers.

As parent care-takers die, the campus serves as a crisis support until new options can be arranged.

Another demand has come from behavioral health clients relocated out of hospitals who can be served at Fircrest due to available options for high staff ratios to even 1 to 1 care. Current state policy is to create more community-based behavioral health sites that could help take this need in the future.

The project solution is to replace the "Y" Buildings with new construction that meets current building codes, provides an optimal programmatic configuration for effective staffing and operating efficiencies, and addresses the state policy requirements for energy efficiency and construction trends as defined by LEED standards and Net-Zero environmental impacts. To arrive at the solution, the study has considered many alternatives, both on-campus and off-campus.

OPPORTUNITIES

Care-giver Resources

Care-giver shortage is one of the largest national concerns for hospitals and for facilities across the country that care for the elderly. Fircrest currently employs 525 staff, many of whom have formed long-term emotional bonds with DD clients. These valuable relationships and the specialized expertise of these staff should figure into the calculus of Fircrest School's future.

Zero Rejection

Fircrest School is one of four Residential Habilitation Centers (RHC) in Washington State who served people with intellectual and developmentally disabilities. From the point of view of families, one of the biggest advantages to an RHCs is zero rejection. RHCs will not refuse a client due to severity of disability, medical condition, or behavioral challenges. This has been a significant relief for families who have been told by schools, and service agencies, "we are unable to meet your loved one's needs."[6]

PROGRAMMATIC IMPACTS

DD Disability Rights

The Developmental Disabilities Assistance and Bill of Rights Act, 2000 relays the following goals for individuals with developmental disablities—

(A) make informed choices and decisions about their lives;

(B) live in homes and communities in which such individuals can exercise their full rights and responsibilities as citizens;

(C) pursue meaningful and productive lives;

(D) contribute to their families, communities, and States, and the Nation;

(E) have interdependent friendships and relationships with other persons;

(F) live free of abuse, neglect, financial and sexual exploitation, and violations of their legal and human rights; and

(G) achieve full integration and inclusion in society, in an individualized manner, consistent with the unique strengths, resources, priorities, concerns, abilities, and capabilities of each individual;

A Place Called Home

The creation of a more home-like physical environment is one of the hallmarks of culture change in nursing homes, and facilities that have implemented culture change practices have shown an increased quality of care[6]. Innovations in nursing care, such as the Green Home model and Eden Care, are equally applicable to people with developmental disabilities.

The notion of creating a small “home-like” environment in concert with opportunities for gathering, connection to the outdoors and increased natural light, can lead to healthier lives for residents.

At Fircrest School, both staff and families have attested to the benefits of a home-like atmosphere and connection to the outdoors and natural light.

STATUATORY REQUIREMENTS

Identify and explain the statutory or other requirements that drive the project's operational programs and how these affect the need for space, location or physical accommodations

CFR Federal Requirements

As a State Facility, Fircrest Nursing Facility falls under the regulations of The Code of Federal Regulations (CFR) Section 42 Chapter IV, Subchapter G- PART 483 - REQUIREMENTS FOR STATES AND LONG TERM CARE FACILITIES (§§ 483.1 - 483.480)

Certification falls under the purview of Centers for Medicare & Medicaid Services (CMS), a federal agency. On-site surveys to assess certifications are performed by Residential Care Services (RCS), a state agency under the Department of Health.

WAC State Requirements

As a discretionary measure, Fircrest also applies the regulations of the Washington State Administrative Code (WAC) Section 388-97 Skilled Nursing.

Federal CFR requirements supersede State WAC requirements.

WAC 388-106-0355: Eligibility for Nursing Facility Care Services outlines the criteria to be met to receive nursing facility levels of care, including assessment to determine if the client has three or more activities of daily living as defined in WAC 388-106-0010. The assessment evaluates the level of assistance needed by each client in terms of supervision, limited assistance, extensive assistance, daily requirements, and level of support (one or more persons to support each client in any of the activities listed above).

The WAC regulations include building requirements. Any replacement facility is expected to meet these regulations.

Energy Requirements

The Governor Office Executive Order 18-01 states that "…all newlyconstructed state-owned buildings shall be designed to be zero energy or zero energy-capable, and include consideration of net-embodied carbon. In unique situations where a cost effective zero-energy building is not yet technically feasible, buildings shall be designed to exceed the current state building code for energy efficiency to the greatest extent possible."

Accessibility

Americans with Disabilities Act (ADA) accessibility for all spaces is critical not only for DD residents, most of whom use wheelcharis, but for any staff, volunteers and visitors who require accessibility and all who are deaf, hard-of-hearing, blind, wheelchair users, people with mobility challenges, etc.

Other Requirements

Refer to *Section 4 'Preferred Alternative'* for additional regulatory requirements and codes affecting the building components of the nursing facility.

ANTICIPATED POPULATION

Include anticipated population projections (growth or decline) and assumptions

Needs of Population Served

The target DD(Developmentally Disabled) population is defined by the Developmental Disabilities Act (Pub.L.106-402) and includes people with a severe, chronic condition that:

- Is attributed to a mental or physical impairment or a combination of those impairments.
- Occurs before the individual reaches 18.
- Is likely to continue indefinitely.

- Results in substantial functional limitations in three or more of the following areas of major life activity: self-care, receptive and expressive language, learning, mobility, self-activity, capacity for independent living, and economic self-sufficiency, and
- Reflects the individual's need for a combination and sequence of special, interdisciplinary, or generic services, individualized supports, or other forms of assistance that are of lifelong or of extended duration and are individually planned and coordinated.

In 2017 there were 45,032 total DD clients served by the Developmental Disabilities Administration (DDA) in Washington State. Based on the current DDA budget for 2018-2019, this is projected to increase 5.5% by the end of 2019. This reflects an average annual growth rate of 2.3%. At the current time, most individuals with a disability function well within community settings and do not require institutionalized care. Almost 70% live with and receive care from their parent or relative.

Only 1.5% reside in a Residential Habilitation Center (RHC) such as the Fircrest School and less than 0.6% reside in nursing facilities operated by the RHCs.

Table 1: Projected Need for DD Nursing Facilities Statewide, Attune Healthcare

Year	Statewide Population	DD Total Caseload	DD Clients Per 1000 Population	Percent Eligible for Nursing Facilities*	Projected Nursing Facility DD Clients**
2017 Actual	7,090,000	45,032	6.35	- .7%	307
2018 Budgeted	7,272,840	46,259	6.34	- .6%	282
2019 Budgeted	7,455,620	47,519	6.34	- .6%	283
2030 Projected	8,503,200	60,373	6.34	- .6%	323
2040 Projected	9,242,000	72,088	6.34	- .6%	352

* Not Adjusted for Aging of the Overall Population

** Includes Rainier School eligible nursing facility clients

Washington State currently operates 4 RHC facilities, and 3 of them offer nursing facility care. Those campuses with nursing facilities are Fircrest in Shoreline, Lakeland Village in Medical Lake, and Yakima Valley School in Selah. In 2017, there were 307 identified DD clients in need of nursing care in the DDA 2017 Caseload and Cost Report.

The distribution of licensed Nursing Facility Beds is shown below:

Table 2 – October 2018

Residential Habilitation Center	Certified NF Beds	# of Clients *
Rainier School	0	60
Fircrest School	92	87
Yakima Valley School	73**	68
Lakeland Village	93	67
TOTAL COUNT	258	282

* Clients with documented needs. ** 112 beds partially closed. 57 long- term clients. Not accepting new long- term clients & will eventually close. Short-term beds: 16 short-term respite & crisis placements. 57+16=73. This table displays statewide population projection requirements. It is not specific to any region of RHC. The intent of this table is to illustrate there is a greater need for DD nursing services long term than addressed in this project. These services may also be provided in community-based settings.

Projected Need

The need for nursing facilities is growing rapidly due to aging of the entire DD population together with general population growth across the state.

Although there has been a remarkable shift in Washington State from institutional care to community based residential care over the last 30 years, there remains a core number of clients who continue to benefit from institutional care, including nursing and ICF care.

Care Needs Exceed Community-Based Skilled Nursing Facilities

As the DD population is aging with the general population, the specialized needs of the typical frail DD clients exceed those found in community skilled nursing facilities. The extensive care needs of this target population exceed the level of care available in community based skilled nursing facilities. The majority of the DD individuals (95%) are incontinent and do not use toilets and 77% are tube fed. They often have multiple chronic conditions in addition to their physical and/or intellectual deficits. For example, 75% of clients frequently have the following diagnoses in addition to profound mental deficiencies:

- Gastrointestinal/Digestive/Metabolic conditions such as gastrointestinal reflux disease, gastrostomy tube placement, dysphagia, hypo or hyper thyroidism, diabetes, colostomy, and/or jejunostomy;
- Reduced physical function due to contracture, hemiplegia, quadriplegia, scoliosis, and kyphosis. This requires assistance to turn, reposition, or ambulate at all times.

Other common problems that impact 50% of clients include:

- Respiratory problems such as aspiration pneumonia, COPD, and asthma.
- Mood behavior and mental health conditions such as bi-polar diagnoses and management, autism spectrum disorder, post-traumatic stress disorder, depression, psychosis, impaired cognition, and dementia.
- Recurrent infectious disease, including upper respiratory infection and

pneumonia, urinary tract infection, C-diff, influenza, and MRSA.

During the past decade, there has been a push to close state-run residential centers, and move residents into smaller community-based homes where residents can interact with the larger community.

A 2003 study, *Planning for the Future of DDD Residential Habilitation Centers*, found that community service homes, such as SOLA (State Operated Living Alternatives), are getting better at meeting the most challenging needs of DD people[6]. However, this study focused on younger age groups. It is important to note the distinction of the lack of suitable nursing facility care in community skilled nursing due to the elevated needs of frail DD elders.

Increased Need for Respite and Crisis Care

In addition to the need for long term DD Nursing Facility care, there is a growing need for short term Respite and Crisis Care.

Short term respite and crisis care allows DD clients to stay at a facility for a short time. These services provide added support to the following people:

1) caregivers at community based residential facilities where crisis management can be an issue

2) parental care givers in need of a break or who are also aging and have become increasingly unable to care for their loved ones.

Following a stay at the hospital, older clients often require a 24/7 recovery option that consolidates multiple therapies and supports after a hospitalization. Patients on more than a dozen medications, with advanced dementia, ventilator-dependent, incontinent, or with other complex clinical conditions or disabilities often cannot be safely attended to in private homes or assisted living. Patients in recovery deserve good nursing care to maximize their strengths and abilities. Providing crisis and respite care can help alleviate this problem.

This has created a shift in the mix of clientele among nursing facility residents to include an increased number of short- term admissions for respite care (average length of stay capped at 30 days) and crisis management/crisis stabilization clients who may reside in nursing facilities for up to one or two years. This shift in client mix impacts programmatic needs, staffing needs, and facility needs at Fircrest.

Table 3 - State Wide Need vs Supply

Year	Projected NF Need	Certified NF Beds*
2018	282	258
2023	297	258
2030	323	185**
2040	352	185**

*Assumes No Action

**Assumes Yakima Valley School is closed.
Based on current population projections. See the full Attune Healthcare report in Appendix G.

State-Wide DD Nursing Facility Need

As shown in Table 3, the anticipated statewide need for DD Nursing Facilities will likely grow from 282 clients in 2018 to 352 clients by 2040. This is a 2.8% per year rate of growth as expected from the Washington State population. If there is “no action,” the nursing beds available for the DD community will continue to be deficient. Yakima Valley School is planned for eventual closure and that closure is indicated in the projections.

Relocation Trauma

Relocation trauma, also called Transfer Trauma, occurs when a resident is moved to a new location

and experiences physiologic and/or psychosocial trauma. In some instances, a client unexpectedly dies after the move. Relocation Trauma is a formal nursing diagnosis. Clients may experience relocation trauma if they move away from the friends and staff they have known all their lives.

At Fircrest School and the other RHC schools, many residents have worked with the same staff, and lived with the same friends for many years. There have been instances of clients dying after relocation to another facility—attributed to relocation trauma.

MISSION AND GOALS

Explain the connection between the agency's mission, goals and objectives; statutory requirements; and the problem, opportunity, or program requirements.

DSHS/DDA

The Developmental Disabilities Administration (DDA) is a direct service agency under DSHS. DDA administers programs at Fircrest School.

The Developmental Disabilities Administration (DDA) endeavors to make a positive difference in the lives of people eligible for DD services, through offering quality supports and services that are: individual and family driven; stable and flexible; satisfying to the person and their family; and able to meet individual needs. Support and services are offered in ways that ensure people have the necessary information to make decisions about their options and provide optimum opportunities for success.

The proposed nursing care model supports DDA's mission and goals by tailoring services to a clients individual needs; by creating spaces that allow for healthy living; and by encouraging connection to the younger IDD community and events at Rainier School.

DDA Values

- All persons with developmental disabilities are provided every possible opportunity to live in a manner consistent with the general citizenry.
- The Administration promotes the development and implementation of new techniques and program approaches to ensure opportunities for positive change and for personal growth and development toward maximum independence.
- All services to persons with developmental disabilities are based on individual need and designated to preserve human dignity, protect civil and human rights and encourage the involvement and responsibility of the individual's family and community.

The DDA wants people who receive residential services to experience these benefits:

- Health and Safety
- Personal Power and Choice
- Personal Value and Positive Recognition by Self and Others
- A Range of Experiences Which Help People Participate in the Physical and Social Life of Their Communities
- Good Relationships with Family and Friends
- Competence to Manage Daily Activities

OPERATIONAL GOALS

Based on experience at the current Fircrest Nursing Facility, the most operationally efficient bed configuration involves 20-bed pods. This allows for the most economical staffing plan and meets or exceeds CMS direct nursing staff ratios of 4 : 1. Each single and double bed room has a shared bathroom, individual wardrobes, and personal storage areas. Other programmatic functions within each pod include family-like amenities such as dining areas, activity space, nurse administration space, medication management space, and equipment storage. Other functions that improve efficiencies are included in the space program such as activity space for on-site physical therapy, occupational therapy, and speech therapy. There is also space within the new facilities to accommodate physician office space for on-site rounding and for on-site behavioral health professional visits.

Program goals that impact DD nursing facility space requirements include:

- Implement a staffing plan that embraces the Fircrest School model which has consistently received 4 to 5- star status from CMS annual audits.
- Optimize operational efficiencies
    - Develop single story buildings that minimize staff transport time
    - Utilize double loaded corridors to maximize staff observation capabilities and minimize walking distances for clients and staff
    - Include space within the nursing facility rather than transporting clients to other buildings on campus for heavily utilized programs and services. Services to be included within the nursing facility:
        - Physical, occupational, and speech therapy
        - Medical clinic space for physician rounding
        - Activity space
    - Include visual amenities such as windows for viewing the outdoors, covered patios for outdoor enjoyment, and skylights/clearstories for ample natural light.
- Minimize costly duplication of services where possible
    - Utilize centralized services available elsewhere on campus, including the centralized kitchen, laundry, and maintenance that can be transported to the new facility easily and economically.
    - Establish single point of entry for families and visitors with centralize reception area for check-in to promote safety and security for the entire building.
- Utilize existing space as much as possible while ensuring other program goals are met.

VISIONING WORKSHOPS

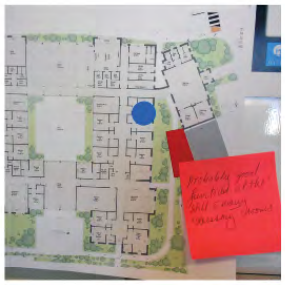
The SAGE team conducted a series of six visioning workshops to incorporate goals shared by staff and supporters at Fircrest School. The visioning workshops incorporated “lessons learned” from Fircrest’s current four-star nursing facility, as well as future needs of aging residents at Fircrest Rainier School.

Honoring the human dignity of people with intellectual and developmental disabilities was one the most important goals cited in the visioning workshops. Staff at Fircrest School have close relationships with the residents there, many have worked with clients for over 20 years.

VISIONING

WORK-SHOPS

RESULTS



Results of work-shops reveal a consensus towards certain architectural features and pro-grammatic spaces

CURRENT STRENGTHS

"We're already one of the best nursing facilities in the state"
- Fircrest School

"Our medical team provides great care"
- Rainier School

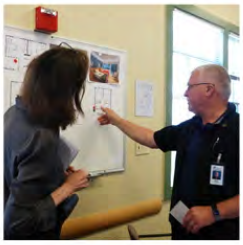
"Rainier School has excellent staff retention, 55% of our staff have worked here more than 15 years"
- Rainier School

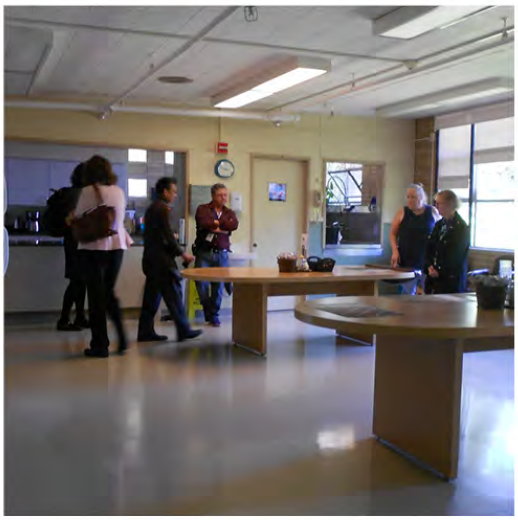
VISION OF NATURE AND LIGHT

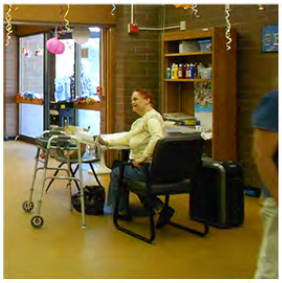
"A recreation zone, indoor greenhouse/ gardening, sensory room"
- Fircrest School

"It's important that clients can look out from the nursing home and see the world."
- Friends of Rainier

"Connection to nature, lots of natural light, lots of storage"
- Fircrest School







VISION OF A PLACE CALLED HOME

"more home-like"
- Fircrest School

"A fireplace in the Common Living Areas"
- Rainier School

"Nice place for social gathering between bedrooms"
- Fircrest School

SENSORY AREAS

"Open areas for clients to move about"
"Over-sized corridors are under-rated, wide corridors make for nice informal interior space."

"water fountain, bird bath, hummingbird feeder outdoors"

"Fenced gardening area, ability to feel different textile opportunities, and therapy area"

"Tactile things to touch and feel"

THE NURSING FACILITY

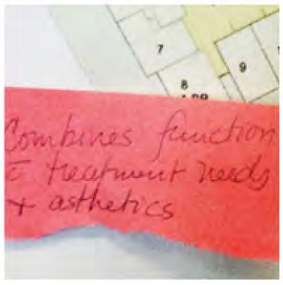
"One big building to house all nursing home clients and a space for indoor activities"
- Fircrest School

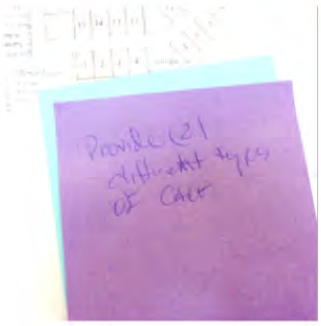
"AC in each bedroom with individual controls"
- Fircrest and Rainier School

NURSING MENITIES

More parking"
"Northwest portion of the campus, close to Activities Building"

"Combine all (NF) buildings"





WHAT IS NEEDED

Describe in general terms what is needed to solve the problem.

Replacement is needed for the existing nursing facility buildings that have exceeded their useful life. The preferred solution for the Fircrest School is a new 120-bed facility at the Madrona site, at the northwest side of campus with the following features:

- Single-story building under one roof.
- Use of 20-bed cottages.
- Mix of single and double rooms utilizing the ratio of 1 toilet room per 2 bedrooms.
- Expansion capability.
- Netzero construction.

Staffing

Analysis of the projected staffing requirements to operate a new nursing facility at Fircrest School is based on the staffing plan outlined for the Fircrest School as defined in the 2017 study "Facility Wide Resource Assessment". This detailed study describes the staffing mix for three staff categories, including:

- Clinical staff which is comprised of direct nursing staff, medical practitioners, dentists, pharmacists, and therapists
- Administrative and support staff for the nursing facility
- Centralized staff for the campus who are allocated to the nursing facility including housekeeping, maintenance, dietary, laundry, and others.

Direct Nursing Staff

The direct nursing staff configuration for the Fircrest School is core to the entire staffing model developed for the new facility. Table 4 describes the Fircrest Model which results in an average of 5.5 hours of nursing face-time per bed per day.

Table 4: Direct Nursing Care Staff – 2017 Fircrest School Staffing Model

		Staffing Plan by Type of Staff by Shift						
		6:30 am 3:00 pm	3:00 pm 9:00 pm	9:00 pm 11:00 pm	11:00 pm 6:30 am	Nursing Hours/Day	Nursing Hours/Week	FTEs @ 40 Hrs/Week
# of Staff	CNA*	20	20	10	10	385.0	2,695.0	67.4
	LPN**	5	5	5	2	97.5	682.5	17.1
	RN***	1	1	1	1	24	168.0	4.2
	Total	26	26	16	13			
Hrs/Shift		8.5	6.0	2.0	7.5			
Total Hrs/Shift		221	156	32	97.5	505.5	3,545.5	88.6
Total Hours/ Bed/Day		2.4	1.7	0.3	1.1	**5.5**		

Notes *CNA: Certified Nurse Assistant provides hands-on direct patient care

**LPN: Licensed Practical Nurse provides medication management

*** RN: Registered Nurse provides staff management and care planning for each client

Fircrest Nursing Beds: 92

HISTORY

Include any relevant history of the project, including previous predesigns that did not go forward to design or construction.

The 10,600 sf laundry building burned down in July 2017.

Prior master plans and studies that informed this Predesign Study:

- Drainage Investigation (in progress at the time of this report), AHBL, 2018.
- Power Infrastructure Study (in progress at the time of this report), Sazan, 2018.
- Campus Master Plan Phase III by AHBL, June 30, 2017.
- Geotechnical Report for DOH Laboratory, June 29, 2011. & March 14, 2016.
- Fircrest Campus Excess Property Master Plan January 6, 2010
- Part 3 Feasibility Study for the Closure of State Residential Habilitation Centers, November 1, 2009
- DSHS Excess Property Report, January 4, 2008.
- Heartland, November 2003
- DSHS Planning for the Future of DDD Residential Habilitation Centers, Report to the Legislature, David Deshaies LLC, September 30, 2003
- Ecological Resources Assessment by Golder Associates, April 10, 2002.

ENDNOTES

1. Carolyn C. Tinglin (2013) Adults With Intellectual and Developmental Disabilities: A Unique Population, Today's Geriatric Medicine, Vol. 6 No. 3 P. 22
2. Alan Factor, Tamar Heller, Matthew Janicki (2012) Bridging the Aging and Developmental Disabilities Service Networks: Challenges and Best Practices , University of Illinois Department of Disability and Human Development www.acf.hhs.gov/sites/default/files/aidd/bridgingreport_3_15_2012.pdf
3. Arthur Webb (2012) 'The role of nursing homes in national health care reform: From warehouse to medical home' 2-6
4. DSHS Nursing Facility List for WA State: https://fortress.wa.gov/dshs/adsaapps/lookup/NHAdvLookup.aspx
5. DSHS (September 30, 2003) Planning for the Future of DDD Residential Habilitation Centers, Report to the Legislature

3 ANALYSIS OF ALTERNATIVES

"Every moment of light and dark is a miracle."—Walt Whitman

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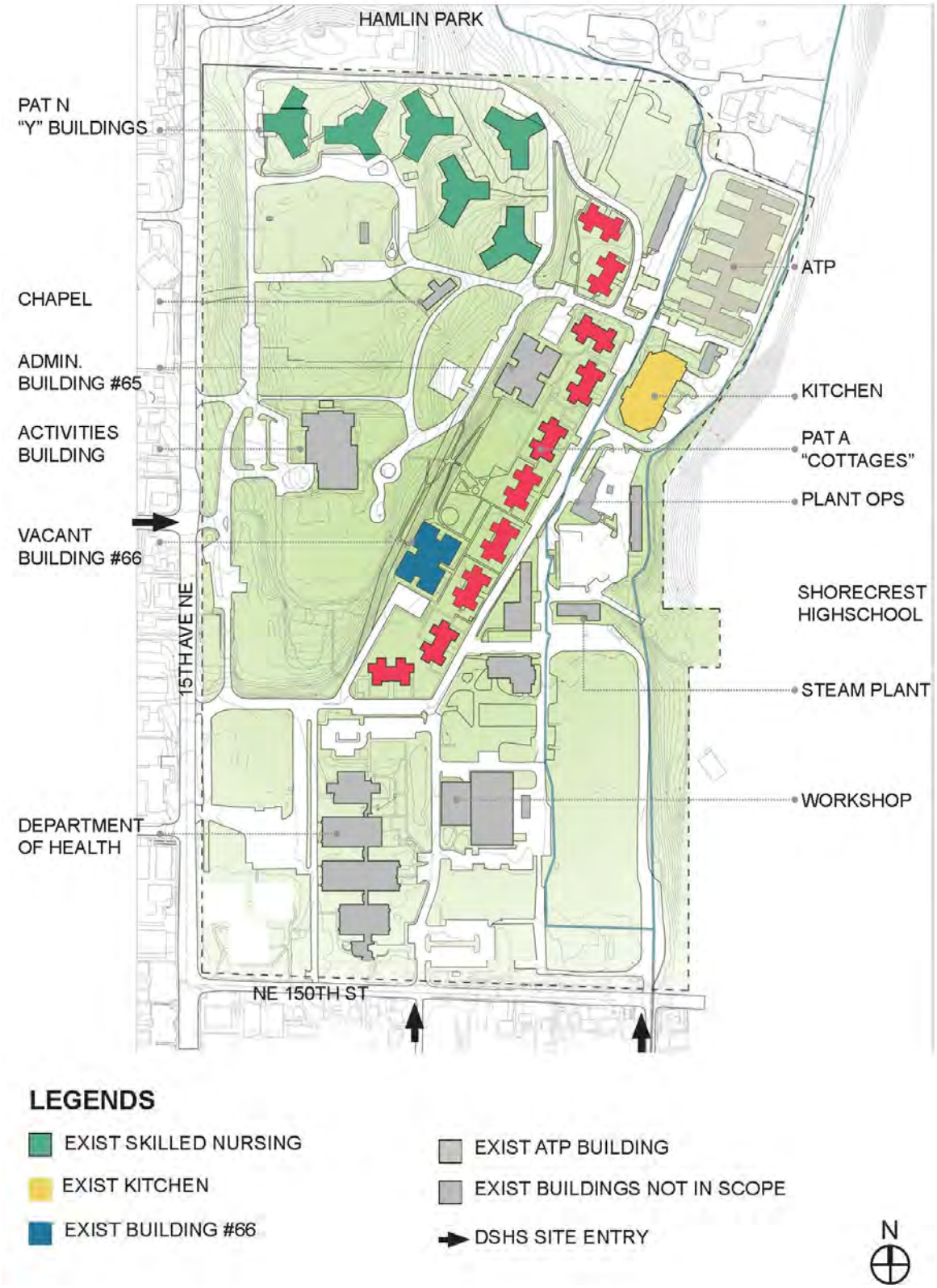
3.2 EXISTING CAMPUS MAP



3.1
SUMMARY OF ALTERNATIVES

This predesign explored 4 Alternative Sites, each with variables of bed count, layout design, and LEED Silver or LEED Silver plus Netzero. The impacts of taking "no action" or the potential for an offsite alternative were also investigated.

The Nursing Home Facility topography of the site dictates potential sites because of the strong program preference for a 1-story connected facility. The lower east campus is flat and apparently formed as the stream bed of Hamlin Creek. The upper west campus is less flat but does have a wide plateau that is the preferred Alternative 3. Site Location Alternative 3 was selected by a strong majority of Fircrest School's Predesign Visioning Committee. Each of the Action Alternatives require construction of two Water Tanks and new water distribution system before new construction can occur, but some Action Alternatives will require longer distribution line. Water tank placement appears to require demolition of one Y-Building. The following is a list of alternatives investigated:

No Action Alternative

The effects if no action is taken.

Alternative 1 - Bldg 66 Site

Renovate Building 66 with a new addition – 90 bed option.

Alternative 2A - ATP Site

New construction North East of site (ATP) - 100 nursing bed option.

Alternative 2B - ATP Site

New construction North East of site (ATP) - 160 nursing bed option.

Alternative 3A Madrona Site

New construction North West of site (Madrona) along 15th Ave.- 100 nursing bed option.

Alternative 3B Madrona Site

New construction NW Campus (Madrona) along 15th Ave.- 160 nursing bed options.

Alternative 3C Madrona Site

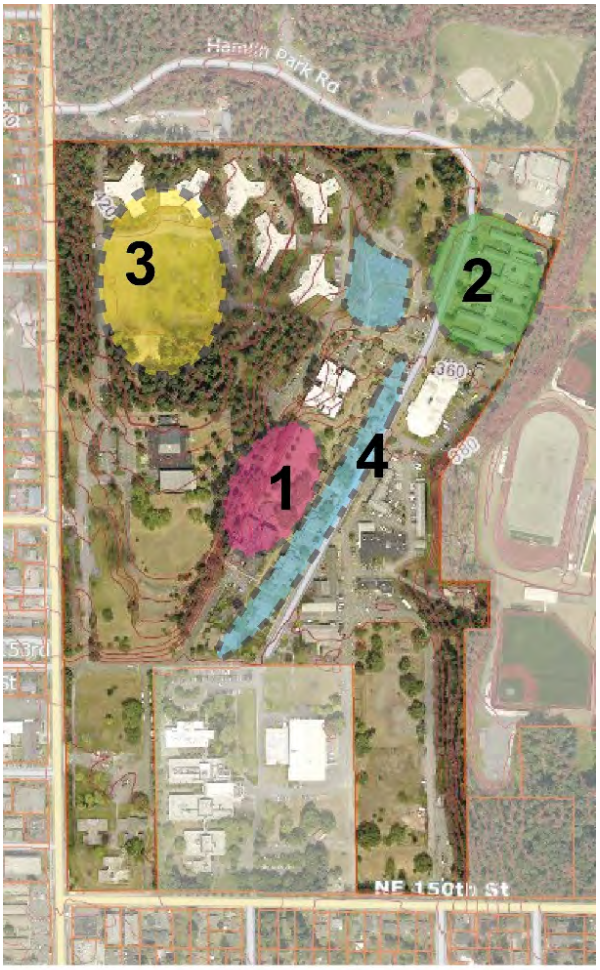
New construction NW Campus (Madrona) along 15th Ave.- 120 nursing bed options.

Alternative 4

Renovate 10 wood frame cottages connected with a new interior covered walkway – 84 nursing beds.

Off-Site in King County

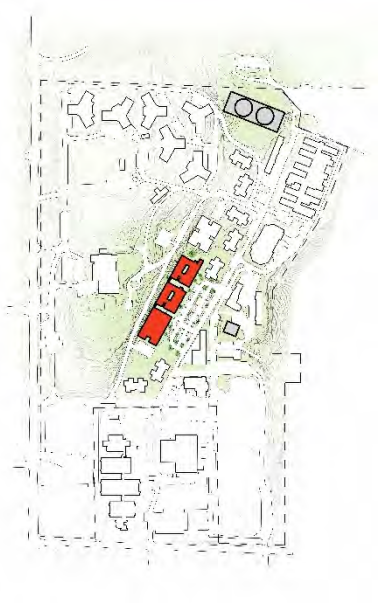
Investigation of 5 Nursing Homes in King County that have closed in the last 24 months for potential repurposing to serve the Fircrest Nursing Home population.



Alternative 1-Renovate Bldg 66

90-bed option -Renovate Building 66 plus 2 new 20-bed cottages.

- LEED Silver
- LEED Silver + Netzero



Alternative 2A-ATP Site

100-bed new construction at ATP Site (NE Campus) using (3) 2-story 20-bed cottages with Admin/Services..

- LEED Silver
- LEED Silver + Netzero

Alternative 2B-ATP Site

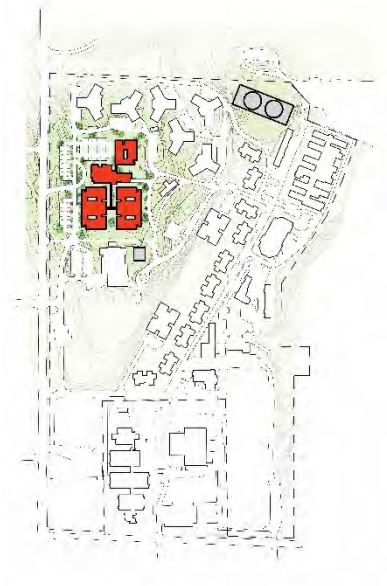
160-bed new construction at ATP Site (NE Campus) adding (3) 1-story 20-bed cottages to west side of road from Alt 2A.

- LEED Silver
- LEED Silver + Netzero

Alternative 3 A- Madrona Site

100-bed new construction at Madrona site (NW Campus) along 15th Ave. with (5) 20-bed cottages.

- LEED Silver
- LEED Silver + Netzero



Alternative 3 B-Madrona Site

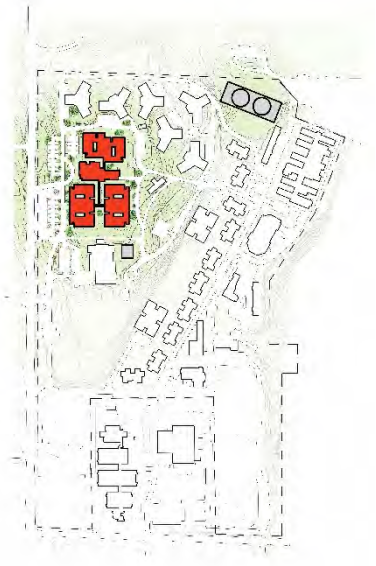
160-bed new construction at Madrona site (NW Campus) along 15th Ave. with (8) 20-bed cottages.

- LEED Silver
- LEED Silver + Netzero

Alternative 3 C- Madrona Site (Preferred)

120-bed new construction at Madrona site (NW Campus) along 15th Ave. (6) 20-bed cottages.

- LEED Silver
- LEED Silver + Netzero



Alternative 4 – Renovate ICF Cottages

Renovate 10 Intermediate Care Facility (ICF) wood frame cottages connected with a new interior covered walkway – 84 nursing beds.

Off-Site Alternatives

Utilize existing available King County nursing facilities. A public disclosure letter dated September 10, 2018 was provided from DSHS Aging and Long-Term Support Administration for the Nursing Homes that were closed in the last 24 months. See appendix for full letter. There were 5 Nursing Facilities identified and the feasibility of using each facility was studied.

3.2
NO ACTION ALTERNATIVE

Programmatic Outcome

Describe all the alternatives that were considered including the preferred alternative. Alternatives may include co-location, renovation, leased space, purchase, new construction or other options explored.

i. A not action alternative. Describe the programmatic outcome of not addressing the problem or opportunity.

The chief dysfunctions include:

- Poor and failing buildings.
- Building layout doesn't meet operational needs.
- Space needs don't meet regulatory requirements.
- Capacity is inadequate

The existing 6 Nursing Facility Buildings are in poor condition and the capacity of the existing facilities are not large enough to care for the increasing population needing nursing care. The poor condition of the Y-Buildings was documented in the 2002 Excess Property Master Plan and the 2017 DSHS Capital Project Request. Problems include plumbing, electrical, seismic, building envelope issues as well as primary space needs that don't meet Nursing Facility standards. The condition of the facilities is so poor that one of the 6 facilities is always held in reserve, so if any of the remaining 5 buildings have mechanical failures that make them un-habitable, the clients can be moved to the backup building. No action could lead to multiple building failures that render multiple buildings simultaneously inhabitable and threaten client well-being.

The Fircrest Nursing Facilities are currently filled. But ICF (Intermediate Care Facility) clients living in the cottages are aging and needing nursing care faster than spaces open up for them. If these clients with increasing needs remain in the IFC's, Fircrest will receive citations for inadequate care and IFC certification and funding will be threatened. At worst, serious life-safety incidents may occur. There is also increasing Nursing Facility need for crisis and respite nursing care from clients living in the broader community that is not being adequately served. No Action will result in increasing unmet needs and reduced safety and well-being of the most vulnerable clients.

Advantages and Disadvantages

ii. The advantages and disadvantages of each alternative. Please include a high-level summary table with your analysis.

There are no advantages of the No Action Alternative. The disadvantages are itemized in item i above.

Cost Estimates

iii. Cost estimates for each alternative.

None.

Schedule

iv. *Schedule estimates for each alternative. Estimate the start, midpoint and completion dates.*

None.

ALTERNATIVE 1 – RENOVATE BLDG 66

Each of the Action Alternatives require construction of new Water Tanks and new water distribution system before new construction can occur, but some Alternatives will require longer distribution line.

Description

Describe all the alternatives that were considered including the preferred alternative. Alternatives may include co-location, renovation, leased space, purchase, new construction or other options explored.

The existing 3-story Building 66 is extensively renovated to meet functional requirements and LEED Silver or LEED Silver plus Netzero. The building envelope is insulated inside and outside and receives new cement board siding. All building electrical, mechanical and elevator systems are replaced. Required sitework is extensive. But Building 66 can only accommodate 44-beds with Admin and Services, so two 1-story, new construction "neighborhood clusters" are added to the north to achieve 90-beds.

Advantages and Disadvantages

i. The advantages and disadvantages of each alternative. Please include a high-level summary table with your analysis.

Advantages

- Reuse of existing under-used structure
- Central Location
- Adjacent to ICF Cottages

Disadvantages

- Tight site with limited expansion potential due to steep grade on west, existing ICF cottages on east, and Building 65 to north.
- Building 66 is 3-stories and a 1-story building is strongly preferred operationally and for client's connection to outdoors.
- Adapting the Nursing Facility layout to less desirable features of the existing building reduces operational efficiency.
- Clients in the new construction "neighborhood clusters" have to reach Physical Therapy by elevator.
- Fire access impaired by steep grade requiring new access road cut into hillside.
- Removal of large trees required for west access road.
- Demo of 3 ICF cottages required to create main entry access.
- Requires transporting food services by truck.

Cost Estimates

ii. Cost estimates for each alternative.

The estimated construction cost in today's dollars are as follows:

LEED Silver: $42,004,160.

LEED Silver +Netzero: $50,642,866.

Schedule

iii. *Schedule estimates for each alternative. Estimate the start, midpoint and completion dates.*

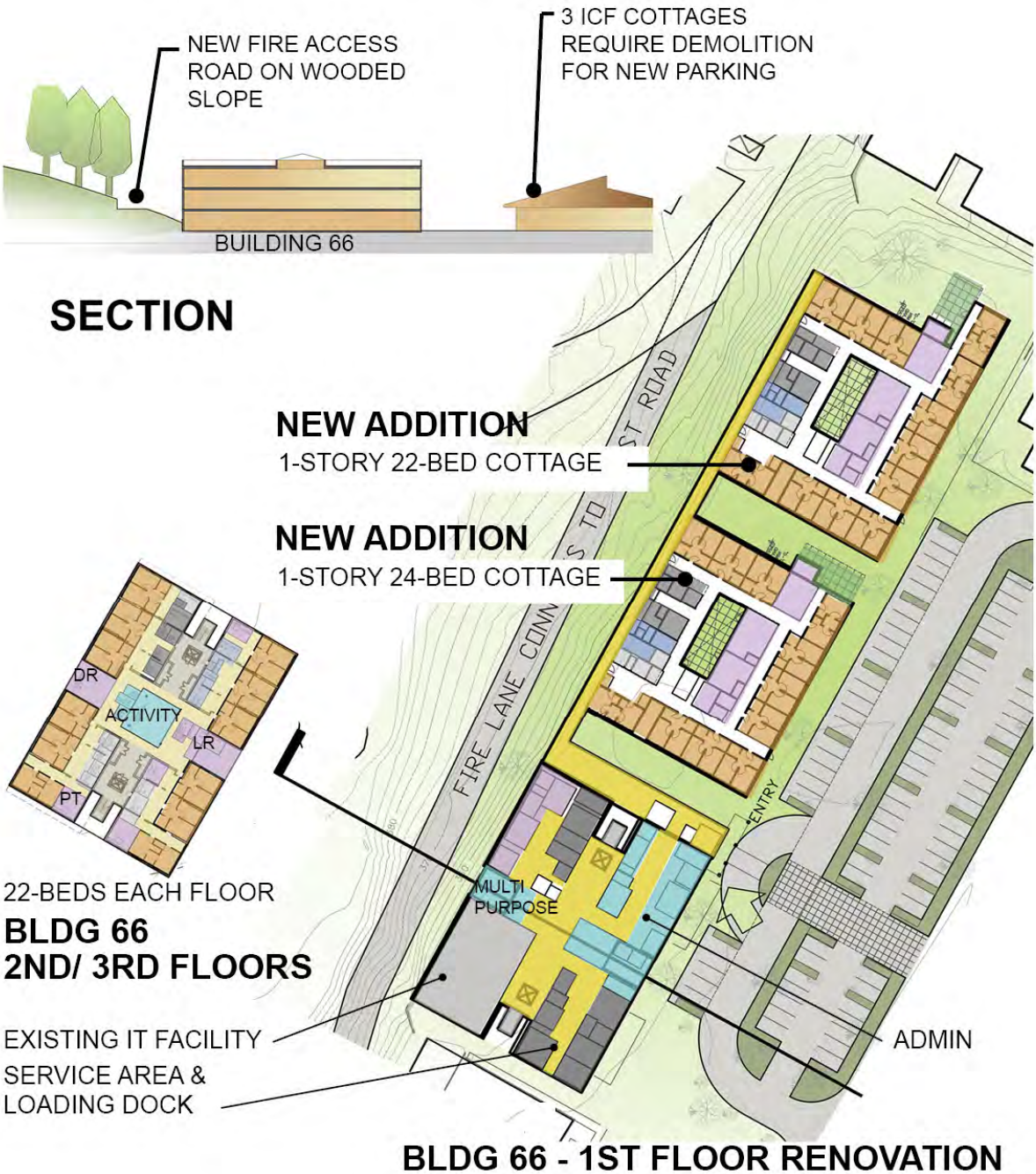
Design and Bidding Phases: November 2019 through February 2021

Construction Start Date: April 2021

Construction Midpoint Date: November 2021

Construction Completion Date: October 2022

EXISTING BUILDING 66


NEW FIRE ACCESS ROAD ON WOODED SLOPE
3 ICF COTTAGES REQUIRE DEMOLITION FOR NEW PARKING
BUILDING 66
SECTION
NEW ADDITION
1-STORY 22-BED COTTAGE
NEW ADDITION
1-STORY 24-BED COTTAGE
DR
ACTIVITY
LR
PT
22-BEDS EACH FLOOR
BLDG 66
2ND/ 3RD FLOORS
FIRE LANE CONN
ST ROAD
ENTRY
MULTI PURPOSE
EXISTING IT FACILITY
SERVICE AREA & LOADING DOCK
ADMIN
BLDG 66 - 1ST FLOOR RENOVATION

ALTERNATIVE 2A – ATP SITE 100-BEDS

Description

Describe all the alternatives that were considered including the preferred alternative. Alternatives may include co-location, renovation, leased space, purchase, new construction or other options explored.

New construction of 2-story 100-bed nursing facility with connection to Main Kitchen. Design includes (2) 2-story, 20-bed cottages connected by a glazed link. These cottages in turn link to a 2-story cottage with 20-beds on level 1 and with Admin, Physical Therapy, and Multipurpose on level 2. Both LEED Silver and LEED Silver plus Netzero were considered.

This site currently houses the ATP (Adult Training Program) so relocation of programs and demolition of old wood-frame ATP building dating from 1940's is required.

The Alternative 2 location, north of the main kitchen, has an undetermined viability depending on City of Shoreline and wetland specialists' decisions about the routing of a piped portion of Hamlin Creek and determination of the buffer zones associated with the Creek. With a favorable determination, Alternative 2 could accommodate the preferred building facility and it would have the advantage of proximity to the Main Kitchen and ICF cottages. However, with an unfavorable Hamlin Creek determination by Shoreline and wetlands specialists, the preferred building design will be unfeasible.

Advantages and Disadvantages

i. The advantages and disadvantages of each alternative. Please include a high-level summary table with your analysis.

Advantages

- Connects to Main Kitchen for food service efficiency.
- Clients can easily be taken to Main Dining Room as a second dining venue.
- Central Location
- Adjacent to ICF Cottages
- 2-story design is more compact.
- If all Hamlin Creek were piped to the east and a small buffer required, this would be a desirable central location.

Disadvantages

- The site is constrained by Hamlin Creek that is split just north of the site to an open ditch at the east property line and pipe routed down the center of the roadway fronting the west side of the site.
- Required Hamlin Creek buffers are in discussion and not definited at the date of report issuance. With the unknown buffers, it is not known if this alternative is feasible.
- 2-story operation requires transporting clients with large wheelchairs in elevators and will limit mobility and connection with outdoors.
- Expansion requires the addition be separated by the west roadway, limiting ease of communication and operational efficiency.
- Requires relocation of ATP (Adult Training Program) and demolition of building.
- Demolition of Paint and Maintenance Buildings or Storage and an ICF Cottage are required for the parking lot.

Cost Estimates

ii. Cost estimates for each alternative.

The estimated construction cost in today's dollars are as follows:

LEED Silver: $50,165,631

LEED Silver +Netzero: $59,356,629

Schedule

iii. *Schedule estimates for each alternative. Estimate the start, midpoint and completion dates.*

Design and Bidding Phases: November 2019 through February 2021

Construction Start Date: April 2021

Construction Midpoint Date: December 2021

Construction Completion Date: October 2022

ATP BUILDING - EAST ROAD -HAMLIN CREEK RUNS ALONG OTHER SIDE OF FENCE

PORTION OF HAMLIN CREEK IS IN OPEN DITCH ALONG EAST PROPERTY LINE

ATP BUILDING - WEST ROAD - PORTION OF HAMLIN CREEK IS PIPED DOWN ROAD

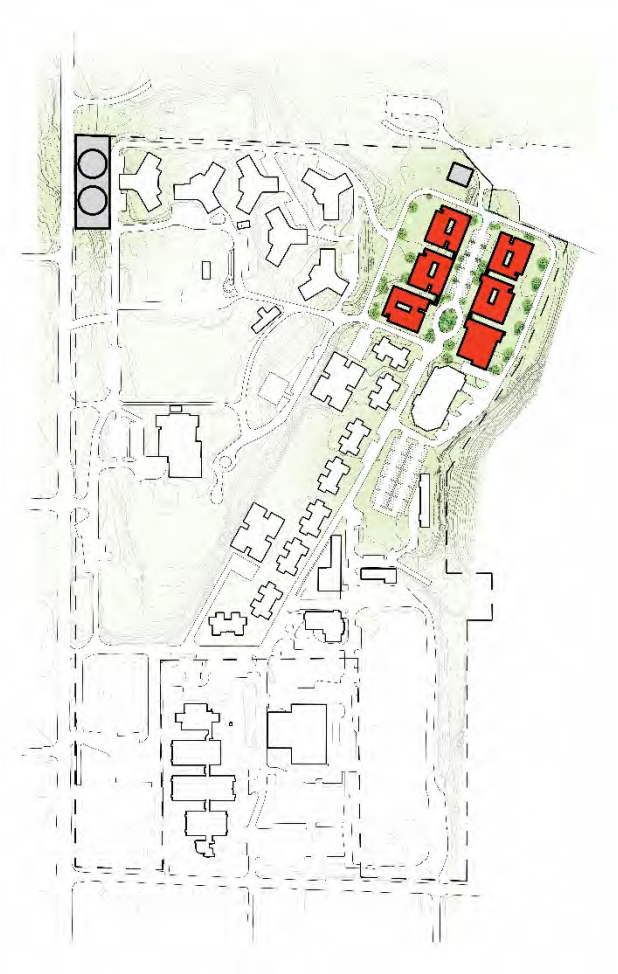
ATP BUILDING - WEST ROAD - PORTION OF HAMLIN CREEK IS PIPED DOWN ROAD

SOUTH SIDE OF CAFETERIA BUILDING

MAIN KITCHEN AT CAFETERIA BUILDING


New Laundry Building
Parking
20-Bed Cluster
20-Bed Cluster
Main Entry
Administration Section
Kitchen and Cafeteria
370
370

ALTERNATIVE 2B – ATP SITE 160-BEDS



Description

Describe all the alternatives that were considered including the preferred alternative. Alternatives may include co-location, renovation, leased space, purchase, new construction or other options explored.

New construction of (3) 1-story 20-bed cottages to the west of the Hamlin Creek pipe and opposite Alternative 2A with 100-beds. It is assumed the new cottages will rely on the Admin, Physical Therapy, and Multipurpose of Alternative 2A. Both LEED Silver and LEED Silver plus Netzero were considered.

This site currently houses a Storage Building and 2 IFC Cottages that will require relocation and demolition. Parking should also be expanded.

Advantages and Disadvantages

i. The advantages and disadvantages of each alternative. Please include a high-level summary table with your analysis.

Advantages

- Same as Alt 2A

Disadvantages

- Same as Alt 2A
- The existing piped branch of Hamlin Creek splits the facility in two. The current buffer each side of the pipe is 10 ft clearance but that may change with review now underway.
- The 60-bed addition requires considerable cut and retaining to maintain the same ground elevation level as Alt 2A.
- A new roadway is needed to loop around the west of the 3 additional 20-bed cottages for fire access.

Cost Estimates

ii. Cost estimates for each alternative.

The estimated construction cost in today's dollars are as follows:

LEED Silver: $71,682,041.

LEED Silver +Netzero: $83,268,350.

Schedule

iii. *Schedule estimates for each alternative. Estimate the start, midpoint and completion dates.*

Design and Bidding Phases: November 2019 through February 2021

Construction Start Date: April 2021

Construction Midpoint Date: December 2021

Construction Completion Date: October 2022


ALT 2 - 160 BEDS
65'
45'
0'
VISITOR PARKING 50
LEVEL 1
EXIST
NEW
ENTRY
LEVEL 1
NEW
EXIST
FOOD
MAIN LOADING
LEVEL 2


VISITOR PARKING 50
EXIST NEW
NEW EXIST
MAIN LOADING
NEW EXIST
MAIN PARKING 34,000 SF 100

ALTERNATIVE 3A – MADRONA SITE 100 BEDS

Description

Describe all the alternatives that were considered including the preferred alternative. Alternatives may include co-location, renovation, leased space, purchase, new construction or other options explored.

New construction at the Madrona Site of (5) 1-story cottages and Administrative / Services wing with new entry from 15th Avenue. Covered drop-off serves Village Center Wing including Admin, Multi-Purpose, Meeting Rooms, Physical Therapy, and Services. The service area and loading dock is at the rear of this wing.

Both LEED Silver and LEED Silver plus Netzero were considered.

Advantages and Disadvantages

i. The advantages and disadvantages of each alternative. Please include a high-level summary table with your analysis.

Advantages

- Largest area of relatively flat campus for expansion potential.
- Space for preferred 1-story design.
- 100-bed Alternative requires no demolition.
- Potential Visibility from 15th.
- Width of site allows for more compact circulation.
- Adjacent to Activity Building.
- Can minimize construction interference with current Fircrest School Operations.

Disadvantages

- Food Service will need truck delivery from Main Kitchen at lower campus.
- Buried debris and potential soil contamination at NE side of site.

Cost Estimates

ii. Cost estimates for each alternative.

The estimated construction cost in today's dollars are as follows:

LEED Silver: $46,925,261

LEED Silver +Netzero: $50,494,029

Schedule

iii. *Schedule estimates for each alternative. Estimate the start, midpoint and completion dates.*

Design and Bidding Phases: November 2019 through February 2021

Construction Start Date: April 2021

Construction Midpoint Date: December 2021

Construction Completion Date: October 2022


Water Tank
Y Buildings
15th Ave NE
20-Bed Cluster
Admin / Staff
Main Entry
Service Entry
20-Bed Cluster
20-Bed Cluster
20-Bed Cluster
20-Bed Cluster
Activity Building
New Laundry Building

ALTERNATIVE 3B – MADRONA SITE 160 BEDS

Description

Describe all the alternatives that were considered including the preferred alternative. Alternatives may include co-location, renovation, leased space, purchase, new construction or other options explored.

New construction at the Madrona Site of (8) 20-bed 1-story cottages and Administration/ Services Wing with new entry from 15th Avenue. Covered drop-off serves Village Center Wing including Admin, Multi-Purpose, Meeting Rooms, Physical Therapy, and Services. The service area and loading dock is at the rear of this wing. Compared to Alt 3A, this alternative expands further to the north and requires demolition of (2) Y-Buildings and additional parking.

Both LEED Silver and LEED Silver plus Netzero were considered.

Advantages and Disadvantages

i. The advantages and disadvantages of each alternative. Please include a high-level summary table with your analysis.

Advantages

- Largest area of relatively flat campus for expansion potential.
- Space for preferred 1-story design.
- 100-bed Alternative requires no demolition.
- Potential Visibility from 15th.
- Width of site allows for more compact circulation.
- Adjacent to Activity Building.

Disadvantages

- The project should consider phasing so the clients in the Y-Buildings can be relocated into the new facility prior to demolition of their building.
- Food Service will need truck delivery from Main Kitchen at lower campus.
- Buried debris and potential soil contamination at NE side of site.

Cost Estimates

ii. Cost estimates for each alternative.

The estimated construction cost in today's dollars are as follows:

LEED Silver: $67,612,865

LEED Silver +Netzero: $73,137,811.

Schedule

iii. *Schedule estimates for each alternative. Estimate the start, midpoint and completion dates.*

Design and Bidding Phases: November 2019 through February 2021

Construction Start Date: April 2021

Construction Midpoint Date: December 2021

Construction Completion Date: October 2022


Water Tank
Y Buildings
20-Bed Cluster
Admin / Staff
Main Entry
Service Entry
15th Ave NE
20-Bed Cluster
20-Bed Cluster
20-Bed Cluster
20-Bed Cluster
Activity Building
New Laundry Building

ALTERNATIVE 3C – MADRONA SITE 120 BEDS

Description

Describe all the alternatives that were considered including the preferred alternative. Alternatives may include co-location, renovation, leased space, purchase, new construction or other options explored.

New construction at the Madrona Site of (6) 20-bed 1-story cottages and Administration/ Services Wing with new entry from 15th Avenue. Covered drop-off serves Village Center Wing including Admin, Multi-Purpose, Meeting Rooms, Physical Therapy, and Services. The service area and loading dock is at the rear of this wing. Compared to Alt 3A, this alternative expands further to the north and requires additional parking. Compared to Alt 3B, this alternative does not require demolition of additional Y-Buildings.

Both LEED Silver and LEED Silver plus Netzero were considered.

Advantages and Disadvantages

i. The advantages and disadvantages of each alternative. Please include a high-level summary table with your analysis.

Advantages

- Largest area of relatively flat campus for expansion potential.
- Space for preferred 1-story design.
- 120-bed Alternative requires no demolition and creates no displacement of current clients.
- Potential Visibility from 15th.
- Width of site allows for more compact circulation.
- Adjacent to Activity Building.

Disadvantages

- Food Service will need truck delivery from Main Kitchen at lower campus.
- Buried debris and potential soil contamination at NE side of site.

Cost Estimates

ii. Cost estimates for each alternative.

The estimated construction cost in today's dollars are as follows:

LEED Silver +Netzero: $73,068,289.

Schedule

iii. *Schedule estimates for each alternative. Estimate the start, midpoint and completion dates.*

Design and Bidding Phases: November 2019 through February 2021

Construction Start Date: April 2021

Construction Midpoint Date: December 2021

Construction Completion Date: October 2022

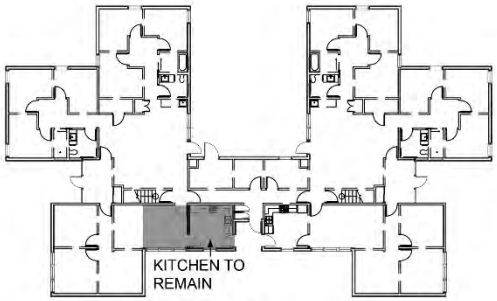

Water Tank
Y Buildings
20-Bed Cluster
20-Bed Cluster
Admin / Staff
Main Entry
Service Entry
15th Ave NE
20-Bed Cluster
20-Bed Cluster
20-Bed Cluster
20-Bed Cluster
Activity Building
New Laundry Building

ALTERNATIVE 4- RENOVATE 10- ICF COTTAGES – 84 BEDS

Description

Describe all the alternatives that were considered including the preferred alternative. Alternatives may include co-location, renovation, leased space, purchase, new construction or other options explored.

Renovate 10 Intermediate Care Facility (ICF) wood frame cottages and connect them with a new enclosed walkway – 84 nursing beds. Each existing IFC cottage accomodates 8 nursing facility bedrooms.



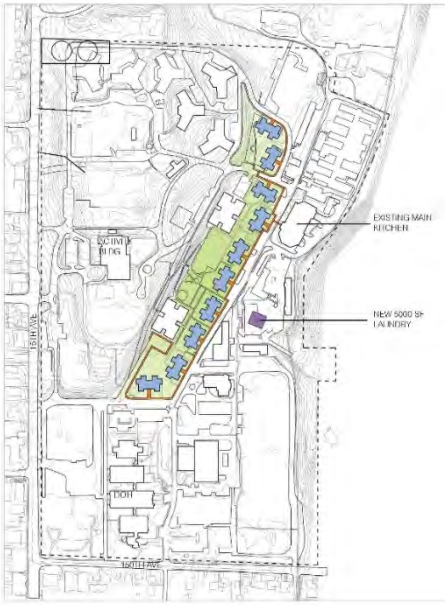
DEMOLITION PLAN

Advantages and Disadvantages

i. The advantages and disadvantages of each alternative. Please include a high-level summary table with your analysis.

Advantages
None.

Disadvantages



- Current client bedrooms are smaller than allowed by 2015 Building Code.
- The Building Code requires a minimum Type V-A construction, which would require reworking the exterior wood siding.
- Little of the buildings can be reused.
- This Alternative is much more operationally inefficient than the existing Y-Buildings with long circulation distances for staff.
- Each cottage only accommodates 8 bedrooms which is operationally very inefficient.

Cost Estimates

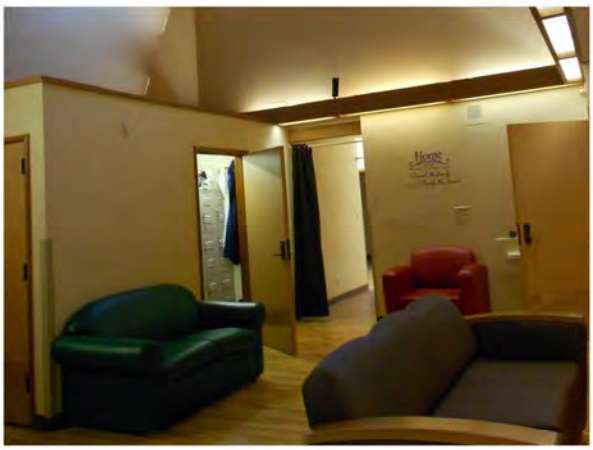
ii. Cost estimates for each alternative.

This alternative is impractical and no cost estimates were done.

Schedule

This alternative is so impractical that no schedule was done.

COTTAGES



OFF-SITE ALTERNATIVES

AVAILABILITY OF CLOSED NURSING HOMES IN KING COUNTY

There are 54 Nursing Homes in King County and in the last 24 months, 5 have become available.

Description

Describe all the alternatives that were considered including the preferred alternative. Alternatives may include co-location, renovation, leased space, purchase, new construction or other options explored.

#1 - Anderson House

17201 15th Ave NE, Shoreline, WA 98155

Anderson Home had 100 beds and its effective year of construction was 1963. It was closed in 2017 due to maintenance issues and inability to secure financing for improvements. The plumbing system has failed, there is no fire suppression, and the 2-story portion is a Building Code non-compliant construction type. The facility is now scheduled for demolition.

#2- Health & Rehabilitation of North Seattle

1333 Greenwood Avenue N, Seattle, WA 98133

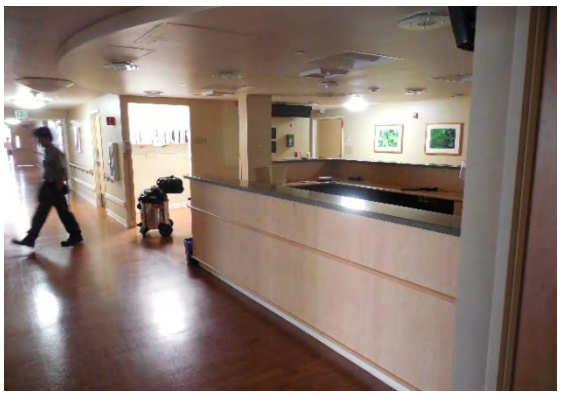
Health & Rehabilitation of North Seattle is a wood-framed, 2-story, 151-bed facility built in 1954 and updated in 1968. The construction type is not compliant with the current Building Code for nursing homes because 2-story facilities can't be wood-framed. It would be unfeasible to make the building framing non-combustible. The building would prohibit use of the second floor for the nursing facility.

#3- Kindred Seattle at Northgate

10631 8th Ave NE, Seattle

Kindred Seattle at Northgate is a concrete 2-story structure with basement built in1964.

The nursing home portion of the building consists of 30 beds on the main level that was closed last year. There is an active hospital in operation on the upper level.



#4 – Kindred Seattle at First Hill

1334 Terry Avenue, Seattle, WA 98101

Kindred Seattle at First Hill is a 23-bed nursing home built in 1964 and updated in 2000. The nursing home is co-located in a 4-story building with the 50-bed Kindred hospital. The building is now closed.

#5 – The Kenney in West Seattle

7125 Fauntleroy Way SW, Seattle, WA 98136

The Kenney is a non-profit Continuing Care Retirement Community that closed the nursing care and is converting the rooms to assisted living care. This facility is not available.

Alternative 5 Summary

Of the five King County nursing facilities that have closed, two are more than 50 years old and in such serious disrepair that they are unfeasible to renovate.

Two facilities, Kindred First Hill and Kindred Northgate, both appear to be in good condition. Both are small 30-bed nursing facilities co-located with Kindred Hospital facilities. At Northgate, the small hospital is still operating. At First Hill, both nursing facility and hospital have closed. The small size of these facilities would make them inefficient to operate long term.

The closings are recent, and the study has been unable to reach Kindred ownership. Kindred is a very large national organization with headquarters out of state.

Washington State Department of Social & Health Services
Transforming lives

FIRCREST SCHOOL NEW NURSING CAPACITY

Predesign Study | October 21, 2018

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PREFERRED ALTERNATIVE DESCRIPTION - ALTERNATIVE 3C

Nature of Spaces

The Prefered Alternative is for new construction of the Nursing Facility based on present codes and nursing care standards. Of high importance is that the program is contained within a single building for operations and communications efficiency. The Preferred Alternative is for 20-bed residential "Household Neighborhoods" or Cottages organized around an inner light-filled courtyard maximizing natural light and connection with nature for the clients and staff. The important features of the Cottage organization include the following

- Homey, non-institutional atmosphere
- Natural light
- Connection to nature and outdoors
- Cluster of bedrooms centered around the living room and off the main circulation path (not in circulation corridor)
- Nursing operational and staffing efficiency of 20-bed care units.
- 1-story/ ground level (admin could be at 2nd level but not the Pods).
- Located in a single building connected by indoor corridors.
- Close to Main Kitchen for easy food/meal access.
- Mix of private and semi-private rooms with 20-30 % private.
- 5% of the bedrooms should be bariatric.
- 1 bathroom with sink and toilet for each two bedrooms.
- A circular walking path since many clients have autism.

Four-Season Porch

Traditional Architectural Style and Details

Living Room

Warm Moveable Adjustable Home-like Furniture

Dining & Living Rooms

Physical and Visual Connection to Nature and Light

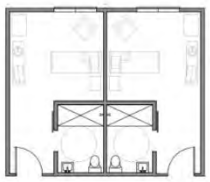
Bedroom Layout Options Considered

Bedroom Options were evaluated for efficient use of space, functionality, natural light, lines of sight into room and storage provided.

Private Bedrooms

Layout Option #1

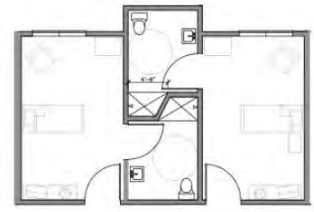
- 2 private rooms can share a toileting / grooming room. Few clients can use a toilet.
- Showers/ tubs should be off cottage hallway.
- Bathroom blocks visibility into bedroom.



ST-B - 330 SF

Layout Option #2

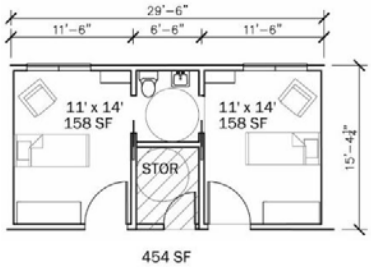
- Good visibility into bedrooms.
- Share toilet room & convert 2nd bathroom to storage.



ST-A - 330 SF

Layout Option #3

- Good visibility into bedrooms.
- Storage should open to each bedroom for large private wheelchairs.
- At toilet, use barn doors instead of pocket doors.

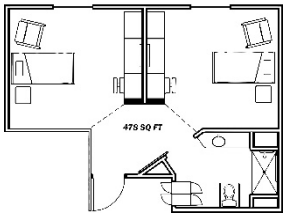


454 SF

Double Bedrooms

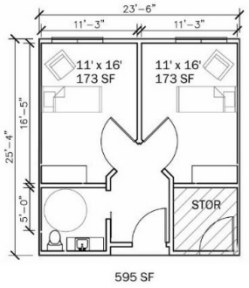
Layout Option #4

- It is beneficial to have a bedroom door to prevent infection spread if a client is sick.



Layout Option #5

- Storage room should open to shared entry for private wheelchair storage.

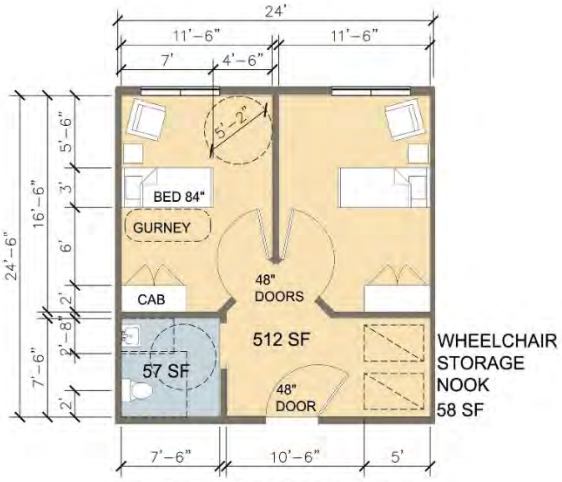


595 SF

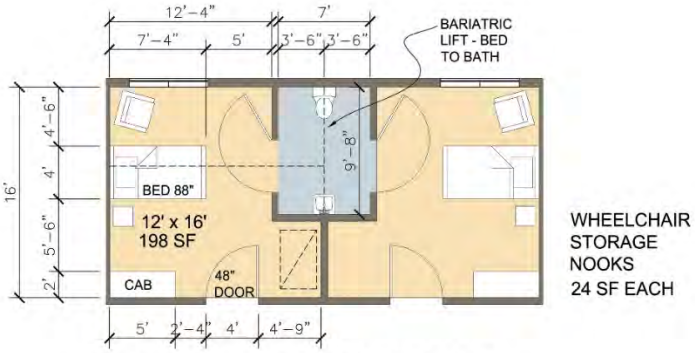
Preferred Bedroom Options

The preferred bedroom options for private, double, and bariatric bedrooms are shown below.

A PRIVATE



B DOUBLES



C BARIATRIC

Bedroom Program and Features

Sleeping Rooms should have the following design elements:

- Window for review and natural light.
- 14 ft x 16 ft of clear area for the bed and maneuvering.
- 1 bathroom with sink, toilet and grooming cubby.
- Bathing facilities will be accessed from the corridor.
- Storage niche for large wheelchair.
- Lockable drawer in wardrobe.
- The ability to close a bedroom door to separate the client when sick.
- Lots of outlets and multi-lighting systems including wall sconces and/or bedside lamps.
- Flat screen TVs and sturdy shelves for stereos.
- Remote control blinds and shutters.
- Should look directly out to the Commons so those that are in bed can feel part of the activity.

Big Trees, Accessible Paths, Hard Furniture, and Colorful Shrubs and Flowers

Landscape

Cottage Layout Options Considered

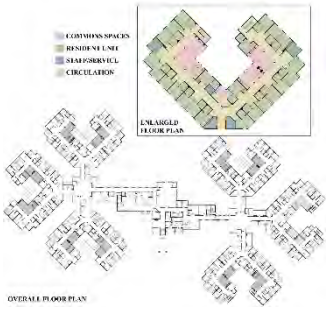
Layout Options were evaluated for quality of environment they provided for clients and staff and for nursing operational efficiency. Fircrest Nursing Staff and operations specialists, Attune Healthcare, both arrived at 20-bed groupings being the most operationally efficient size.

Layout Option #1

- Bedrooms open to major circulation reduces privacy.
- Long circulation reduces operational efficiency.

Layout Option #2

- Organization similar to connected cottages is good.
- More efficient if ends of corridors are joined.



Layout Option #3

- Less institutional than Option 1.
- Major circulation is outside bedrooms.
- Long linear circulation

Layout Option #4

- Bedrooms open to major circulation reduces privacy.
- Long linear circulation.

Layout Option #5

- Bedrooms open to cottage living rooms-more homey & private.
- Compact 20-bed circulation
- Central cottage courtyard maximizes natural light & connection to outdoors.

Layout Option #6

- Back to back cottages – nursing staff can support adjacent cottage
- Main circulation bypasses cottages and has views to outdoors.

Cottage Space Needs

Common Spaces within each 20-bed Pod /Cluster should include the following:

- Living Room/ Sitting Area
- Activity Room
- TV Room
- Dining Area
- Country-Style Prep Kitchen
- Lockable Prep Room
- Quiet Room
- 4-Season Porch
- Covered Patio

The Living Room should have a fireplace and fish tank. It should have soothing colors, and the ability to provide soothing lighting and sounds.

The Activity Room is an additional needed common space so that staff meetings, entertainment, TV and a family visit could be happening in separate spaces without conflict. It should have a nook for video-conferencing.

Dining Room

Four-Season Porch

Dining Area with capacity for 10 clients in wheelchairs. The audio characteristics of spaces should be softened. The number of tube-feeding pumps has increased and they are noisy. The Dining Room should include a music system and flat screen TV's. The tables should be adjustable to different heights and adaptive chairs designed to meet individual needs.

Dietary services delivery should be designed for food quality and engaging clients in a home-like meal setting. A Country-Kitchen style Prep Kitchen with serving counter provides clients a sense of engagement with food preparation. Plating food from steam tables at the serving counter has the benefit of including meal aromas found in the home setting.

The Prep Kitchen should include the following:

- Lockable Prep Room with stainless steel counters.
- Non-slip flooring
- Commercial Refrigerator
- Coffee maker
- Built-in microwaves
- Automatic washer/ sanitizer
- Kitchen sink with telescope faucets
- Commercial style ovens

Residential Laundry should have:

- Commercial machines
- Laundry bins and shelving.
- Commercial style folding tables.

Laundry Storage needs a work table, storage cabinets and shelving.

Linen and Diaper Storage should be a separate room.


Water Tank
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Activity Building
New Laundry Building

A large covered Patio should be adjacent to the common area.

There should be a small Quiet Room for calming clients.

A silent call system should be used. Most clients don't use call buttons but with the increase in behavioral health and less mental impairment, the call systems are needed.

Services within each 20-bed Pod/ Cluster should include the following:

- Nursing Office
- Med Room
- Clean Work Room
- Clean Linen Room
- Soiled Linen and Handwashing Sink
- Bathing facilities accessed from the Pod corridor. Each Pods should have 2 gurney showers and 1 chair shower. Each Pod should have 1 tub. Bathing facilities should have overhead heat lamps. Slip-resistant flooring.
- Storage Room for tube-feeding formula.
- Storage for wheelchairs, beds, shower and bath chairs, commodes, etc.
- Lift storage. 1 lift per 4 clients.
- Janitor Closet with mop sink.
- Place for staff to store belongings.

Nursing Facility General Use Program Spaces that comprise the Nursing Facility "Village Center" include the following:

- Main Entry
- Administration
- Multipurpose Room
- Large Meeting Room
- Physical Therapy
- Sensory Rooms
- Coffee Shop/ Gift Shop are desireable
- Staff Break Room
- Service and Receiving Area

Main Entrance Canopy

The Main Entry should have a covered porte coche so clients can board vans under cover. There should be a reception desk and small lobby area at the Main Entry.

Administration should include the following:

- Admin Director's Office
- Assistant Director's Office
- Medical Staff Offices
- IT Office
- Work Room/ Copier
- Family Meeting Room with video conferencing.
- Unisex Toilet.

A large Multipurpose Room that can function as a Media Room and Theater. Entertainers provide performances so a small stage would be ideal. There should be storage for tables and equipment.

Large Meeting Room for staff to accommodate meetings of about 50 occupancy is needed.

Physical Therapy should include:

- Parallel bars, stairs, tread mill, stationery bike.
- Ample storage for wheel chairs, lifts, walkers, extra beds.

- Ability to double as a therapy staff room.
- Separate room for speech therapy.

Sensory Rooms should be provided for featuring sensory lighting, sound and auditory equipment.

A Coffee Shop where meals can be purchased would be a desirable amenity. Whereas Rainier currently has a coffee shop, Fircrest doesn't.

A small Gift Shop for clients to visit would be desireable.

For a 100-bed Nursing Facility, two staff break rooms would be desireable.

The Service and Receiving Area should include:

- Loading Dock
- Trash / Recycling Room
- Maintenance Room.
- MDF Telecommunications Room
- Electrical Room
- Mechanical Room
- Indoor Generator Room
- Emergency Electrical Room

Fircrest has an emergency generator near the steam plant, but Electrical Engineering recommends the Nursing Facility include its own generator due to the distance from the central generator. This would protect against the chance of an earthquake breaking a long power run.

Maintenance and Durability needs include plenty of clean-outs since clogged plumbing is a frequent concern. Maintenance staff advocated for a 30-inch high under slab crawl space to run under the resident areas with high concentration of plumbing fixtures. The estimated cost of this feature is $51 /sf. Other durability features include low-wax welded seam vinyl flooring to contain urine spills, carpet squares, ceramic tile and FRP or Acrovyn wainscots for impact resistance.

Open-Plan and Free-Flow Corridors

Corridor

Integration of Art in Open Spaces

Public Spaces

Facility circulation doors should be automatic or power assist. A Walkie talkie communication system is currently used. Security cameras should be provided inside and out.

Outdoor Activity Space: The required outdoor space is for therapy and wellness programs and the social connection of visiting families.

The inner courtyard of each 20-bed Pod and the large patios adjacent to the Commons of each Pod are described above and are central to the quality of life and connecting clients with natural light and the outdoors.

Additional Outdoor Activity spaces shared with all the Fircrest clients include the following:

- Therapy Garden with accessible paths
- Garden Gazebo
- Flower Gardens

The Garden should include shaded areas, swings, raised beds, non-poisonous plants, different scents, barbeque area, chimes, wind streamers, water features,fire pits, bird baths, bird feeders and other features to allow uplifting or new experiences.

Occupancy Numbers

A 100-bed facility is the preferred Nursing Facility size. The 100-beds consist of five (5) 20-bed Pods/ Clusters that are described above and strongly preferred for 20-beds being operationally efficient for care staffing.

Basic Configuration

Each 20-bed Pod is 14,690 gross sf and the preferred 120-bed facility is 110,130 gross sf. An important layout feature of the 20-bed pods is that they are linked to other pods and the Administration Wing by a circulation spine that doesn't enter the pod, providing the 20-bed pods and their living area with a more residential, private environment.

It is important to nursing staff that the Nursing Facility residential pods be ground-related and single story. Elevators are a restrictive encumberence for residents with large wheelchairs and connection with nature and the outdoors is of prime importance for the residents.

Space Needs Assessment

There are no State recognized space planning guidelines for this building type. The project team is basing the space needs on CFR (Code of Federal Regulations) Title 42 Part 483 Requirements for States and Long Term Care Facilities, 2012 Health Care Facilities – NFPA 99 (CMS adopted standard for Medicare certified facilities) and WAC (Washington Administrative Code) 388-97. In addition, the study included programming workshops attended by the Fircrest nursing and care staff reviewing and evaluating comparable long-term, skilled nursing facilities for very frail seniors. Questionnaire responses from staff detailed space needs problems that were addressed in preferred alternative. A detailed program with space requirements is found in the appendix.

Bed Count & Facility Size

At the Alternative 3 site, facility size ranging from 100-beds to 160-beds were considered. The size of 120 beds has been chosen to match the maximum capacity of the existing 6 nursing facility (Y-buildings). With an initial phase of 120-beds, it appears possible to keep all the Y-Buildings in operation during construction of the full 120-beds. Additional study is needed for whether the additional water tank(s) required for the water distribution projects can be located without demolition of a Y-Building.

ADAPTIVE USE

Respite care, crisis- care and behavioral health would best be served by a different layout than the 20-bed cottages, designed for long-term residents. The adaptive use needs are expected to be 10% of the bed count, or 12-beds for the proposed design. Adaptive uses would be better

arranged in traditional corridor layout with double loaded corridors. More study is needed, including operational efficiency, but 10 additional beds are shown added on the east end of the Admin Wing. These 10-12 beds were not included in the cost estimate. To include these beds, the costs should be increased by roughly 10%.

SITE ANALYSIS

Site Studies

In 2010, a report "Fircrest Campus Excess Property Master Plan" dated January 6, 2010 was produced by AHBL. This study suggested that the nursing facility be located per Alternative 2 and the western side of the campus be classified excess property and redeveloped as mixed use and affordable housing. The highest density mixed use was shown in the southwest corner and the Madrona site was shown as mixed income residential and open space.

Other previous studies include a geotechnical report prepared for the Department of Health property at the south end of campus in 2016. In 2009 Davis Heshaies LLC authored a report titled, "Feasibility Study for the Closure of State Institution Facilities" that included Fircrest. Stormwater master planning is underway by ABHL for the Fircrest Campus. Stormwater planning for the adjacent Shorecrest High School east of Fircrest is also underway and is scheduled to make determination of the requirements for Hamlin Creek by September or October 2018.

In addition, a power systems project is in design by Sazan Group that will replace all aging medium voltage feeders on campus.

Location

15230 15th Avenue NE, Shoreline, WA 98155

Building Footprint and Site Features

The preferred Madrona Site, Alternative 3 is located in the upper campus toward the northwest side of the campus where the grade plateaus in a relatively level area with steeper grade to the east and west.

In this area, the site consists of two generally flat levels of grade, the grade to the north being about 5 ft higher in elevation than the southerly level. Since the program prioritizes the facility to be at a single level, this will be accomplished by importing of 5-6 ft of fill toward the south half of the facility. This southerly (lower) level was formerly a tennis court and is currently concrete surfaced.

The site is bounded by the steep grade drop to lower campus to the east. To the west is the existing campus entry drive and a thick band of evergreen trees screening the site from the 15th Avenue arterial and a single family neighborhood. The proposed design creates a new entry onto 15th Avenue for better visibility to the neighborhood. Staff noted that increased visibility would likely lead to more community volunteerism.

The ability to access the Activity Building as a pedestrian or in a wheelchair instead of being transported by van from lower campus is of benefit and provides the opportunity for increased quality of life. The grade changes about 6 – 8 feet down to the Activity Building so a zigzag ramp is shown or a lift could be added.

To the north and northeast, the 6 existing old nursing facility buildings, called the Y-Buildings,

step down the hillside.To the north beyond the property line is Hamlin Park. To the northwest is the proposed location for two new required water tanks. New visitor and staff parking are also located to the north.

The main entry faces 15th Avenue and the greater community. The service entry connects to an existing roadway to lower campus and main commercial kitchen. Meals will be brought from lower campus by truck, unloaded at the central service dock and distributed to each of the Pod Country Kitchens.

Stormwater Requirements

Fircrest Campus soils on the campus are expected to generally have areas of existing fill above glacial till. Glacial till is a very dense, silty sand with gravel, with low drainage permeability. Storm drainage requirements for the Fircrest property are guided by the 2012 Stormwater Management Manual for Western Washington amended in 2014 as adopted by and amended by the City of Shoreline.

Onsite Stormwater Management is required for all new and replaced impervious surface. For the Madrona site, this will consist of pervious pavement, bioretention cells, and rainwater harvesting.

Flow control facilities will include two underground concrete detention vaults for a total of approximately 245,000 cubic feet of volume positioned to avoid potential future facility expansion (see previous Alternatives Section of report).

Ownership of the Site

Much of the Fircrest Campus, including the Madrona site is owned and managed by the Washington State Department of Natural Resources for the benefit of DSHS. Next steps should include determining what additional agreements or land transfers will need to occur for project development.

Easements and Setbacks

No issues

From Fircrest Campus Master Plan Study

Potential Issues with the Surrounding Neighborhood

The City of Shoreline requires a Master Development Plan be completed for the project. The work on this plan is now underway by AHBL and is expected to be completed by June 2019.

The proposed design proposes a new campus entry from 15th Avenue, a major arterial. A current major campus entry, with stop light, is located to the south about a block. Traffic studies will be needed, and the Master Development Plan should study the connections with 15th Avenue.

The Fircrest side of 15th Avenue doesn't have sidewalks. A major project at Fircrest is likely to trigger street improvements but the extent of those improvements north-south will need to be resolved.

The Preferred Alternative 3 offers the least interference with the ongoing operations of Fircrest Campus.

Utility Extension Issues – Water System

The water system is a significant project cost. It has been determined that the water flow capacity for the campus is sub-standard. This may have contributed to the loss of the previous Laundry Building by fire. The City of Shoreline may require 2 new water tanks to be located in the northwest corner of the campus before another building project can proceed. The costs of the new water tanks and distribution system are assumed to be part of this project. It may be possible to construct the Madrona site development with a loop system around the new project without upgrading the entire water distribution of the campus as shown on the Civil Site Plan.

POTENTIAL ENVIRONMENTAL IMPACTS

Green Space and Natural Amentities

i. Green space and natural amenities that need to be preserved.

No.

Site Mitigation

ii. Required or potential site mitigation, including possible history of contaminants.

The northwest portion of the Madrona site previously contained a building with a basement that had been cleaned out and demolished to 6 ft below grade leaving clean concrete below ground. According to Fircrest staff, at the northeast side of the proposed building footprint another demolished building was turned over into the soil. It is expected that the soil in this area contains possible hazardous meterials such as asbestos containing materials .

Critical Areas

iii. Wetlands and shorelines

No.

iv. Shoreline jurisdiction issues

No.

SEPA

v. Requirements for SEPA (State Environmental Policy Act) or an environmental impact statement.

See Surrounding Neighborhood above. The Master Development Plan that is underway is expected to address SEPA.

vi. Other regulatory requirements

No Issues

Parking and Access Issues

The next design phase or Master Development Plan work (see Section above on Surrounding Neighborhood) should include a traffic and parking study. The Shoreline Zoning Code has parking requirements for a list of building uses but the Fircrest parking needs are so unique, a parking study is recommended.

Impact on surroundings due to construction

The demolition of one Y-Building, required for placement of the Water Tanks, may require additional maintenance precautions for the existing Nursing Facility in the Y-Buildings. Fircrest maintenance staff have noted that clients reside in 5 of the buildings while the 6th is used as a backup for maintenance redundancy.

The campus loop road provides alternate routes to lower campus from the main entry that can be used to bypass the major construction area. Construction related utility outages will need to be coordinated with operations of the lower campus.

LONG-TERM PLANS

Identify whether the proposed project is consistent with applicable long-term plans.

As discussed in the “Site Studies” section above, the Preferred Alternative is a departure from the Fircrest Master Plan of 2010 but is based on additional information that was not considered by the Master Plan. The 2010 plan was an internal Fircrest study and not shared with the City of Shoreline. The Master Development Plan now underway is part of the City of Shoreline development process.

LAWS AND REGULATIONS

Provide documentation that indicates the preferred Alternative is consistent with the following:

i. High Performance/ LEED Silver +Netzero

See LEED checklist in appendix.

The study also compared the life cycle costs of LEED Silver with LEED Silver plus Netzero. LEED Silver incorporates sustainability benefits in multiple categories including energy, water, air quality, and materials. The Netzero alternative adds an upgrade to the building envelope, mechanical, and electrical systems such that the addition of photo-voltaic panels, generates the year- long building energy consumption to zero. The life-cycle analysis of these two alternatives showed that the benefit of the premium paid for Netzero was not offset by energy savings over 30 years. However, by 50 years the costs of Netzero were close to paying off.

Per state policy, the Preferred Alternative will be LEED Silver plus Netzero.

ii. Greenhouse Gas Emissions

The Madrona site has better access to public transit than the other Alternatives on the lower eastern campus. More staff use of public transit will reduce greenhouse gas emissions.

iii. Archaeological and cutural resources

Not addressed at this time.

iv. American with Disabilities Act

The Project will comply per all requirements and codes.

v. Information required by RCW 43.88.0301(1)

See declaration answers in appendix.

vi. Other codes that will be followed

As Required by the Centers of Medicare and Medicaid Services (CMS):

42 CFR (Code of Federal Regulations) Chapter IV, Section 483.90, October 1, 2017 edition (CMS adopted standard for Medicare certified nursing facilities)

2018 Life Safety Code – NFPA 101 (CMS adopted standard for Medicare certified facilities)

It is the State's discretionary decision that Washington Department of Health Construction Review Services will review the building design and that the Nursing Facility comply with the WAC (Washington Administrative Code) Chapter 388-97 Nursing Homes in addition to federal CFR requirements..

Other codes include the current set of codes and regulations as required by Authorities Having Jurisdiction (AHJs).

FURTHER STUDY AREAS

Identify problems that require further study (for example, environmental contaminates, traffic studies, or IT or other infrastructure challenges). Evaluate identified problems to establish probably costs and risks.

Recommended areas of further study are as follows:

- Confirm extent of Water Tanks and demolition of Y-Building.
- Environmental Phase 1 for suspected soil contamination.
- Traffic and Parking Study.
- Confirm if project to include Commercial Kitchen.
- Confirm that Laundry Building location.
- Confirm extent of Street Front Improvements on 15th Avenue
- Confirm new campus entry location and signal requirements.

- Confirm if City of Shoreline will limit water distribution to looping Alternative 3.
- DAHP requirements.
- Involve DOH Construction Review Services early in next design phases.
- Demographics of the growing need for DD Nursing Care and available Nursing Facility Capacity. (See Attune Report in Appendix.)

- Consider future use of Activity Building to serve as Resource Center or Out-Patient Center to support aging DD residents in broader community (like a PACE Center - Program for All-Inclusive Care of the Elderly).
- Upgrading the Fircrest Nursing Facility operations to Electronic Medical Records.

SIGNIFICANT COMPONENT- LAUNDRY

Identify significant or distinguishable components, including major equipment and ADA requirements in excess of existing code.

The Fircest School Central Laundry Building was lost to fire in April 2017.

Alternatives Studied

Laundry replacement options studied include:

- Alt L1- Handling Laundry at Rainier
- Alt L2- Outsourcing
- Alt L3- New Laundry Facility at Fircrest

Alternative L1 – Handling Laundry at Rainier

Fircrest laundry has been driven to the Rainier laundry facility since the fire. With the use of a truck already owned by Fircrest and valued at $44,700, a driver transports laundry to Rainier 3 days per week. Three staff from Fircrest drive in a fuel-efficient rental car to Rainier 3 days a week. There are also 3 staff that stay at Fircrest and 4 staff that stay at Rainier who also work on the Fircrest laundry processing.

ALT L1 - COSTS OF HANDLING LAUNDRY AT RAINIER	
	TOTAL
Delivery & Transp of workers & linen	$ 93,694
Laundry Processing Labor (dirty at Rainier, clean at Fircrest)	$ 401,789
Machine util, repair, mtn at Rainier	$ 65,564
	$ 561,047

Full calculations are provided in Appendix L.

Alternative L2 – Outsourcing Laundry

Three commercial laundry operators located in Shoreline were contacted and they provided their cost per pound per month.

1) North Seattle Cleaners: $2.50
2) Downtown Cleaners: $2.25
3) Sno-King: $2.50

Each vendor was requested to quote for 63,000 lbs of laundry per month plus the cost of pressing for 12,217 pieces. Only North Seattle Cleaners said they had the capacity to handle the job. They are located within a quarter mile of Fircrest School. Their cost is shown in the table below.

Alternative L3 – New Laundry Facility at Fircrest

The laundry building cost estimate assumed the building alone is LEED Silver plus Net Zero energy usage. The team worked with Lind Industries of Lynden, who provided commercial equipment costs. Checking with their suppliers,

they found there is no feasible commercial heat pump laundry washing system and most cost-effective and practical system uses a gas boiler. The use of gas is not allowed by Netzero, so the equipment has to be exempted from the Netzero calculations. The equipment does have other sustainable features that were included in the cost estimate: equipment for recapture of rinse water and use of drier exhaust heat for pre-heating the hot water boiler system. The list of equipment and hours of operation of each piece of equipment are found in Appendix L. The building is budgeted at 7000 sf, 24 ft ceiling clearance with office and two staff toilets.

The Maximum Allowable Construction Cost of a new Laundry Facility is $6,064,109. The project cost is $8,705,785.

LAUNDRY COST OPTIONS			
	CONSTRUC-TION COST	PROJECT COST	OPERATION COST PER YR
ALT L1- Handling at Rainier			$561,047
ALT L2 – Out-sourcing			$4,089,060
ALT L3 - New Laundry at Fircrest	$6,064,109	$8,705,785	$467,353

Preferred Alternative – L1 Handling Laundry at Rainier

For Alternate L1 – Handling Laundry at Rainier, the transport cost of $93,694 per year is much less than the project cost of new construction. The simple ratio indicates it would take about 93 years of saving transport costs to pay-back the initial project cost. The preferred Alternative is L1, continuing to handle Fircrest Laundry at Rainier.

SIGNIFICANT COMPONENT-TRANSITION BUDGET

Identify significant or distinguishable components, including major equipment and ADA requirements in excess of existing code.

Transition costs are an additional component that need to be added to the initial operating budget. The Transition Budget should include additional management staff and a superintendent expert in Nursing Facility operations for establishing the initial procedures and institutional staff culture. Additional nursing and CNA staff should be budgeted, so long term staff who know the clients are available for more 1 to 1 connection with clients to ease the stress of frail clients entering the new environment.

IT SYSTEMS

Identify planned IT systems that affect the building plans.

Fircrest currently doesn't have Electronic Medical Records, EMRs, which is being a standard of practice for Nursing Facilities to better track patient care. Fiber on the Fircrest campus is not robust enough to handle Electronic Records nor will it handle any of today's standards for data/voice transmission. However, DSHS has an upcoming technology project to upgrade the fiber on campus.

Costs for upgrading the fiber to Alternative 3 is included in the budget. The costs also include a Communication Rooms in the Admin/ Services Wing and Communication Closets in the Cottages. IT needs should be coordinated with the Office of the Chief Information Officer (OCIO) as part of next steps.

BUILDING COMMISSIONING

Describe planned building commissioning to ensure systems function as designed.

The project is to be LEED Silver plus Netzero. LEED Silver requires enhanced commissioning. The commissioning must be provided by a Commissioning Authority that has documented commissioning process experience on at least two building projects with a similar scope of work. Commissioning will include mechanical, electrical, plumbing and renewable energy systems and assemblies.

PROJECT & FUTURE PHASES

Describe any future phases, plans or other facilities that will affect this project.

Potential Project Phasing

Due to the urgent project need, project phasing should be considered:

Phase 1

Admin / Service Wing plus two north Cottages

Water Tanks and distribution lines

Site utilities stubbed out.

Move-in for 40 clients and initial staffing.

Phase 2

Southern 4 Cottages

Complete sitework.

Move-in for 60 clients and staffing.

The phasing shown above could decrease design time by 3 months, decrease permitting time by 1 month and construction time by 4 months for a total 8 months saving. However, there is likely to be a cost premium for phasing.

On-going & Future Phases.

Projects are now underway upgrading the campus electrical systems.

The campus storm water master planning is also underway.

The water system study needs to be completed to define the new capacity. At this time, it appears new water tanks must be installed, and a distribution loop installed around Alternative 3 before the Nursing Facility can open.

A second phase of the water distribution project will extend to pick up the remainder of the campus.

The campus is currently on a central steam system. Alternative 3 will not connect to the steam system and in time the campus steam system will be decommissioned.

The Needs Study by Attune Healthcare cited in the Problem section and provided in the Appendix, finds that the population of Acute Developmentally Disabled needing Nursing Facility care will continue to increase with the overall state population growth. Future phases of Nursing Facility expansion can be expected.

PROJECT MANAGEMENT & DELIVERY METHOD

Identify the proposed project delivery method, such as design-build, phased construction, general contractor / construction manager (GC/CM), or conventional design/bid/build.

Project Delivery

General Contractor/Construction Manager (GC/CM) is the proposed project delivery method.

In the GC/CM process, the owner contracts with an Architect/Engineer firm for design and also retains the services of a GC/CM through a preconstruction services contract. After the design has sufficiently progressed, the owner negotiates a Maximum Allowable Construction Cost (MACC) and Guaranteed Maximum Price (GMP) with the GC/CM.

While DHSH has traditionally delivered projects via the Design-Bid-Build process, GC/CM offers advantages:

1. The proposed project is to be certified LEED Silver. Design-Bid-Build does not allow for collaboration between contractors and the design team during design, which can impact attainable LEED credits, jeopardizing LEED Silver accredidation.
2. With the contractor on board during design, a GC/CM can increase the likelihood of meeting DSHS goals for sustainability, especially LEED silver requirements.
3. Reduces risk of change orders during construction.
4. Having a contractor on board during design can help reconcile conflicting cost estimates and provide more accurate value engineering.
5. Overall reduced schedule, given the likelihood of a fast-track schedule for this project.

One disadvantage to GC/CM delivery, is that it requires multiple contracts during design. The process often involves payment of a premium for additional time and investment by the GC/CM.

GC/CM Approvals

Justify the proposed method of project delivery, and link the justification for using GC/CM to the requirements in RCW 39.10.340

In order to use the GC/CM project delivery method, DSHS will seek project approval from the Capital Project Advisory Review Board, Project Review Committee, to utilize the GC/CM process per RCW 39.10.340

GC/CM is allowed in WA State per RCW . 39.10.340 limitations. The proposed nursing facility project meets the following under RCW 39.10.340:

1. Implementation of the project involves complex scheduling, phasing, or coordination—fast-track scheduling is proposed.
2. The project involves construction at an occupied facility which must continue to operate during
3. construction — buildings adjacent to the nursing facility site are occupied.
4. The involvement of the general contractor / construction manager during the design stage is critical to the success of the project — specifically attaining LEED Silver credits.

Project Management

Describe how the project will be managed within the agency:

(a) Identify roles and responsibilities for the project.

Consistent with prior DSHS capital projects, the project will be managed through The Department of Social and Health Services (DSHS) Office of Capital Programs (OCP).

(b) Identify in-house staffing requirements for the proposed project.

Recommended DSHS In-house staffing includes a full-time project manager from schematic design through occupancy. Additional staff from Fircrest School include a representative from facilities maintenance and the assistant superintendant to attend design meetings and constructability review meetings.

(c) Identify consultant services, DES resources, or additional staff needed to manage the project.

Client Relocation and Project Staffing

Client relocation into a new setting is known to cause relocation trauma, particularly for highly frail clients. Consideration should be made of staff continuity.

The Operating Budget should provide additional staff support during client relocation so that long-time staff can attend to reducing relocation trauma. Staggering of the relocation process should also be considered to better understand mitigating strategies before moving those clients likely to be the most sensative.

The Operating Budget should also provide additional Administrative support during client relocation and during staffing transition from 90 to 120 nursing bed capacity.

The DSHS Project Manager (PM) assigned to the project will be supported by resources across several state departments and agencies:

- DSHS Assistant Director of Capital Facilities Management and other operational support staff as needed.
- Department of Enterprise Services (DES) contract specialists for executing of the projects agreements for services and contracts for construction.

SCHEDULE

i. Provide a high-level milestone schedule for the project, including key dates for budget approval, design, bid, acquisition, construction, equipment installation, testing, occupancy, and full operation.

ii. Incorporate value-engineering analysis and constructability review into the project schedule, as required by RCW 43.88.110(5)(c)

Milestone Schedule

Master Development Plan	August 2018 to August 2019
Budget Approval	March 2019
Funding Alottments	August 2019
Environmental Phase I / DAHP/ Geotech/ Survey	August 2019
Consultant Selection / Agreement	November 2019
Water System Schematic Design-Construction Documents	November 2019 – July 2020
Nursing Facility Schematic Design	November 2019 – March 2020
GC/CM Bid & Selection	March 2020
Decontamination of soils as required	March 2020
NF Design Development -Construction Documents	April 2020 – November 2020
Value-Engineering/ Constructibility Analysis	December 2020 – January 2021
Permitting	November 2020 to March 2021
Permitting Sub-Contractor Bidding:	February 2021
Construction Start Date:	April 2021
Construction Completion Date:	October 2022
Commissioning & FFE Installation	November 2022
Occupancy	December 2022-February 2023

:

iii. Describe factors that may delay the project schedule, such as an environmentally sensitive location, possible presence of archaeological or historical assets, or possible contamination of the site or building undergoing renovation.

See above for discussion of possible soil contamination. DAHP is noted as still to be completed.

iv. Describe the permitting or local government ordinances or neighborhood issues (such as location or parking compatibility) that could affect the schedule.

There is about 3 month's of lag time in the Milestone Schedule of Master Development Plan completion to start of nursing facility design. If SEPA, parking or traffic issues delay the Master Development Plan beyond 3-4 months, the Nursing Home design may be impacted.

v. Identify when the local jurisdiction will be contacted and whether community stakeholder meetings are part of the process.

Community stakeholder meetings should be part of the Master Development Plan now underway that will require a public hearing for approval.

5 PROJECT BUDGET PREFERRED ALTERNATIVE

FIRCREST SCHOOL NEW NURSING CAPACITY
Predesign Study | October 21, 2018

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ASSUMPTIONS

i. Major assumptions used in preparing the cost estimate:

1. Assumes an April 2021 Construction Start and an anticipated move-in date of December 2022 to February 2023 for an 18 month construction duration.
2. Cost estimates assume a 3.12% inflation rate.
3. A/E fee is Class B of 6.12%
4. Assumed construction delivery method is GCCM (General Contractor / Construction Manager).
5. Cost estimate Alternatives are either LEED Silver or LEED Silver plus Netzero as shown.

COST ESTIMATE SUMMARIES (ALTERNATIVES 1A – 3C)

ii. *Summary table of Uniformat II Level 2 cost estimates.*

90 BEDS

ALTERNATIVE 1 - LEED SILVER

90-Beds Building 66 Renovation plus Expansion

Item	Description	Gross Square Feet	$/ GSF	Cost
1	Site Construction			$ 9,188,390
2	Relocate 1st Fl Offices	3,600	400	$ 1,440,000
3	Renovation Building Construction	67,100	266	$ 17,834,553
4	New Building Construction	39,480	450	$ 17,766,000
5	Water Infrastructure			$ 2,430,000
6	Frontage Improvements			$ 1,081,739
Total Estimate Construction Cost in Today's Dollars*				**$ 49,740,682**

Escalation is EXCLUDED. See C-100 Form for Total Construction Budget w/ Escalation

ALTERNATIVE 1 - LEED SILVER + NETZERO

90-Beds Building 66 Renovation plus Expansion

Item	Description	Gross Square Feet	$/ GSF	Cost
1	Site Construction			$ 9,188,390
2	Relocate 1st Fl Offices	3,600	400	$ 1,440,000
3	Renovation Building Construction	67,100	277	$ 18,617,610
4	New Building Construction	39,480	489	$ 19,325,127
5	Water Infrastructure			$ 2,430,000
6	Frontage Improvements			$ 1,081,739
Total Estimate Construction Cost in Today's Dollars				**$ 52,082,866**

Escalation is EXCLUDED. See C-100 Form for Total Construction Budget w/ Escalation

100 BEDS

ALTERNATIVE 2A - LEED SILVER

100-Beds ATP Site

Item	Description	Gross Square Feet	$/ GSF	Cost
1	Site Construction			$ 10,168,421
2	Relocate ATP program	54,000	400	$ 21,600,000
3	Demo ATP Building (wood-frame)	54,000	30	$ 1,620,000
4	New Building Construction	101,300	413	$ 41,874,025
5	Frontage Improvements			$ 1,081,739
6	Water Infrastructure			$ 2,430,000
Total Estimate Construction Cost in Today's Dollars				**$ 78,774,185**

Escalation is EXCLUDED. See C-100 Form for Total Construction Budget w/ Escalation

ALTERNATIVE 2A - LEED SILVER + NETZERO

100-Beds ATP Site

Item	Description	Gross Square Feet	$/ GSF	Cost
1	Site Construction			$ 10,168,421
2	Relocate ATP program	54,000	400	$ 21,600,000
3	Demo ATP Building (wood-frame)	54,000	30	$ 1,620,000
4	New Building Construction	101,300	451	$ 45,676,469
5	Frontage Improvements			$ 1,081,739
6	Water Infrastructure			$ 2,430,000
Total Estimate Construction Cost in Today's Dollars				**$ 82,576,629**

Escalation is EXCLUDED. See C-100 Form for Total Construction Budget w/ Escalation

160 BEDS

ALTERNATIVE 2B - LEED SILVER

160-Beds ATP Site

Item	Description	Gross Square Feet	$/ GSF	Cost
1	Site Construction			$ 11,811,030
2	Relocate ATP program	54,000	400	$ 21,600,000
3	Demo ATP Building (wood-frame)	54,000	30	$ 1,620,000
4	New Building Construction	149,300	414	$ 61,811,434
3	Frontage Improvements			$ 1,081,739
5	Water Infrastructure			$ 2,430,000
Total Estimate Construction Cost in Today's Dollars				**$ 100,354,203**

Escalation is EXCLUDED. See C-100 Form for Total Construction Budget w/ Escalation

ALTERNATIVE 2B - LEED SILVER + NETZERO

160-Beds ATP Site

Item	Description	Gross Square Feet	$/ GSF	Cost
1	Site Construction			$ 11,811,030
2	Relocate ATP program	54,000	400	$ 21,600,000
3	Demo ATP Building (wood-frame)	54,000	30	$ 1,620,000
4	New Building Construction	149,300	455	$ 67,945,581
5	Frontage Improvements			$ 1,081,739
6	Water Infrastructure			$ 2,430,000
Total Estimate Construction Cost in Today's Dollars				**$ 106,488,350**

Escalation is EXCLUDED. See C-100 Form for Total Construction Budget w/ Escalation

100 BEDS

ALTERNATIVE 3A - LEED SILVER

100-Beds Madrona Site

Item	Description	Gross Square Feet	$/ GSF	Cost
1	Site Construction			$ 13,491,517
2	Frontage Improvements			$ 1,081,739
3	New Building Construction	97,200	413	$ 40,143,600
4	Water Infrastructure			$ 2,430,000
Total Estimate Construction Cost in Today's Dollars				**$ 57,146,856**

Escalation is EXCLUDED. See C-100 Form for Total Construction Budget w/ Escalation

ALTERNATIVE 3A - LEED SILVER + NETZERO

100-Beds Madona Site

Item	Description	Gross Square Feet	$/ GSF	Cost
1	Site Construction			$ 13,491,517
2	Frontage Improvements			$ 1,081,739
3	New Building Construction	97,200	451	$ 43,837,200
4	Water Infrastructure			$ 2,430,000
Total Estimate Construction Cost in Today's Dollars				**$ 60,840,456**

Escalation is EXCLUDED. See C-100 Form for Total Construction Budget w/ Escalation

ALTERNATIVE 3B - LEED SILVER + NETZERO **** Preferred

120-Beds Madona Site

Item	Description	Gross Square Feet	$/ GSF	Cost
1	Site Construction			$ 13,340,092
2	Frontage Improvements			$ 1,081,739
3	New Building Construction	112,220	451	$ 50,629,245
4	Water Infrastructure			$ 2,430,000
Total Estimate Construction Cost in Today's Dollars				**$ 67,481,076**

Escalation is EXCLUDED. See C-100 Form for Total Construction Budget w/ Escalation

160 BEDS

ALTERNATIVE 3C - LEED SILVER

160-Beds Madrona Site

Item	Description	Gross Square Feet	$/ GSF	Cost
1	Site Construction			$ 14,532,660
2	Demo 2 Y-Buildings	26,000	39	$ 1,003,248
3	Frontage Improvements			$ 1,081,739
4	New Building Construction	140,006	413	$ 57,822,478
5	Water Infrastructure			$ 2,430,000
Total Estimate Construction Cost in Today's Dollars				**$ 76,870,125**

Escalation is EXCLUDED. See C-100 Form for Total Construction Budget w/ Escalation

ALTERNATIVE 3C - LEED SILVER + NETZERO **** Preferred

160-Beds Madrona Site

Item	Description	Gross Square Feet	$/ GSF	Cost
1	Site Construction			$ 14,532,660
2	Demo (2) Y-Buildings	26,000	39	$ 1,003,248
3	Frontage Improvements			$ 1,081,739
4	New Building Construction	140,006	449	$ 62,810,004
5	Water Infrastructure			$ 2,430,000
Total Estimate Construction Cost in Today's Dollars				**$ 81,857,651**

Escalation is EXCLUDED. See C-100 Form for Total Construction Budget w/ Escalation

iii. The C-100 in Excel

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Agency	Department of Social and Health Services
Project Name	Fircrest Nursing Facility- A3 120 Beds Zero Energy
OFM Project Number	

Contact Information	
Name	Sage Architectural Alliance/The Robinson Company
Phone Number	206 556-4181/206 441-8872
Email	

Statistics			
Gross Square Feet	118,220	MACC per Square Foot	$571
Usable Square Feet	73,420	Escalated MACC per Square Foot	$634
Space Efficiency	62.1%	A/E Fee Class	B
Construction Type	Nursing homes	A/E Fee Percentage	5.78%
Remodel	No	Projected Life of Asset (Years)	
Additional Project Details			
Alternative Public Works Project	No	Art Requirement Applies	
Inflation Rate	3.12%	Higher Ed Institution	
Sales Tax Rate %	10.10%	Location Used for Tax Rate	
Contingency Rate	5%		
Base Month	June-18		
Project Administered By	Agency		

Schedule			
Predesign Start	June-18	Predesign End	October-18
Design Start	November-19	Design End	February-21
Construction Start	April-21	Construction End	October-22
Construction Duration	18 Months		

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Project Cost Estimate

Total Project	**$93,183,261**	Total Project Escalated	**$103,246,173**
		Rounded Escalated Total	**$103,246,000**

STATE OF WASHINGTON		
AGENCY / INSTITUTION PROJECT COST SUMMARY		
Agency	Department of Social and Health Services	
Project Name	Fircrest Nursing Facility- A3 120 Beds Zero Energy	
OFM Project Number		

Cost Estimate Summary

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
A/E Basic Design Services	$2,825,844		
Extra Services	$2,193,000		
Other Services	$1,529,582		
Design Services Contingency	$327,421		
Consultant Services Subtotal	**$6,875,848**	**Consultant Services Subtotal Escalated**	**$7,417,913**

Construction			
Construction Contingencies	$3,374,054	Construction Contingencies Escalated	$3,767,132
Maximum Allowable Construction Cost (MACC)	$67,481,076	Maximum Allowable Construction Cost (MACC) Escalated	$74,912,902
Sales Tax	$7,156,368	Sales Tax Escalated	$7,946,684
Construction Subtotal	**$78,011,498**	**Construction Subtotal Escalated**	**$86,626,718**

Equipment			
Equipment	$4,769,050		
Sales Tax	$481,674		
Non-Taxable Items	$0		
Equipment Subtotal	**$5,250,724**	**Equipment Subtotal Escalated**	**$5,862,435**

Artwork			
Artwork Subtotal	**$374,565**	**Artwork Subtotal Escalated**	**$374,565**

Agency Project Administration			
Agency Project Administration Subtotal	$1,395,626		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$1,995,626**	**Project Administation Subtotal Escalated**	**$2,228,117**

Other Costs			
Other Costs Subtotal	**$675,000**	**Other Costs Subtotal Escalated**	**$736,425**

Project Cost Estimate			
Total Project	**$93,183,261**	Total Project Escalated	**$103,246,173**
		Rounded Escalated Total	**$103,246,000**

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0446**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$2,825,844			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$2,825,844**	**1.0649**	**$3,009,242**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$100,000			
Geotechnical Investigation	$70,000			
Commissioning	$50,000			
Site Survey	$85,000			
Testing	$160,000			
LEED Services	$170,000			
Voice/Data Consultant	$35,000			
Value Engineering	$80,000			
Constructability Review	$95,000			
Environmental Mitigation (EIS)	$60,000			
Landscape Consultant	$90,000			
ELCCA	$65,000			
LCCT	$85,000			
Reimburseables incl Reprographics prior to bid	$100,000			
Advertising	$3,000			
Traffic analysis	$80,000			
Envelope Consultant	$65,000			
Interior Design	$90,000			
Acoustic Design	$60,000			
Security Consultant	$60,000			
Audio Visual Consultant	$25,000			
Cost and Scheduling	$65,000			
Value Engineering Participation	$65,000			
Constructability Review Participation	$65,000			
Environmental Graphics/Signage	$40,000			
Lighting Consultant	$50,000			
Heatlhcare Services Consultant	$75,000			
Door Hardware Consultant	$15,000			
SEPA/Land Use	$35,000			
Net Zero Energy Consultant	$155,000			
Sub TOTAL	**$2,193,000**	**1.0649**	**$2,335,326**	Escalated to Mid-Design

4) Other Services				
Bid/Construction/Closeout	$1,269,582			31% of A/E Basic Services
HVAC Balancing				
Staffing				
Commissioning and Training	$120,000			
Reimburseables/Reprographics for bid and construction	$50,000			
Construction Materials Testing	$90,000			
Insert Row Here				
Sub TOTAL	**$1,529,582**	**1.1165**	**$1,707,779**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$327,421			
Other				
Insert Row Here				
Sub TOTAL	**$327,421**	**1.1165**	**$365,566**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$6,875,848**		**$7,417,913**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$4,353,548			
G20 - Site Improvements	$1,860,560			
G30 - Site Mechanical Utilities	$6,931,585			
G40 - Site Electrical Utilities	$194,400			
G60 - Other Site Construction				
Water Tank System	$2,430,000			
Insert Row Here				
Sub TOTAL	**$15,770,092**	**1.0910**	**$17,205,171**	
2) Related Project Costs				
Offsite Improvements	$1,081,739			
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$1,081,739**	**1.0910**	**$1,180,178**	
3) Facility Construction				
A10 - Foundations	$2,798,538			
A20 - Basement Construction	$544,731			
B10 - Superstructure	$5,714,399			
B20 - Exterior Closure	$7,195,651			
B30 - Roofing	$2,452,354			
C10 - Interior Construction	$5,986,763			
C20 - Stairs				
C30 - Interior Finishes	$5,254,545			
D10 - Conveying				
D20 - Plumbing Systems	$2,920,983			
D30 - HVAC Systems	$2,886,321			
D40 - Fire Protection Systems	$1,602,683			
D50 - Electrical Systems	$8,770,317			
F10 - Special Construction				
F20 - Selective Demolition				
General Conditions	$2,245,065			
Building Related Site Improvements	$237,295			
PV Panels	$2,019,600			
Insert Row Here				
Sub TOTAL	**$50,629,245**	**1.1165**	**$56,527,553**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$67,481,076**		**$74,912,902**	

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7) Construction Contingency				
Allowance for Change Orders	$3,374,054			
Other				
Insert Row Here				
Sub TOTAL	**$3,374,054**	**1.1165**	**$3,767,132**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1165**	**$0**	
Sales Tax				
Sub TOTAL	**$7,156,368**		**$7,946,684**	
CONSTRUCTION CONTRACTS TOTAL	**$78,011,498**		**$86,626,718**	

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Cost Estimate Details

Equipment				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
E10 - Equipment	$1,402,750			
E20 - Furnishings	$1,683,000			
F10 - Special Construction				
IT Equip/computers/printers	$1,683,300			
Insert Row Here				
Sub TOTAL	**$4,769,050**	**1.1165**	**$5,324,645**	
1) Non Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1165**	**$0**	
Sales Tax				
Sub TOTAL	**$481,674**		**$537,790**	
EQUIPMENT TOTAL	**$5,250,724**		**$5,862,435**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Project Artwork	$374,565				0.5% of Escalated MACC for new construction
Higher Ed Artwork	$0				0.5% of Escalated MACC for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$374,565**		**NA**	**$374,565**	

Green cells must be filled in by user

Cost Estimate Details

Project Management				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
Agency Project Management	$1,395,626			
Additional Services				
Additional Management/Administration	$600,000			
Insert Row Here				
PROJECT MANAGEMENT TOTAL	**$1,995,626**	**1.1165**	**$2,228,117**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal	$125,000				
Historic and Archeological Mitigation					
Permit and Plan Review Fees	$550,000				
Insert Row Here					
OTHER COSTS TOTAL	**$675,000**		**1.0910**	**$736,425**	

Green cells must be filled in by user

PROPOSED FUNDING

Identify the fund sources and expected receipt of the funds. If alternatively financed, provide the projected debt service and fund source:

Funds are expected to be sourced from the Washington State building construction account with design and construction funding appropriated November 2019.

Alternative financing is not being pursued.

OPERATIONS & MAINTENANCE

i. Define the anticipated impact of the proposed project on the operating budget for the agency or institution. Include maintenance and operating assumptions (including FTEs)

The utilities and maintenance costs for the new 120-bed LEED Silver Netzero will be less than the existing 90-bed nursing facility.

Currently there are 5 operating Y-Buildings, but the plan is to put all 6 Y-Buildings in operation. The staffing of (6) 16-bed Y-Buildings is expected to be same as staffing (6) 20-bed cottages because the new design optimizes nursing care staffing.

ii. Show five biennia of capital and operating costs from the time of occupancy, including an estimate of building repairs, replacement, and maintenance:

Staffing Cost Assumptions

Staffing projections and associated operations costs were generated by operations consultant Attune Healthcare.

Staffing operations budget projections include the following assumptions:

1. Five Bieniums of capital and staffing operations costs (10 years, 2020-2029)
2. 5% per year discount rate for NPV (net present value).
3. 3.34% per year escalation rate for budget line items.

Building Utilities & Maintenance Assumptions

Operations and maintenance costs for the proposed nursing facility were calculated using the Life Cycle Cost Model. Utility charges were projected using historical utility charges and energy modeling from the mechanical and sustainability engineers.

FIVE BIENNIA OF CAPITAL AND OPERATING COSTS

ALTERNATIVE 1 - LEED SILVER + NETZERO- OPERATING COST

90-Beds Building 66 Renovation plus Expansion

Biennia	Years	Staffing Costs	Utility & Mtn Costs	Total Cost
1	2022-2023	$35,690,545	$2,136,994	$ 37,827,539
2	2024-2025	$34,571,194	$1,938,224	$ 36,509,418
3	2026-2027	$33,571,194	$1,758,061	$ 35,329,255
4	2028-2029	$32,436,278	$1,594,646	$ 34,030,924
5	2030-2031	$28,922,648	$1,446,334	$ 30,368,982
Total Operating Cost in Today's Dollars (NPV)				**$ 174,066,118**

FIVE BIENNIA OF CAPITAL AND OPERATING COSTS

ALTERNATIVE 2A - LEED SILVER + NETZERO- OPERATING COST

100-Beds ATP Site

Biennia	Years	Staffing Costs	Utility & Mtn Costs	Total Cost
1	2022-2023	$36,752,599	$2,215,818	$ 38,968,417
2	2024-2025	$35,599,703	$2,009,716	$ 37,609,419
3	2026-2027	$34,482,973	$1,822,909	$ 36,305,882
4	2028-2029	$33,401,273	$1,653,465	$ 35,054,738
5	2030-2031	$30,813,551	$1,499,683	$ 32,313,234
Total Operating Cost in Today's Dollars (NPV)				**$ 180,251,690**

FIVE BIENNIA OF CAPITAL AND OPERATING COSTS

ALTERNATIVE 2B - LEED SILVER + NETZERO- OPERATING COST

160-Beds ATP Site

Biennia	Years	Staffing Costs	Utility & Mtn Costs	Total Cost
1	2022-2023	$58,040,337	$3,247,013	$ 61,287,350
2	2024-2025	$56,219,662	$2,944,996	$ 59,164,658
3	2026-2027	$54,456,102	$2,671,252	$ 57,127,354
4	2028-2029	$52,694,252	$2,422,953	$ 55,117,205
5	2030-2031	$48,660,200	$2,197,604	$ 50,857,804
Total Operating Cost in Today's Dollars (NPV)				**$ 283,554,372**

FIVE BIENNIA OF CAPITAL AND OPERATING COSTS

ALTERNATIVE 3A - LEED SILVER + NETZERO- OPERATING COST

100-Beds Madrona Site

Biennia	Years	Staffing Costs	Utility & Mtn Costs	Total Cost
1	2022-2023	$36,752,599	$2,007,534	$ 38,760,133
2	2024-2025	$35,599,703	$1,820,806	$ 37,420,509
3	2026-2027	$34,482,973	$1,651,557	$ 36,134,530
4	2028-2029	$33,401,273	$1,498,041	$ 34,899,314
5	2030-2031	$30,812,861	$1,358,715	$ 32,171,576
Total Operating Cost in Today's Dollars (NPV)				**$ 179,386,062**

FIVE BIENNIA OF CAPITAL AND OPERATING COSTS

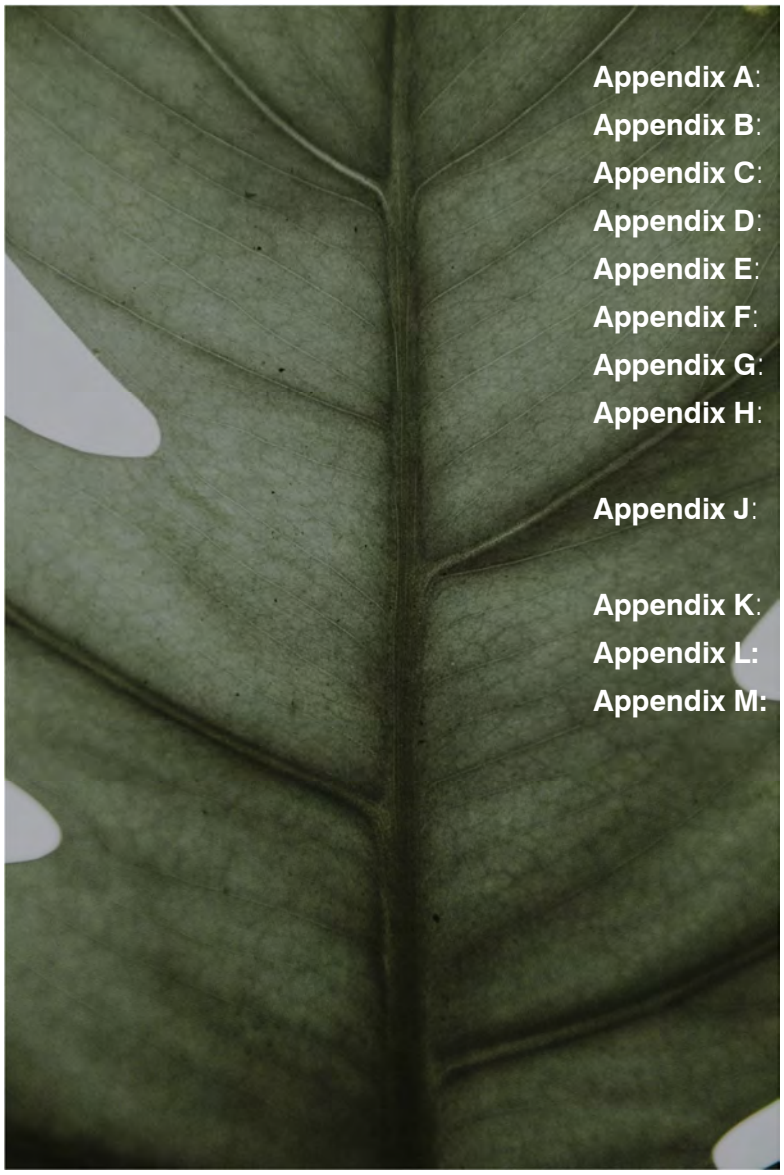
ALTERNATIVE 3C - LEED SILVER + NETZERO- OPERATING COST 160-Beds Madrona Site				
Biennia	Years	Staffing Costs	Utility & Mtn Costs	Total Cost
1	2022-2023	$55,385,792	$3,016,915	$ 58,402,707
2	2024-2025	$53,649,881	$ 2,736,300.37	$ 56,386,181
3	2026-2027	$51,965,487	$ 2,481,954.85	$ 54,447,442
4	2028-2029	$50,335,376	$ 2,251,251.41	$ 52,586,627
5	2030-2031	$46,434,667	$ 2,041,872.21	$ 48,476,539
Total Operating Cost in Today's Dollars (NPV)				**$ 270,299,497**

FURNITURE & EQUIPMENT

Clarify whether furniture, fixtures, and equipment are included in the project budget. If not included, explain:

Furniture and Equipment is included in the total project cost.

6 APPENDICES



Appendix A: Predesign Checklist
Appendix B: Life Cycle Cost Models (LCCM)
Appendix C: LEED Checklist
Appendix D: Campus Photos
Appendix E: Visioning Questionnaire Results
Appendix F: Detailed Space Needs Program
Appendix G: Operations Consultant Reports
Appendix H: Engineer's Existing Conditions Reports
Appendix J: Engineer's Preferred Alternative Report
Appendix K: Glossary
Appendix L: Laundry Analysis
Appendix M: Laundry C100 & LCCM

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APPENDIX A: PREDESIGN CHECKLIST

A predesign should include the content detailed here. OFM will approve limited scope predesigns on a case-by-case basis.

- ❖ **Executive Summary**
- ❖ **Problem Statement, Opportunity or Program Requirement**
  - ☑ **PAGE 2.1** Identify the problem, opportunity or program requirement that the project addresses and how it will be accomplished.
  - ☑ **PAGE 2.7** Identify and explain the statutory or other requirements that drive the project's operational programs and how these affect the need for space, location or physical accommodations. **PAGE 2.9** Include anticipated population projections (growth or decline) and assumptions.
  - ☑ **PAGE 2.10** Explain the connection between the agency's mission, goals and objectives; statutory requirements; and the problem, opportunity, or program requirements.
  - ☑ **PAGE 2.20** Describe in general terms what is needed to solve the problem.
  - ☑ **PAGE 2.21** Include any relevant history of the project, including previous predesigns that did not go forward to design or construction.
- ❖ **Analysis of Alternatives (including the preferred alternative)**
  - ☑ **PAGE 3.1** Describe all alternatives that were considered, including the preferred alternative. Include:
    - ☑ **PAGE 3.2** A no action alternative.
    - ☑ Advantages and disadvantages of each alternative. Please include a high-level summary table with your analysis.
    - ☑ Cost estimates for each alternative.
      - ☑ Provide enough information so decision makers have a general understanding of the costs.
      - ☑ Complete OFM's Life Cycle Cost Model (RCW 39.35B.050).
    - ☑ Schedule estimates for each alternative. Estimate the start, midpoint, and completion dates.
- ❖ **Detailed Analysis of Preferred Alternative**
  - ☑ Nature of space – how much of the proposed space will be used for what purpose (i.e., office, lab, conference, classroom, etc.)
  - ☑ Occupancy numbers.
  - ☑ Basic configuration of the building, including square footage number of floors.
  - ☑ Space needs assessment. Identify the guidelines used.
  - ☑ Site Analysis
    - ☑ Identify site studies that are completed or under way.
    - ☑ Location.

- ☑ Building footprint and its relationship to adjacent facilities and site features. Provide an aerial view, sketches of the building site, and basic floorplans.
- ☑ Stormwater requirements.
- ☑ Ownership of the site and any acquisition issues.
- ☑ Easements and setback requirements.
- ☑ Potential issues with the surrounding neighborhood, during construction and ongoing.
- ☑ Utility extension or relocation issues.
- ☑ Potential environmental impacts.
- ☑ Parking and access issues, including improvements required by local ordinances, local road impacts, and parking demand.
- ☑ Impact on surroundings and existing development with construction lay-down areas and construction phasing.
- ☑ Consistency with applicable long-term plans (such as the Thurston County and Capitol Campus master plans and agency or area master plans) as required by RCW 43.88.110.
- ☑ Consistency with other laws and regulations
- ☑ High-performance public buildings (Chapter 39.35D RCW).
- ☑ Greenhouse gas emissions reduction policy (RCW 70.235.070).
- ☑ Archeological and cultural resources (Executive Order 05-05 and Section 106 of the National Historic Preservation Act of 1966).
- ☑ Americans with Disabilities Act implementation (Executive Order 96-04).
- ☑ Compliance with planning under Chapter 36.70A RCW, as required by RCW 43.88.0301.
- ☑ Information required by RCW 43.88.0301(1).
- ☑ Other codes or regulations.
- ☑ Identify problems that require further study. Evaluate identified problems to establish probable costs and risk.
- ☑ Identify significant or distinguishable components, including major equipment and ADA requirements in excess of existing code.
- ☑ Identify planned IT systems that affect the building plans.
- ☑ Describe planned commissioning to ensure systems function as designed.
- ☑ Describe any future phases or other facilities that will affect this project.
- ☑ Identify and justify the proposed project delivery method. For GC/CM, link to the requirements in RCW 39.10.340.
- ☑ Describe how the project will be managed within the agency.

- ☑ Schedule
  - ☑ Provide a high-level milestone schedule for the project, including key dates for budget approval, design, bid, acquisition, construction, equipment installation, testing, occupancy, and full operation.
  - ☑ Incorporate value-engineering analysis and constructability review into the project schedule, as required by RCW 43.88.110(5)(c).
  - ☑ Describe factors that may delay the project schedule.
  - ☑ Describe the permitting or local government ordinances or neighborhood issues (such as location or parking compatibility) that could affect the schedule.
  - ☑ Identify when the local jurisdiction will be contacted and whether community stakeholder meetings are a part of the process.

❖ Project Budget Analysis for the Preferred Alternative

- ☑ Cost estimate
  - ☑ Major assumptions used in preparing the cost estimate.
  - ☑ Summary table of Uniformat Level II cost estimates.
  - ☑ The C-100. If project costs are outside the C-100 cost control range, explain.
- ☑ Proposed funding
  - ☑ Identify the fund sources and expected receipt of the funds.
  - ☑ If alternatively financed, provide the projected debt service and fund source. Include the assumptions used for calculating finance terms and interest rates.
- ☑ Facility operations and maintenance requirements
  - ☑ Define the anticipated impact of the proposed project on the operating budget for the agency or institution. Include maintenance and operating assumptions (including FTEs).
  - ☑ Show five biennia of capital and operating costs from the time of occupancy, including an estimate of building repair, replacement, and maintenance.
- ☑ Clarify whether furniture, fixtures, and equipment are included in the project budget. If not included, explain.

❖ Predesign Appendix

- ☑ Completed Life Cycle Cost Model.
- ❑ A letter from the Department of Archaeology and Historic Preservation.

APPENDIX B - LIFE CYCLE ALT 1,2 & 3 - 90 or 100 BED

Life Cycle Cost Analysis - Project Summary

Agency	
Project Title	

Existing Description	

Lease Option 1 Description	

Lease Option 2 Description	

Ownership Option 1 Description	Fircrest Nursing Facility A 3-100 Beds Leed Silver

Ownership Option 2 Description	Fircrest Nursing Facility A 2-100 Beds Leed Silver

Ownership Option 3 Description	Fircrest Nursing Facility A 1-90 Beds Leed Silver

Lease Options Information	**Existing Lease**	**Lease Option 1**	**Lease Option 2**
Total Rentable Square Feet	-	-	-
Annual Lease Cost (Initial Term of Lease)	$ -	$ -	$ -
Full Service Cost/SF (Initial Term of Lease)	$ -	$ -	$ -
Occupancy Date	n/a		
Project Initial Costs	n/a	$ -	$ -
Persons Relocating	-	-	-
RSF/Person Calculated			

Ownership Information	**Ownership 1**	**Ownership 2**	**Ownership 3**
Total Gross Square Feet	93,200	101,300	97,900
Total Rentable Square Feet	63,874	63,874	57,487
Occupancy Date	3/15/2022	3/15/2022	3/15/2022
Initial Project Costs	$ -	$ -	$ -
Est Construction TPC ($/GSF)	$ 794	$ 792	$ 688
RSF/Person Calculated	-	-	-

Financial Analysis of Options

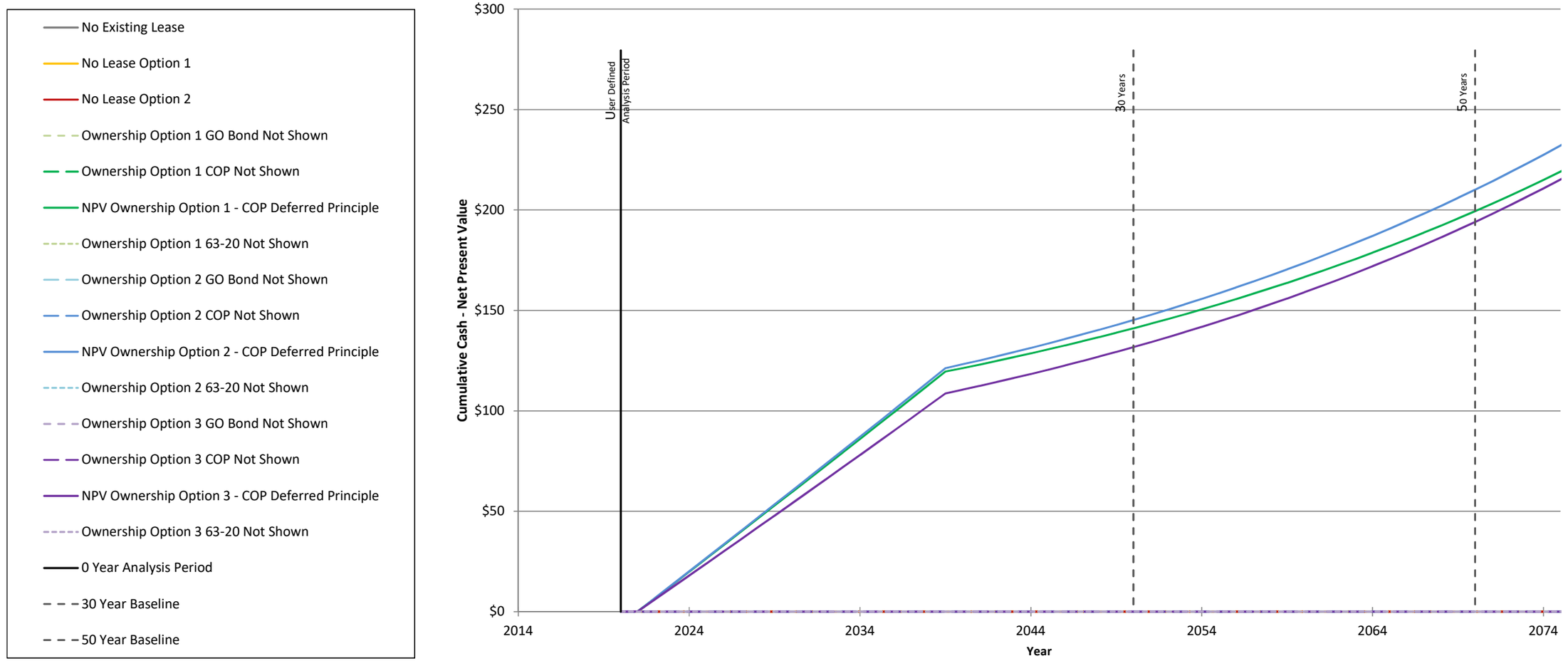
	Display Option?	Yes	Yes	Yes	No	No	Yes	No	No	No	Yes	No	No	No	Yes	No
	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
0	0 Year Cumulative Cash	$ -	$ -	$ -			$ -				$ -				$ -	
	0 Year Net Present Value	$ -	$ -	$ -			$ -				$ -				$ -	
	Lowest Cost Option (Analysis Period)															

	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
30	30 Year Cumulative Cash	$ -	$ -	$ -			$ 147,126,934				$ 151,356,678				$ 137,234,101	
	30 Year Net Present Value	$ -	$ -	$ -			$ 138,874,360				$ 142,754,488				$ 129,353,809	
	Lowest Cost Option (30 Years)						**2**				**3**				**1**	

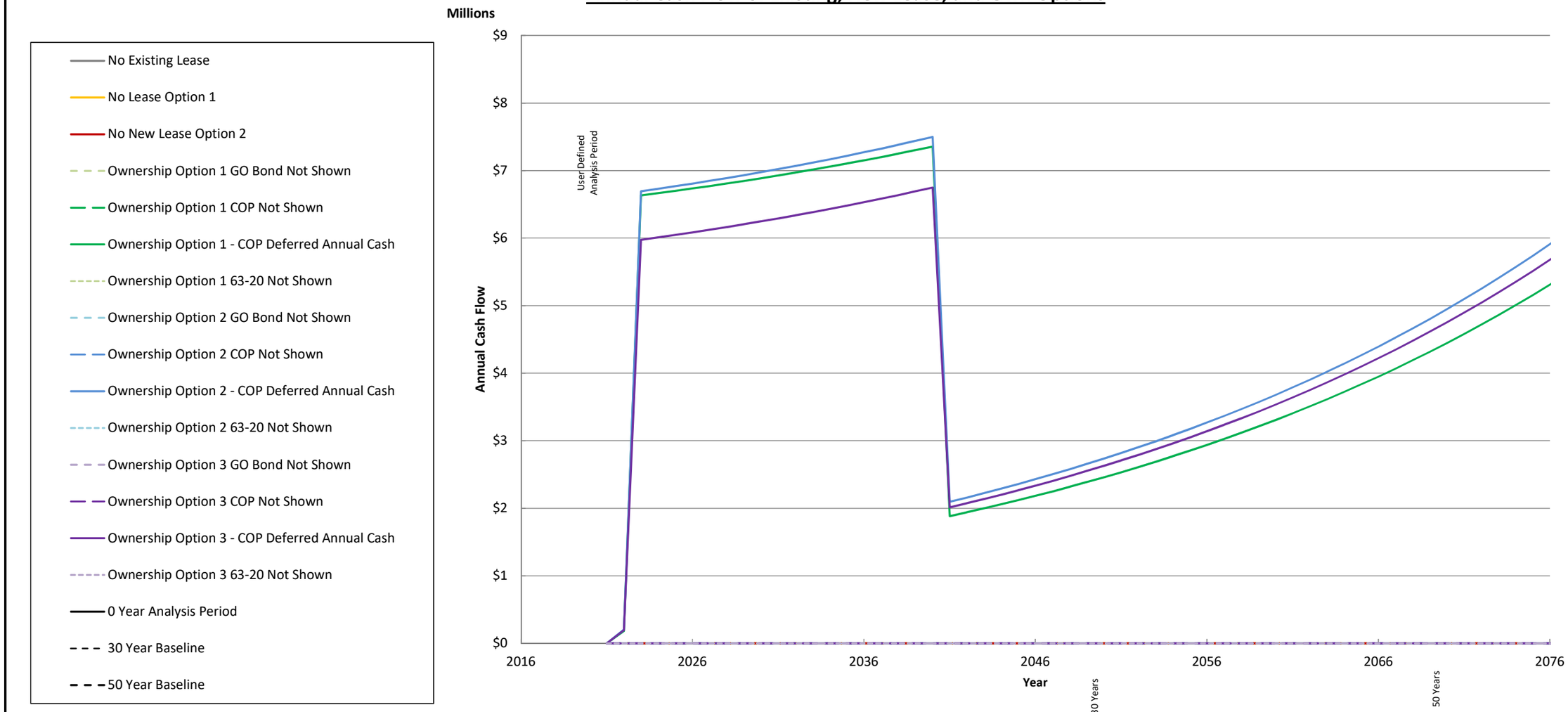
	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
50	50 Year Cumulative Cash	$ -	$ -	$ -			$ 215,217,899				$ 227,111,388				$ 210,020,785	
	50 Year Net Present Value	$ -	$ -	$ -			$ 195,742,707				$ 206,023,458				$ 190,143,936	
	Lowest Cost Option (50 Years)						**2**				**3**				**1**	

** - Defers payment on principle for 2 years while the building is being constructed. See instructions on Capitalized Interest.*

Cumulative Cash - NPV of Exist, Lease, and Own Options



Annual Cash Flow of Existing, New Lease, and Own Options



Financial Assumptions

Date of Life Cycle Cost Analysis:	
Analysis Period Start Date	3/15/2020
User Input Years of Analysis	0

All assumptions subject to change to reflect updated costs and conditions.

	Lease Options			Ownership Option 1			Ownership Option 2			Ownership Option 3		
	Existing Lease	**Lease Option 1**	**Lease Option 2**	**GO Bond**	**COP**	**63-20**	**GO Bond**	**COP**	**63-20**	**GO Bond**	**COP**	**63-20**
Inflation / Interest Rate	3.006%	3.006%	3.006%	3.160%	3.460%	3.660%	3.160%	3.460%	3.660%	3.160%	3.460%	3.660%
Discount Rate	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%
Length of Financing	N/A	N/A	N/A	20	20	20	20	20	20	20	20	20

See Financial Assumptions tab for more detailed information

COP Deferred and 63-20 Financing defer the payment on principle until construction completion.

New Lease Assumptions

Real Estate Transaction fees are 2.5% of the lease for the first 5 years and 1.25% for each year thereafter in the initial term of the lease.

Tenant Improvements are typically estimated at $15 per rentable square foot.

IT infrastructure is typically estimated at $350 per person.

Furniture costs are typically estimated at $500 per person and do not include new workstations.

Moving Vendor and Supplies are typically estimated at $205 per person.

Default Ownership Options Assumptions

Assumes a 2 month lease to move-in overlap period for outfitting building and relocation.

Assumes surface parking.

The floor plate of the construction option office building is 25,000 gross square feet.

The estimated total project cost for construction is $420.00 per square foot.

See the Capital Construction Defaults tab for more construction assumptions.

Ownership Option 3 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Fircrest Nursing Facility A 1-90 Beds Leed Silver
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Shoreline — Market Area = King-North

	Statistics	
*	Gross Sq Ft	97,900
*	Usable Sq Ft	57,487
	Space Efficiency	59%
	Estimated Acres Needed	4.00
	MACC Cost per Sq Ft	$429.05
	Estimated Total Project Costs per Sq Ft	$610.89
	Escalated MACC Cost per Sq Ft	$483.01
	Escalated Total Project Costs per Sq Ft	$687.72

*	**Move In Date**	3/15/2022

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total		$ 1,000,000	$ 1,000,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)	9.33%	6.18% Std	9.33%
	Pre-Schematic Design services	$ 192,054		
	Construction Documents	$ 2,839,307		
	Extra Services	$ 1,881,000		
	Other Services	$ 1,495,631		
	Design Services Contingency	$ 320,400		
	Consultant Services Total	$ 6,728,392	$ 2,596,469	$ 6,728,392
MACC	**Construction Contracts**			
	Site Work	$ 7,408,982		
	Related Project Costs			
	Facility Construction	$ 34,595,178		
	MACC SubTotal	$ 42,004,160	$ 29,370,000	$ 42,004,160
	Construction Contingency (5% default)	$ 2,100,208	$ 2,100,208	$ 2,100,208
	Non Taxable Items			$ -
	Sales Tax	$ 4,454,541		$ 4,454,541
	Construction Additional Items Total	$ 6,554,749	$ 6,554,749	$ 6,554,749
	Equipment			
	Equipment	$ 4,160,750		
	Non Taxable Items			
	Sales Tax	$ 420,236		
	Equipment Total	$ 4,580,986		$ 4,580,986
	Art Work Total	$ 228,473	$ 210,021	$ 228,473
	Other Costs			
		$ 600,000		
	Other Costs Total	$ 600,000		$ 600,000
	Project Management Total	$ 1,698,383		$ 1,698,383
	Grand Total Project Cost		**$ -**	**$ 63,395,143**

Construction One Time Project Costs			
One Time Costs	**Estimate**	**Calculated**	
Moving Vendor and Supplies		$ -	*$205 / Person in FY09*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2022	Estimated Cost /GSF/ 2022	Total Cost / Year	Cost / Month
☑	**Energy (Electricity. Natural Gas)**	$ 0.91	$ 1.22	$ 89,089	$ 7,424
☑	**Janitorial Services**	$ -	$ 1.51	$ 148,158	$ 12,346
☑	**Utilities (Water, Sewer, & Garbage)**	$ -	$ 1.61	$ 157,794	$ 13,150
☑	**Grounds**	$ -	$ 0.16	$ 15,659	$ 1,305
☑	**Pest Control**	$ -	$ 0.06	$ 6,023	$ 502
☑	**Security**	$ -	$ 0.12	$ 12,045	$ 1,004
☑	**Maintenance and Repair**	$ -	$ 6.41	$ 627,563	$ 52,297
☑	**Management**	$ -	$ 0.75	$ 73,477	$ 6,123
☑	**Road Clearance**	$ -	$ 0.09	$ 8,432	$ 703
☑	**Telecom**	$ 0.35	$ -	$ 34,265	$ 2,855
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 1.26**	**$ 11.93**	**$ 1,172,505**	**$ 97,709**

Ownership Option 2 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Fircrest Nursing Facility A 2-100 Beds Leed Silver
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Shoreline — Market Area = King-North

	Statistics	
*	Gross Sq Ft	101,300
*	Usable Sq Ft	63,874
	Space Efficiency	63%
	Estimated Acres Needed	4.00
	MACC Cost per Sq Ft	$495.22
	Estimated Total Project Costs per Sq Ft	$703.18
	Escalated MACC Cost per Sq Ft	$557.50
	Escalated Total Project Costs per Sq Ft	$791.62

*	**Move In Date**	3/15/2022

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total		$ 1,000,000	$ 1,000,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)	6.12%	5.97% Std	6.12%
	Pre-Schematic Design services	$ 192,054		
	Construction Documents	$ 2,224,314		
	Extra Services	$ 1,881,000		
	Other Services	$ 1,219,329		
	Design Services Contingency	$ 275,835		
	Consultant Services Total	$ 5,792,532	$ 2,996,662	$ 5,792,532
MACC	**Construction Contracts**			
	Site Work	$ 8,291,606		
	Related Project Costs			
	Facility Construction	$ 41,874,025		
	MACC SubTotal	$ 50,165,631	$ 30,390,000	$ 50,165,631
	Construction Contingency (5% default)	$ 2,508,282	$ 2,508,282	$ 2,508,282
	Non Taxable Items			$ -
	Sales Tax	$ 5,320,065		$ 5,320,065
	Construction Additional Items Total	$ 7,828,347	$ 7,828,347	$ 7,828,347
	Equipment			
	Equipment	$ 4,390,250		
	Non Taxable Items			
	Sales Tax	$ 443,415		
	Equipment Total	$ 4,833,665		$ 4,833,665
	Art Work Total	$ 272,939	$ 250,828	$ 272,939
	Other Costs			
		$ 600,000		
	Other Costs Total	$ 600,000		$ 600,000
	Project Management Total	$ 1,752,209		$ 1,752,209
	Grand Total Project Cost		**$ -**	**$ 72,245,323**

Construction One Time Project Costs			
One Time Costs	**Estimate**	**Calculated**	
Moving Vendor and Supplies		$ -	*$205 / Person in FY09*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2022	Estimated Cost /GSF/ 2022	Total Cost / Year	Cost / Month
☑	**Energy (Electricity. Natural Gas)**	$ 0.98	$ 1.22	$ 99,274	$ 8,273
☑	**Janitorial Services**	$ -	$ 1.51	$ 153,303	$ 12,775
☑	**Utilities (Water, Sewer, & Garbage)**	$ -	$ 1.61	$ 163,274	$ 13,606
☑	**Grounds**	$ -	$ 0.16	$ 16,203	$ 1,350
☑	**Pest Control**	$ -	$ 0.06	$ 6,232	$ 519
☑	**Security**	$ -	$ 0.12	$ 12,464	$ 1,039
☑	**Maintenance and Repair**	$ -	$ 6.41	$ 649,358	$ 54,113
☑	**Management**	$ -	$ 0.75	$ 76,028	$ 6,336
☑	**Road Clearance**	$ -	$ 0.09	$ 8,725	$ 727
☑	**Telecom**	$ 0.35	$ -	$ 35,455	$ 2,955
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 1.33**	**$ 11.93**	**$ 1,220,316**	**$ 101,693**

Ownership Option 1 Information Sheet

*	***Requires a user input***	*Green Cell*	*= Value can be entered by user.*	*Yellow Cell*	*= Calculated value.*

*	**Project Description**	Fircrest Nursing Facility A 3-100 Beds Leed Silver
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Shoreline — Market Area = King-North

	Statistics	
*	Gross Sq Ft	93,200
*	Usable Sq Ft	63,874
	Space Efficiency	69%
	Estimated Acres Needed	4.00
	MACC Cost per Sq Ft	$503.49
	Estimated Total Project Costs per Sq Ft	$704.89
	Escalated MACC Cost per Sq Ft	$566.81
	Escalated Total Project Costs per Sq Ft	$793.54

*	**Move In Date**	3/15/2022

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total		$ 1,000,000	$ 1,000,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)	6.21%	6.05% Std	6.21%
	Pre-Schematic Design services	$ 192,054		
	Construction Documents	$ 2,107,836		
	Extra Services	$ 1,881,000		
	Other Services	$ 1,166,999		
	Design Services Contingency	$ 267,394		
	Consultant Services Total	$ 5,615,283	$ 2,803,097	$ 5,615,283
MACC	**Construction Contracts**			
	Site Work	$ 8,456,400		
	Related Project Costs			
	Facility Construction	$ 38,468,861		
	MACC SubTotal	$ 46,925,261	$ 27,960,000	$ 46,925,261
	Construction Contingency (5% default)	$ 2,346,236	$ 2,346,263	$ 2,346,236
	Non Taxable Items			$ -
	Sales Tax	$ 4,976,424		$ 4,976,424
	Construction Additional Items Total	$ 7,322,660	$ 2,346,263	$ 7,322,660
	Equipment			
	Equipment	$ 3,961,000		
	Non Taxable Items			
	Sales Tax	$ 400,061		
	Equipment Total	$ 4,361,061		$ 4,361,061
	Art Work Total	$ 255,217	$ 234,626	$ 255,217
	Other Costs			
		$ 600,000		
	Other Costs Total	$ 600,000		$ 600,000
	Project Management Total	$ 1,720,710		$ 1,720,710
	Grand Total Project Cost	**$ 66,800,192**	**$ 34,343,987**	**$ 67,800,192**

Construction One Time Project Costs			
One Time Costs	Estimate	Calculated	
Moving Vendor and Supplies		$ -	*$205 / Person in FY09*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2022	Estimated Cost /GSF/ 2022	Total Cost / Year	Cost / Month
☑	Energy (Electricity. Natural Gas)	$ 0.85	$ 1.22	$ 79,220	$ 6,602
☑	Janitorial Services	$ -	$ 1.51	$ 141,045	$ 11,754
☑	Utilities (Water, Sewer, & Garbage)	$ -	$ 1.61	$ 150,219	$ 12,518
☑	Grounds	$ -	$ 0.16	$ 14,907	$ 1,242
☐	Pest Control	$ -	$0.00	$ -	$ -
☑	Security	$ -	$ 0.12	$ 11,467	$ 956
☑	Maintenance and Repair	$ -	$ 6.41	$ 597,435	$ 49,786
☑	Management	$ -	$ 0.75	$ 69,949	$ 5,829
☐	Road Clearance	$ -	$0.00	$ -	$ -
☑	Telecom	$ 0.35	$ -	$ 32,620	$ 2,718
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 1.20**	**$ 11.79**	**$ 1,096,862**	**$ 91,405**

APPENDIX B - LIFE CYCLE ALT 2 & 3 - 160 BED

Life Cycle Cost Analysis - Project Summary

Agency	
Project Title	

Existing Description	

Lease Option 1 Description	

Lease Option 2 Description	

Ownership Option 1 Description	A-3 160 Bed LEED Silver

Ownership Option 2 Description	A 2 160 Bed LEED Silver

Ownership Option 3 Description	

Lease Options Information	**Existing Lease**	**Lease Option 1**	**Lease Option 2**
Total Rentable Square Feet	-	-	-
Annual Lease Cost (Initial Term of Lease)	$ -	$ -	$ -
Full Service Cost/SF (Initial Term of Lease)	$ -	$ -	$ -
Occupancy Date	n/a		
Project Initial Costs	n/a	$ -	$ -
Persons Relocating	-	-	-
RSF/Person Calculated			

Ownership Information	**Ownership 1**	**Ownership 2**	**Ownership 3**
Total Gross Square Feet	140,006	149,300	-
Total Rentable Square Feet	93,057	93,057	-
Occupancy Date	3/15/2022	3/15/2022	
Initial Project Costs	$ -	$ -	$ -
Est Construction TPC ($/GSF)	$ 761	$ 768	$ -
RSF/Person Calculated	-	-	-

Financial Analysis of Options

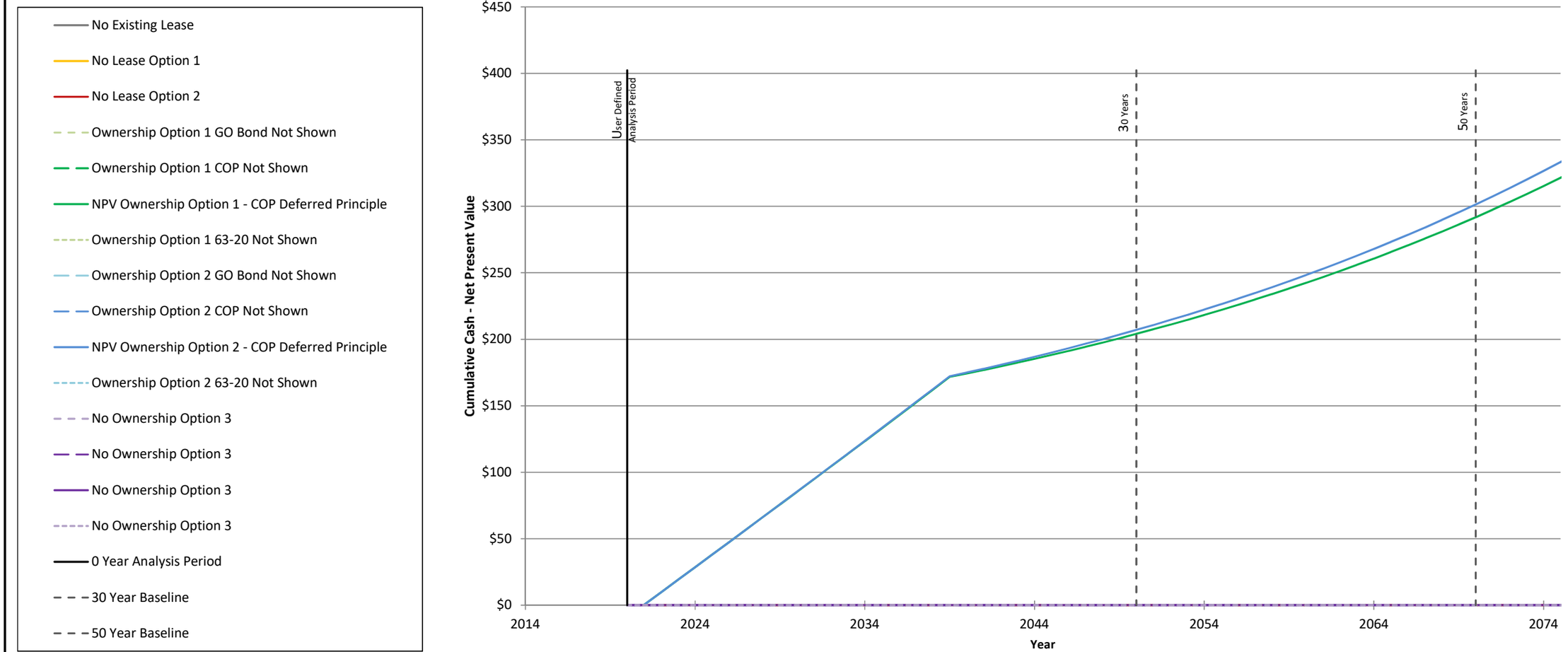
	Display Option?	Yes	Yes	Yes	No	No	Yes	No	No	No	Yes	No	No	No	Yes	No
	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
0	0 Year Cumulative Cash	$ -	$ -	$ -			$ -				$ -				$ -	
	0 Year Net Present Value	$ -	$ -	$ -			$ -				$ -				$ -	
	Lowest Cost Option (Analysis Period)															

	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
30	30 Year Cumulative Cash	$ -	$ -	$ -			$ 212,758,645				$ 215,791,888				$ -	
	30 Year Net Present Value	$ -	$ -	$ -			$ 200,746,018				$ 203,484,579				$ -	
	Lowest Cost Option (30 Years)						**1**				**2**					

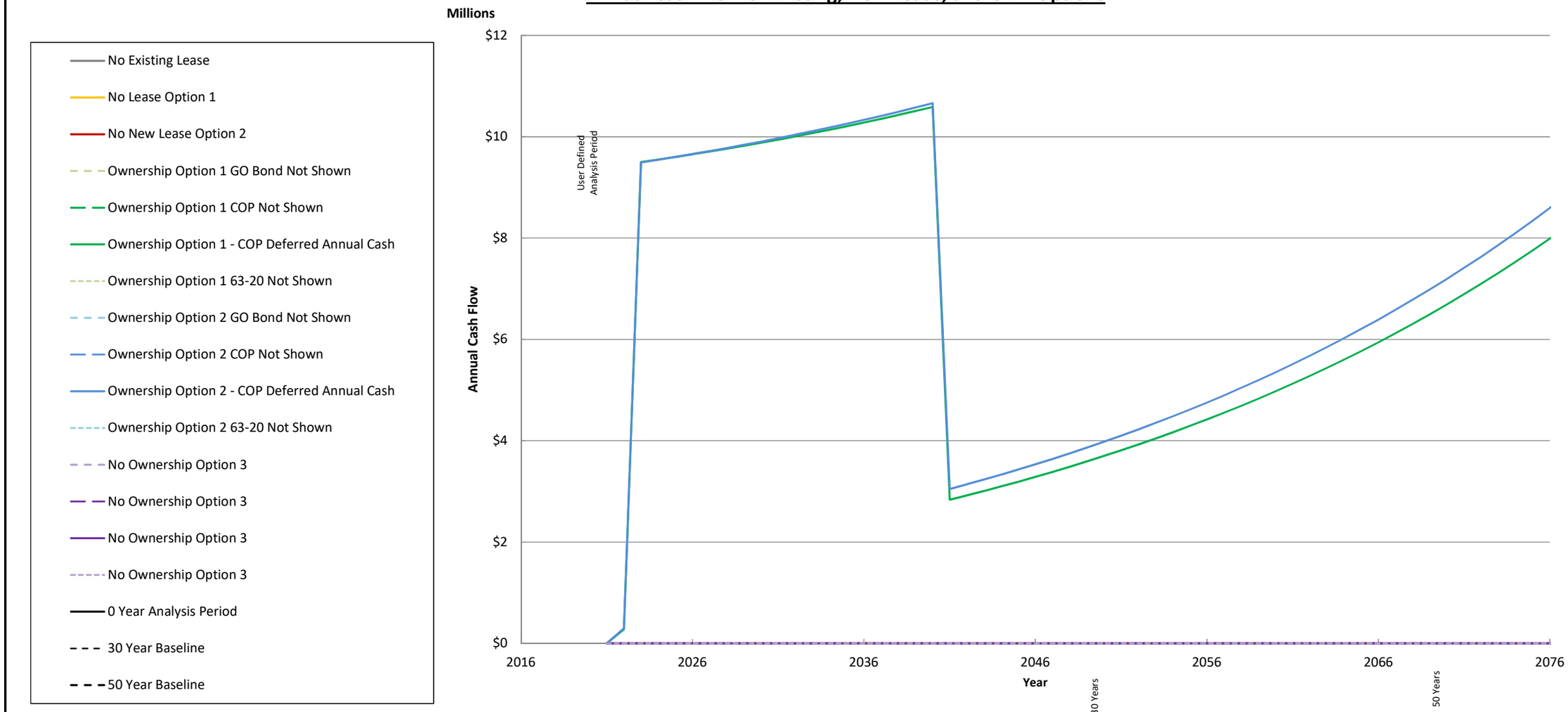
	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
50	50 Year Cumulative Cash	$ -	$ -	$ -			$ 315,219,419				$ 325,981,126				$ -	
	50 Year Net Present Value	$ -	$ -	$ -			$ 286,319,411				$ 295,512,646				$ -	
	Lowest Cost Option (50 Years)						**1**				**2**					

** - Defers payment on principle for 2 years while the building is being constructed. See instructions on Capitalized Interest.*

Cumulative Cash - NPV of Exist, Lease, and Own Options



Annual Cash Flow of Existing, New Lease, and Own Options



Financial Assumptions

Date of Life Cycle Cost Analysis:	
Analysis Period Start Date	3/15/2020
User Input Years of Analysis	0

All assumptions subject to change to reflect updated costs and conditions.

	Lease Options			Ownership Option 1			Ownership Option 2			Ownership Option 3		
	Existing Lease	**Lease Option 1**	**Lease Option 2**	**GO Bond**	**COP**	**63-20**	**GO Bond**	**COP**	**63-20**	**GO Bond**	**COP**	**63-20**
Inflation / Interest Rate	3.006%	3.006%	3.006%	3.160%	3.460%	3.660%	3.160%	3.460%	3.660%	3.160%	3.510%	3.710%
Discount Rate	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%
Length of Financing	N/A	N/A	N/A	20	20	20	20	20	20	20	20	20

See Financial Assumptions tab for more detailed information

COP Deferred and 63-20 Financing defer the payment on principle until construction completion.

New Lease Assumptions

Real Estate Transaction fees are 2.5% of the lease for the first 5 years and 1.25% for each year thereafter in the initial term of the lease.

Tenant Improvements are typically estimated at $15 per rentable square foot.

IT infrastructure is typically estimated at $350 per person.

Furniture costs are typically estimated at $500 per person and do not include new workstations.

Moving Vendor and Supplies are typically estimated at $205 per person.

Default Ownership Options Assumptions

Assumes a 2 month lease to move-in overlap period for outfitting building and relocation.

Assumes surface parking.

The floor plate of the construction option office building is 25,000 gross square feet.

The estimated total project cost for construction is $420.00 per square foot.

See the Capital Construction Defaults tab for more construction assumptions.

Ownership Option 2 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	A 2 160 Bed LEED Silver
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Shoreline — Market Area = King-North

	Statistics	
*	Gross Sq Ft	149,300
*	Usable Sq Ft	93,057
	Space Efficiency	62%
	Estimated Acres Needed	6.00
	MACC Cost per Sq Ft	$480.12
	Estimated Total Project Costs per Sq Ft	$682.22
	Escalated MACC Cost per Sq Ft	$540.51
	Escalated Total Project Costs per Sq Ft	$768.02

*	**Move In Date**	3/15/2022

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total		$ 1,500,000	$ 1,500,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)		5.56% Std	5.56%
	Pre-Schematic Design services	$ 192,054		
	Construction Documents	$ 2,965,411		
	Extra Services	$ 2,028,000		
	Other Services	$ 1,552,286		
	Design Services Contingency	$ 336,888		
	Consultant Services Total	$ 7,074,639	$ 3,984,150	$ 7,074,639
MACC	**Construction Contracts**			
	Site Work	$ 9,870,607		
	Related Project Costs			
	Facility Construction	$ 61,811,434		
	MACC SubTotal	$ 71,682,041	$ 44,790,000	$ 71,682,041
	Construction Contingency (5% default)	$ 3,584,102	$ 3,584,102	$ 3,584,102
	Non Taxable Items			$ -
	Sales Tax	$ 7,601,880		$ 7,601,880
	Construction Additional Items Total	$ 11,185,982	$ 11,185,982	$ 11,185,982
	Equipment			
	Equipment	$ 6,345,250		
	Non Taxable Items			
	Sales Tax	$ 640,870		
	Equipment Total	$ 6,986,120		$ 6,986,120
	Art Work Total	$ 390,265	$ 358,410	$ 390,265
	Other Costs			
	Additional DSHS Management	$ 800,000		
	Other Costs Total	$ 800,000		$ 800,000
	Project Management Total	$ 2,171,707		$ 2,171,707
	Grand Total Project Cost		**$ -**	**$ 101,790,754**

Construction One Time Project Costs			
One Time Costs	Estimate	Calculated	
Moving Vendor and Supplies		$ -	*$205 / Person in FY09*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2022	Estimated Cost /GSF/ 2022	Total Cost / Year	Cost / Month
☑	**Energy (Electricity. Natural Gas)**	$ 0.97	$ 1.22	$ 144,821	$ 12,068
☑	**Janitorial Services**	$ -	$ 1.51	$ 225,945	$ 18,829
☑	**Utilities (Water, Sewer, & Garbage)**	$ -	$ 1.61	$ 240,640	$ 20,053
☑	**Grounds**	$ -	$ 0.16	$ 23,880	$ 1,990
☐	**Pest Control**	$ -	$0.00	$ -	$ -
☑	**Security**	$ -	$ 0.12	$ 18,369	$ 1,531
☑	**Maintenance and Repair**	$ -	$ 6.41	$ 957,050	$ 79,754
☑	**Management**	$ -	$ 0.75	$ 112,054	$ 9,338
☐	**Road Clearance**	$ -	$0.00	$ -	$ -
☑	**Telecom**	$ 0.35	$ -	$ 52,255	$ 4,355
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 1.32**	**$ 11.79**	**$ 1,775,014**	**$ 147,918**

Ownership Option 1 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	A-3 160 Bed LEED Silver
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Shoreline — Market Area = King-North

	Statistics	
*	Gross Sq Ft	140,006
*	Usable Sq Ft	93,057
	Space Efficiency	66%
	Estimated Acres Needed	5.00
	MACC Cost per Sq Ft	$482.93
	Estimated Total Project Costs per Sq Ft	$676.10
	Escalated MACC Cost per Sq Ft	$543.67
	Escalated Total Project Costs per Sq Ft	$761.13

*	**Move In Date**	3/15/2022

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total		$ 1,250,000	$ 1,250,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)		5.63% Std	5.63%
	Pre-Schematic Design services	$ 192,054		
	Construction Documents	$ 2,826,465		
	Extra Services	$ 2,028,000		
	Other Services	$ 1,489,861		
	Design Services Contingency	$ 326,819		
	Consultant Services Total	$ 6,863,199	$ 3,757,982	$ 6,863,199
MACC	**Construction Contracts**			
	Site Work	$ 10,327,807		
	Related Project Costs			
	Facility Construction	$ 57,285,058		
	MACC SubTotal	$ 67,612,865	$ 42,001,800	$ 67,612,865
	Construction Contingency (5% default)	$ 3,380,643	$ 3,380,643	$ 3,380,643
	Non Taxable Items			$ -
	Sales Tax	$ 7,170,344		$ 7,170,344
	Construction Additional Items Total	$ 10,550,987	$ 3,380,643	$ 10,550,987
	Equipment			
	Equipment	$ 5,950,255		
	Non Taxable Items			
	Sales Tax	$ 600,976		
	Equipment Total	$ 6,551,231		$ 6,551,231
	Art Work Total	$ 367,977	$ 338,064	$ 367,977
	Other Costs			
	Additional DSHS Management	$ 800,000		
	Other Costs Total	$ 800,000		$ 800,000
	Project Management Total	$ 2,142,224		$ 2,142,224
	Grand Total Project Cost	**$ 94,888,483**	**$ 50,728,489**	**$ 96,138,483**

Construction One Time Project Costs			
One Time Costs	Estimate	Calculated	
Moving Vendor and Supplies		$ -	*$205 / Person in FY09*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2022	Estimated Cost /GSF/ 2022	Total Cost / Year	Cost / Month
☑	Energy (Electricity. Natural Gas)	$ 0.87	$ 1.22	$ 121,805	$ 10,150
☑	Janitorial Services	$ -	$ 1.51	$ 211,879	$ 17,657
☑	Utilities (Water, Sewer, & Garbage)	$ -	$ 1.61	$ 225,660	$ 18,805
☑	Grounds	$ -	$ 0.16	$ 22,394	$ 1,866
☐	Pest Control	$ -	$0.00	$ -	$ -
☑	Security	$ -	$ 0.12	$ 17,226	$ 1,435
☑	Maintenance and Repair	$ -	$ 6.41	$ 897,473	$ 74,789
☑	Management	$ -	$ 0.75	$ 105,078	$ 8,757
☐	Road Clearance	$ -	$0.00	$ -	$ -
☑	Telecom	$ 0.35	$ -	$ 49,002	$ 4,084
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 1.22**	**$ 11.79**	**$ 1,650,518**	**$ 137,543**

APPENDIX B - LIFE CYCLE ALT 1,2 & 3 - 90 or 100 BED NET ZERO

Life Cycle Cost Analysis - Project Summary

Agency	
Project Title	

Existing Description	

Lease Option 1 Description	

Lease Option 2 Description	

Ownership Option 1 Description	Fircrest Nursing Facility A 3-100 Beds Zero Energy Includes Water Tank System, Fire Loop and Frontage work

Ownership Option 2 Description	Fircrest Nursing Facility A 2-100 Beds ZE Includes Water Tank System, Fire Loop and Frontage Work

Ownership Option 3 Description	Fircrest Nursing Facility A 1-90 Beds ZE Includes Water Tank System, Fire Loop and Frontage Work

Lease Options Information	**Existing Lease**	**Lease Option 1**	**Lease Option 2**
Total Rentable Square Feet	-	-	-
Annual Lease Cost (Initial Term of Lease)	$ -	$ -	$ -
Full Service Cost/SF (Initial Term of Lease)	$ -	$ -	$ -
Occupancy Date	n/a		
Project Initial Costs	n/a	$ -	$ -
Persons Relocating	-	-	-
RSF/Person Calculated			

Ownership Information	**Ownership 1**	**Ownership 2**	**Ownership 3**
Total Gross Square Feet	93,200	101,300	97,900
Total Rentable Square Feet	63,874	63,874	57,487
Occupancy Date	1/15/2023	1/15/2023	1/15/2023
Initial Project Costs	$ -	$ -	$ -
Est Construction TPC ($/GSF)	$ 1,028	$ 963	$ 852
RSF/Person Calculated	-	-	-

Financial Analysis of Options

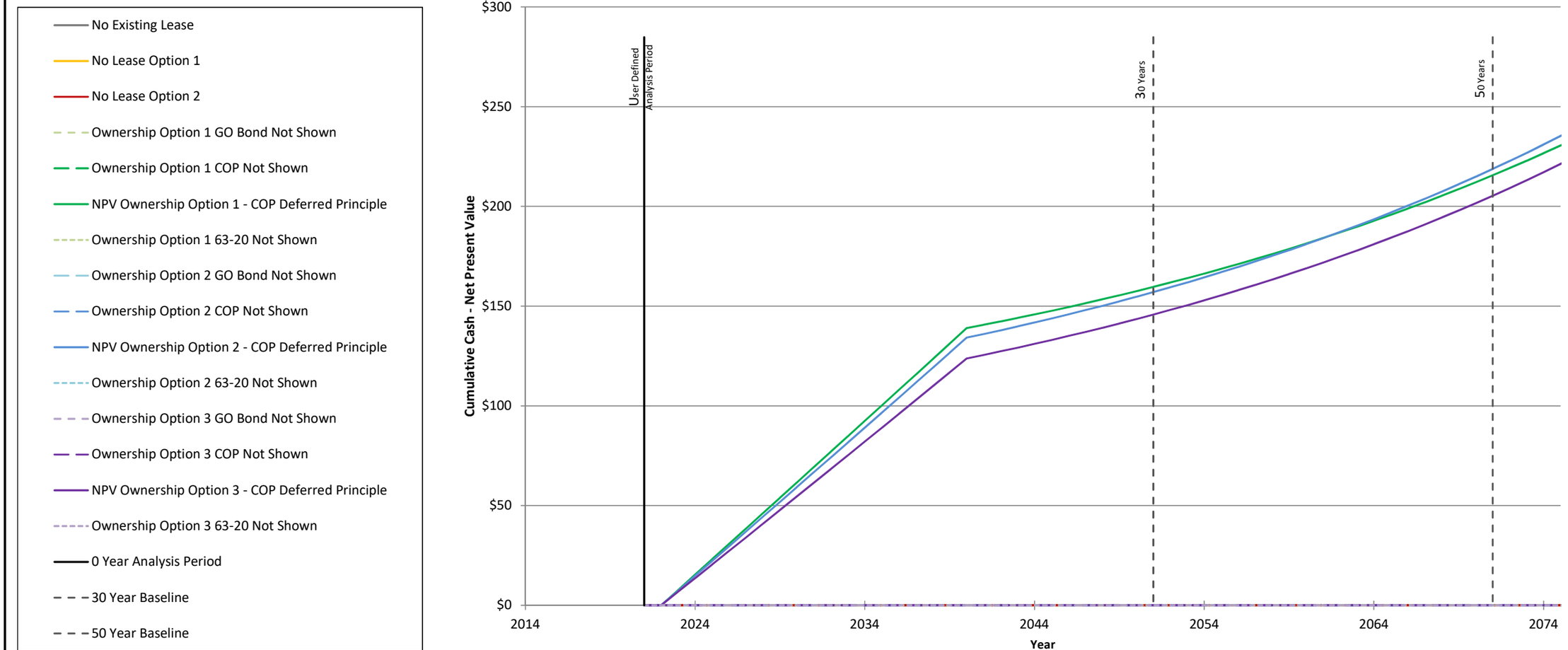
	Display Option?	Yes	Yes	Yes	No	No	Yes	No	No	No	Yes	No	No	No	Yes	No
	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
0	0 Year Cumulative Cash	$ -	$ -	$ -			$ -				$ -				$ -	
	0 Year Net Present Value	$ -	$ -	$ -			$ -				$ -				$ -	
	Lowest Cost Option (Analysis Period)															

	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
30	30 Year Cumulative Cash	$ -	$ -	$ -			$ 166,517,046				$ 163,649,947				$ 151,883,987	
	30 Year Net Present Value	$ -	$ -	$ -			$ 157,332,065				$ 154,472,441				$ 143,316,286	
	Lowest Cost Option (30 Years)						**3**				**2**				**1**	

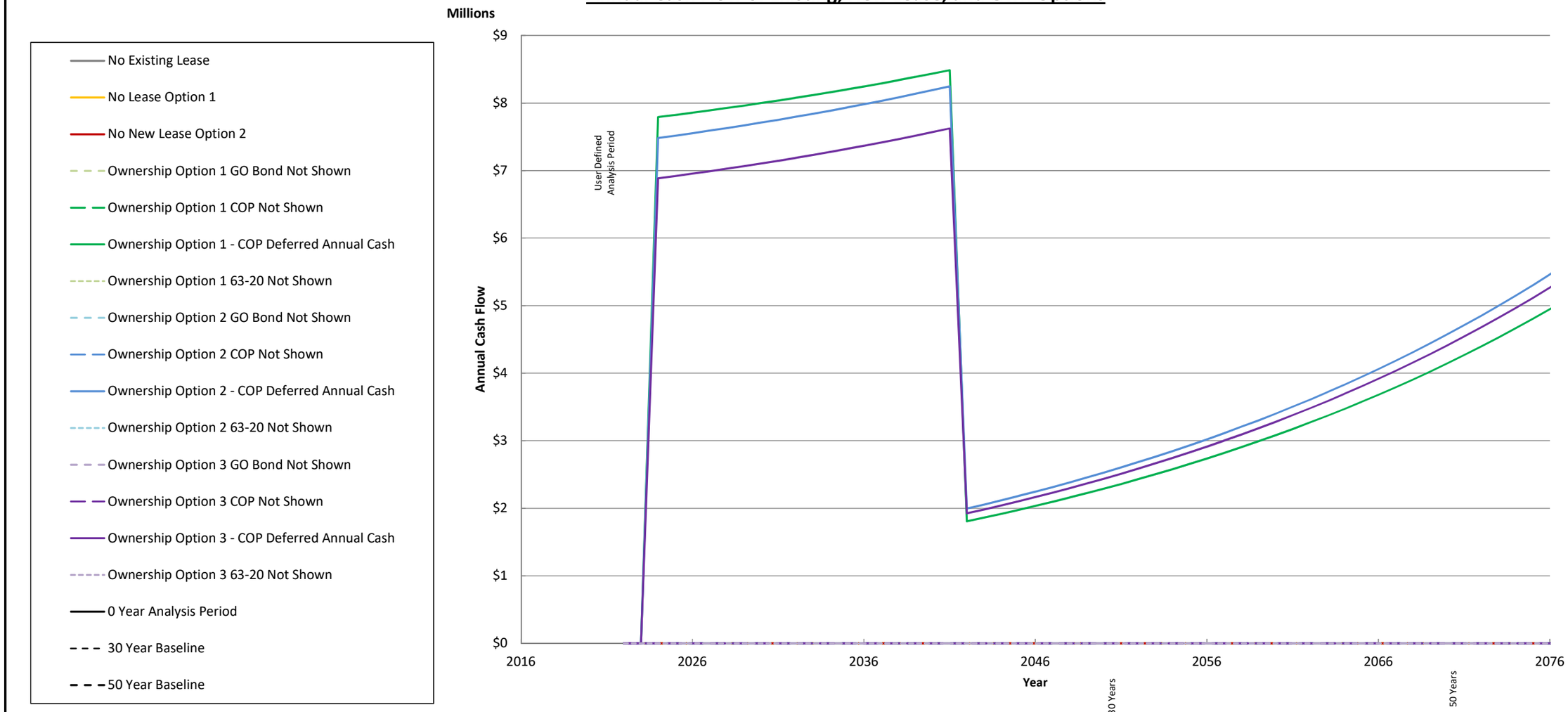
	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
50	50 Year Cumulative Cash	$ -	$ -	$ -			$ 231,696,307				$ 235,588,599				$ 221,267,566	
	50 Year Net Present Value	$ -	$ -	$ -			$ 211,789,234				$ 214,577,070				$ 201,286,156	
	Lowest Cost Option (50 Years)						**2**				**3**				**1**	

** - Defers payment on principle for 2 years while the building is being constructed. See instructions on Capitalized Interest.*

Cumulative Cash - NPV of Exist, Lease, and Own Options



Annual Cash Flow of Existing, New Lease, and Own Options



Financial Assumptions

Date of Life Cycle Cost Analysis:	
Analysis Period Start Date	1/15/2021
User Input Years of Analysis	0

All assumptions subject to change to reflect updated costs and conditions.

	Lease Options			Ownership Option 1			Ownership Option 2			Ownership Option 3		
	Existing Lease	**Lease Option 1**	**Lease Option 2**	**GO Bond**	**COP**	**63-20**	**GO Bond**	**COP**	**63-20**	**GO Bond**	**COP**	**63-20**
Inflation / Interest Rate	3.006%	3.006%	3.006%	3.160%	3.460%	3.660%	3.160%	3.460%	3.660%	3.160%	3.460%	3.660%
Discount Rate	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%
Length of Financing	N/A	N/A	N/A	20	20	20	20	20	20	20	20	20

See Financial Assumptions tab for more detailed information

COP Deferred and 63-20 Financing defer the payment on principle until construction completion.

New Lease Assumptions

Real Estate Transaction fees are 2.5% of the lease for the first 5 years and 1.25% for each year thereafter in the initial term of the lease.

Tenant Improvements are typically estimated at $15 per rentable square foot.

IT infrastructure is typically estimated at $350 per person.

Furniture costs are typically estimated at $500 per person and do not include new workstations.

Moving Vendor and Supplies are typically estimated at $205 per person.

Default Ownership Options Assumptions

Assumes a 2 month lease to move-in overlap period for outfitting building and relocation.

Assumes surface parking.

The floor plate of the construction option office building is 25,000 gross square feet.

The estimated total project cost for construction is $420.00 per square foot.

See the Capital Construction Defaults tab for more construction assumptions.

Ownership Option 1 Information Sheet

*	***Requires a user input***	*Green Cell*	*= Value can be entered by user.*	*Yellow Cell*	*= Calculated value.*

*	**Project Description**	Fircrest Nursing Facility A 3-100 Beds Zero Energy Includes Water Tank System, Fire Loop and Frontage work
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Shoreline — Market Area = King-North

	Statistics	
*	Gross Sq Ft	93,200
*	Usable Sq Ft	63,874
	Space Efficiency	69%
	Estimated Acres Needed	4.00
	MACC Cost per Sq Ft	$633.49
	Estimated Total Project Costs per Sq Ft	$886.88
	Escalated MACC Cost per Sq Ft	$734.60
	Escalated Total Project Costs per Sq Ft	$1,028.44

*	**Move In Date**	1/15/2023

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total		$ 1,000,000	$ 1,000,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)	6.12%	5.78% Std	6.12%
	Pre-Schematic Design services			
	Construction Documents	$ 2,536,565		
	Extra Services	$ 2,031,000		
	Other Services	$ 1,359,616		
	Design Services Contingency	$ 296,359		
	Consultant Services Total	$ 6,223,540	$ 3,410,898	$ 6,223,540
MACC	**Construction Contracts**			
	Site Work	$ 15,921,517		
	Related Project Costs	$ 1,081,739		
	Facility Construction	$ 42,037,629		
	MACC SubTotal	$ 59,040,885	$ 27,960,000	$ 59,040,885
	Construction Contingency (5% default)	$ 2,952,044	$ 2,952,044	$ 2,952,044
	Non Taxable Items			$ -
	Sales Tax	$ 6,261,286		$ 6,261,286
	Construction Additional Items Total	$ 9,213,330	$ 2,952,044	$ 9,213,330
	Equipment			
	Equipment	$ 3,961,000		
	Non Taxable Items			
	Sales Tax	$ 400,061		
	Equipment Total	$ 4,361,061		$ 4,361,061
	Art Work Total	$ 320,275	$ 295,204	$ 320,275
	Other Costs			
	Hazardous Material Removal	$ 100,000		
	Permit/Plan Review/Misc.	$ 500,000		
	Other Costs Total	$ 600,000		$ 600,000
	Project Management Total	$ 1,828,158		$ 1,828,158
	Grand Total Project Cost	**$ 81,587,249**	**$ 35,618,147**	**$ 82,587,249**

Construction One Time Project Costs			
One Time Costs	Estimate	Calculated	
Moving Vendor and Supplies		$ -	*$205 / Person in FY09*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2023	Estimated Cost /GSF/ 2023	Total Cost / Year	Cost / Month
☑	Energy (Electricity. Natural Gas)	$ 0.11	$ 1.25	$ 10,597	$ 883
☑	Janitorial Services	$ -	$ 1.56	$ 145,285	$ 12,107
☑	Utilities (Water, Sewer, & Garbage)	$ -	$ 1.66	$ 154,734	$ 12,895
☑	Grounds	$ -	$ 0.16	$ 15,355	$ 1,280
☐	Pest Control	$ -	$0.00	$ -	$ -
☑	Security	$ -	$ 0.13	$ 11,812	$ 984
☑	Maintenance and Repair	$ -	$ 6.60	$ 615,394	$ 51,283
☑	Management	$ -	$ 0.77	$ 72,052	$ 6,004
☐	Road Clearance	$ -	$0.00	$ -	$ -
☑	Telecom	$ 0.35	$ -	$ 32,620	$ 2,718
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 0.46**	**$ 12.14**	**$ 1,057,849**	**$ 88,154**

Ownership Option 2 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Fircrest Nursing Facility A 2-100 Beds ZE Includes Water Tank System, Fire Loop and Frontage Work
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Shoreline — Market Area = King-North

	Statistics	
*	Gross Sq Ft	101,300
*	Usable Sq Ft	63,874
	Space Efficiency	63%
	Estimated Acres Needed	4.00
	MACC Cost per Sq Ft	$585.95
	Estimated Total Project Costs per Sq Ft	$830.20
	Escalated MACC Cost per Sq Ft	$679.47
	Escalated Total Project Costs per Sq Ft	$962.71

*	**Move In Date**	1/15/2023

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total		$ 1,000,000	$ 1,000,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)	6.12%	5.78% Std	6.12%
	Pre-Schematic Design services			
	Construction Documents	$ 2,550,130		
	Extra Services	$ 2,031,000		
	Other Services	$ 1,365,711		
	Design Services Contingency	$ 297,342		
	Consultant Services Total	$ 6,244,183	$ 3,429,139	$ 6,244,183
MACC	**Construction Contracts**			
	Site Work	$ 12,598,421		
	Related Project Costs	$ 1,081,739		
	Facility Construction	$ 45,676,469		
	MACC SubTotal	$ 59,356,629	$ 30,390,000	$ 59,356,629
	Construction Contingency (5% default)	$ 2,967,831	$ 2,967,831	$ 2,967,831
	Non Taxable Items			$ -
	Sales Tax	$ 6,294,770		$ 6,294,770
	Construction Additional Items Total	$ 9,262,601	$ 9,262,601	$ 9,262,601
	Equipment			
	Equipment	$ 4,390,250		
	Non Taxable Items			
	Sales Tax	$ 443,415		
	Equipment Total	$ 4,833,665		$ 4,833,665
	Art Work Total	$ 322,437	$ 296,783	$ 322,437
	Other Costs			
	Hazardous Material Removal	$ 100,000		
	Permit/Plan Review/Misc.	$ 500,000		
	Other Costs Total	$ 600,000		$ 600,000
	Project Management Total	$ 1,834,955		$ 1,834,955
	Grand Total Project Cost		**$ -**	**$ 83,454,470**

Construction One Time Project Costs			
One Time Costs	**Estimate**	**Calculated**	
Moving Vendor and Supplies		$ -	*$205 / Person in FY09*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2023	Estimated Cost /GSF/ 2023	Total Cost / Year	Cost / Month
☑	**Energy (Electricity. Natural Gas)**	$ 0.14	$ 1.25	$ 13,878	$ 1,157
☑	**Janitorial Services**	$ -	$ 1.56	$ 157,912	$ 13,159
☑	**Utilities (Water, Sewer, & Garbage)**	$ -	$ 1.66	$ 168,182	$ 14,015
☑	**Grounds**	$ -	$ 0.16	$ 16,690	$ 1,391
☑	**Pest Control**	$ -	$ 0.06	$ 6,419	$ 535
☑	**Security**	$ -	$ 0.13	$ 12,838	$ 1,070
☑	**Maintenance and Repair**	$ -	$ 6.60	$ 668,878	$ 55,740
☑	**Management**	$ -	$ 0.77	$ 78,314	$ 6,526
☑	**Road Clearance**	$ -	$ 0.09	$ 8,987	$ 749
☑	**Telecom**	$ 0.35	$ -	$ 35,455	$ 2,955
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 0.49**	**$ 12.29**	**$ 1,167,553**	**$ 97,296**

Ownership Option 3 Information Sheet

*	***Requires a user input***	*Green Cell*	*= Value can be entered by user.*	*Yellow Cell*	*= Calculated value.*

*	**Project Description**	Fircrest Nursing Facility A 1-90 Beds ZE Includes Water Tank System, Fire Loop and Frontage Work
*	**Construction or Purchase/Remodel**	Purchase/Remodel
*	**Project Location**	Shoreline — Market Area = King-North

	Statistics	
*	Gross Sq Ft	97,900
*	Usable Sq Ft	57,487
	Space Efficiency	59%
	Estimated Acres Needed	4.00
	MACC Cost per Sq Ft	$517.29
	Estimated Total Project Costs per Sq Ft	$734.42
	Escalated MACC Cost per Sq Ft	$599.86
	Escalated Total Project Costs per Sq Ft	$851.64

*	**Move In Date**	1/15/2023

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total		$ 1,000,000	$ 1,000,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)	9.33%	7.96% Std	9.33%
	Pre-Schematic Design services			
	Construction Documents	$ 3,426,707		
	Extra Services	$ 1,881,000		
	Other Services	$ 1,759,535		
	Design Services Contingency	$ 565,379		
	Consultant Services Total	$ 7,632,621	$ 4,032,421	$ 7,632,621
MACC	**Construction Contracts**			
	Site Work	$ 11,618,390		
	Related Project Costs	$ 1,081,739		
	Facility Construction	$ 37,942,737		
	MACC SubTotal	$ 50,642,866	$ 29,370,000	$ 50,642,866
	Construction Contingency (5% default)	$ 4,051,429	$ 4,051,429	$ 4,051,429
	Non Taxable Items			$ -
	Sales Tax	$ 5,524,124		$ 5,524,124
	Construction Additional Items Total	$ 9,575,553	$ 9,575,553	$ 9,575,553
	Equipment			
	Equipment	$ 4,160,750		
	Non Taxable Items			
	Sales Tax	$ 420,236		
	Equipment Total	$ 4,580,986		$ 4,580,986
	Art Work Total	$ 274,967	$ 253,214	$ 274,967
	Other Costs			
	Hazardous Material Removal	$ 100,000		
	Permit/Plan Review/Misc.	$ 500,000		
	Other Costs Total	$ 600,000		$ 600,000
	Project Management Total	$ 1,808,880		$ 1,808,880
	Grand Total Project Cost		**$ -**	**$ 76,115,873**

Construction One Time Project Costs			
One Time Costs	Estimate	Calculated	
Moving Vendor and Supplies		$ -	*$205 / Person in FY09*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2023	Estimated Cost /GSF/ 2023	Total Cost / Year	Cost / Month
☑	**Energy (Electricity. Natural Gas)**	$ 0.11	$ 1.25	$ 11,131	$ 928
☑	**Janitorial Services**	$ -	$ 1.56	$ 152,611	$ 12,718
☑	**Utilities (Water, Sewer, & Garbage)**	$ -	$ 1.66	$ 162,537	$ 13,545
☑	**Grounds**	$ -	$ 0.16	$ 16,130	$ 1,344
☑	**Pest Control**	$ -	$ 0.06	$ 6,204	$ 517
☑	**Security**	$ -	$ 0.13	$ 12,407	$ 1,034
☑	**Maintenance and Repair**	$ -	$ 6.60	$ 646,428	$ 53,869
☑	**Management**	$ -	$ 0.77	$ 75,685	$ 6,307
☑	**Road Clearance**	$ -	$ 0.09	$ 8,685	$ 724
☑	**Telecom**	$ 0.35	$ -	$ 34,265	$ 2,855
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 0.46**	**$ 12.29**	**$ 1,126,084**	**$ 93,840**

APPENDIX B - LIFE CYCLE ALT 3- 120 BEDS PLUS 2 & 3 - 160 BED NET ZERO

Life Cycle Cost Analysis - Project Summary

Agency	
Project Title	

Existing Description	

Lease Option 1 Description	

Lease Option 2 Description	

Ownership Option 1 Description	Fircrest A 3 160 Bed Zero Energy Includes Water Tank System, Fire Loop and Frontage Work

Ownership Option 2 Description	Fircrest A2 160 Bed Zero Energy Includes Water Tank System, Fire Loop and Frontage Work

Ownership Option 3 Description	Fircrest 120 Bed A3 Zero Energy Includes Water Tank System, Fire Loop and Frontage Work

Lease Options Information	**Existing Lease**	**Lease Option 1**	**Lease Option 2**
Total Rentable Square Feet	-	-	-
Annual Lease Cost (Initial Term of Lease)	$ -	$ -	$ -
Full Service Cost/SF (Initial Term of Lease)	$ -	1/15/2023	$ -
Occupancy Date	n/a		
Project Initial Costs	n/a	$ -	$ -
Persons Relocating	-	-	-
RSF/Person Calculated			

Ownership Information	**Ownership 1**	**Ownership 2**	**Ownership 3**
Total Gross Square Feet	140,006	149,300	118,220
Total Rentable Square Feet	93,057	93,057	73,420
Occupancy Date	1/15/2023	1/15/2023	1/15/2023
Initial Project Costs	$ -	$ -	$ -
Est Construction TPC ($/GSF)	$ 938	$ 917	$ 939
RSF/Person Calculated	-	-	-

Financial Analysis of Options

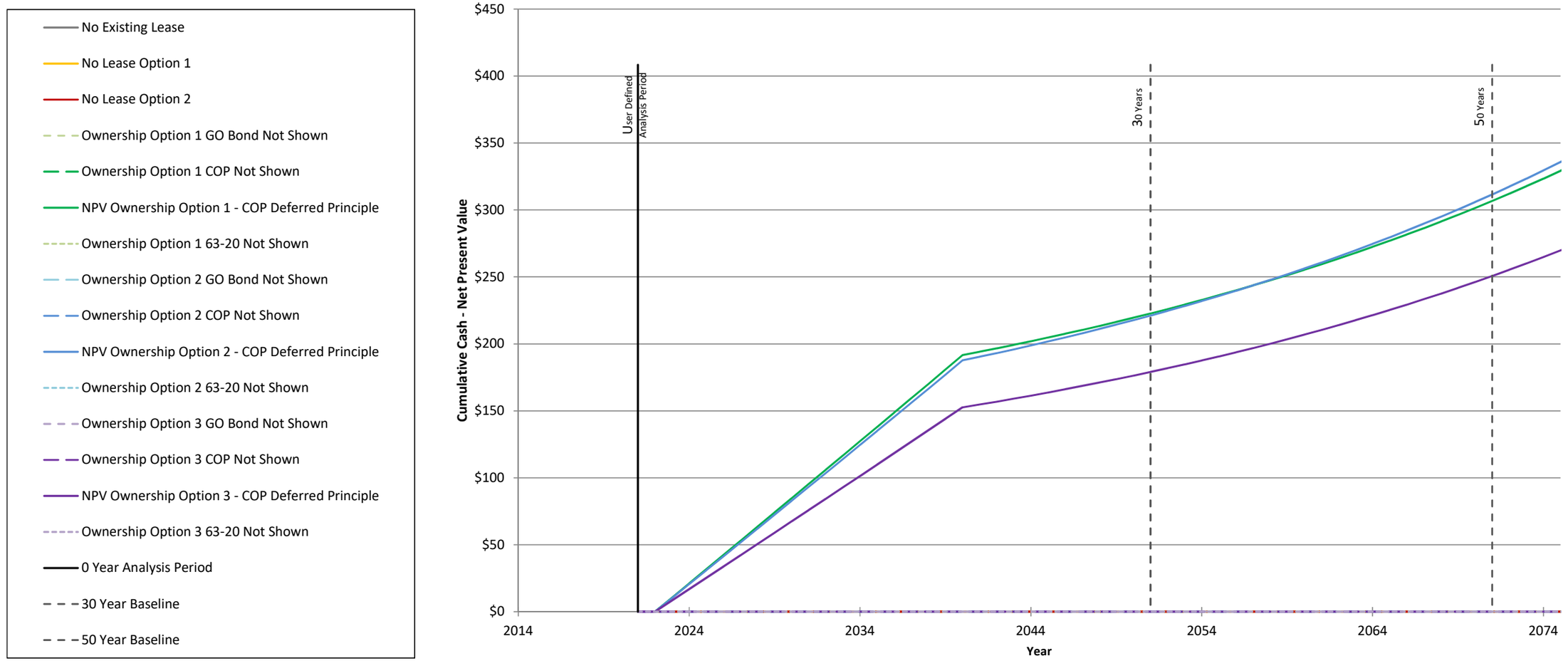
	Display Option?	Yes	Yes	Yes	No	No	Yes	No	No	No	Yes	No	No	No	Yes	No
	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
0	0 Year Cumulative Cash	$ -	$ -	$ -			$ -				$ -				$ -	
	0 Year Net Present Value	$ -	$ -	$ -			$ -				$ -				$ -	
	Lowest Cost Option (Analysis Period)															

	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
30	30 Year Cumulative Cash	$ -	$ -	$ -			$ 232,175,351				$ 230,411,937				$ 186,587,176	
	30 Year Net Present Value	$ -	$ -	$ -			$ 219,233,533				$ 217,411,441				$ 176,096,196	
	Lowest Cost Option (30 Years)						**3**				**2**				**1**	

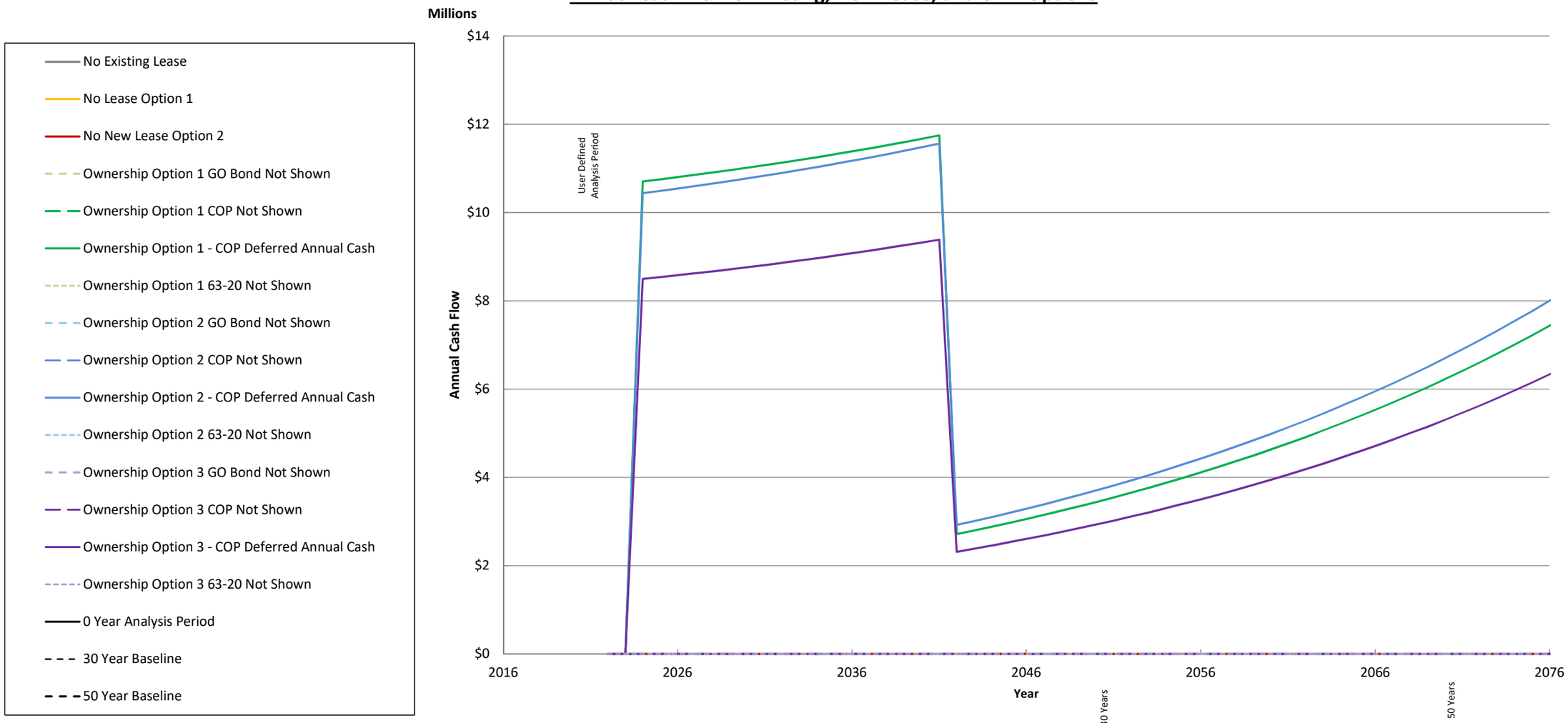
	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
50	50 Year Cumulative Cash	$ -	$ -	$ -			$ 330,125,402				$ 335,829,320				$ 270,029,074	
	50 Year Net Present Value	$ -	$ -	$ -			$ 301,070,646				$ 305,487,497				$ 245,811,769	
	Lowest Cost Option (50 Years)						**2**				**3**				**1**	

** - Defers payment on principle for 2 years while the building is being constructed. See instructions on Capitalized Interest.*

Cumulative Cash - NPV of Exist, Lease, and Own Options



Annual Cash Flow of Existing, New Lease, and Own Options



Financial Assumptions

Date of Life Cycle Cost Analysis:	
Analysis Period Start Date	1/15/2021
User Input Years of Analysis	0

All assumptions subject to change to reflect updated costs and conditions.

	Lease Options			Ownership Option 1			Ownership Option 2			Ownership Option 3		
	Existing Lease	**Lease Option 1**	**Lease Option 2**	**GO Bond**	**COP**	**63-20**	**GO Bond**	**COP**	**63-20**	**GO Bond**	**COP**	**63-20**
Inflation / Interest Rate	3.006%	3.006%	3.006%	3.160%	3.460%	3.660%	3.160%	3.460%	3.660%	3.160%	3.460%	3.660%
Discount Rate	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%
Length of Financing	N/A	N/A	N/A	20	20	20	20	20	20	20	20	20

See Financial Assumptions tab for more detailed information

COP Deferred and 63-20 Financing defer the payment on principle until construction completion.

New Lease Assumptions

Real Estate Transaction fees are 2.5% of the lease for the first 5 years and 1.25% for each year thereafter in the initial term of the lease.

Tenant Improvements are typically estimated at $15 per rentable square foot.

IT infrastructure is typically estimated at $350 per person.

Furniture costs are typically estimated at $500 per person and do not include new workstations.

Moving Vendor and Supplies are typically estimated at $205 per person.

Default Ownership Options Assumptions

Assumes a 2 month lease to move-in overlap period for outfitting building and relocation.

Assumes surface parking.

The floor plate of the construction option office building is 25,000 gross square feet.

The estimated total project cost for construction is $420.00 per square foot.

See the Capital Construction Defaults tab for more construction assumptions.

Ownership Option 1 Information Sheet

* ***Requires a user input*** | *Green Cell* = *Value can be entered by user.* | *Yellow Cell* = *Calculated value.*

*	**Project Description**	Fircrest A 3 160 Bed Zero Energy Includes Water Tank System, Fire Loop and Frontage Work
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Shoreline — Market Area = King-North

	Statistics	
*	Gross Sq Ft	140,006
*	Usable Sq Ft	93,057
	Space Efficiency	66%
	Estimated Acres Needed	5.00
	MACC Cost per Sq Ft	$577.51
	Estimated Total Project Costs per Sq Ft	$808.51
	Escalated MACC Cost per Sq Ft	$669.68
	Escalated Total Project Costs per Sq Ft	$937.56

*	**Move In Date**	1/15/2023

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total		$ 1,250,000	$ 1,250,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)		5.42% Std	5.42%
	Pre-Schematic Design services			
	Construction Documents	$ 3,262,851		
	Extra Services	$ 2,178,000		
	Other Services	$ 1,685,919		
	Design Services Contingency	$ 356,338		
	Consultant Services Total	$ 7,483,108	$ 4,354,183	$ 7,483,108
MACC	**Construction Contracts**			
	Site Work	$ 16,962,660		
	Related Project Costs	$ 1,081,739		
	Facility Construction	$ 62,810,004		
	MACC SubTotal	$ 80,854,403	$ 42,001,800	$ 80,854,403
	Construction Contingency (5% default)	$ 4,042,720	$ 4,042,720	$ 4,042,720
	Non Taxable Items			$ -
	Sales Tax	$ 8,574,609		$ 8,574,609
	Construction Additional Items Total	$ 12,617,329	$ 4,042,720	$ 12,617,329
	Equipment			
	Equipment	$ 5,950,255		
	Non Taxable Items			
	Sales Tax	$ 600,976		
	Equipment Total	$ 6,551,231		$ 6,551,231
	Art Work Total	$ 439,294	$ 404,272	$ 439,294
	Other Costs			
	Hazardous Material Removal	$ 100,000		
	Permit/Plan Review/Misc.	$ 700,000		
	Other Costs Total	$ 800,000		$ 800,000
	Project Management Total	$ 2,212,930		$ 2,212,930
	Grand Total Project Cost	**$ 110,958,295**	**$ 52,052,976**	**$ 112,208,295**

Construction One Time Project Costs			
One Time Costs	Estimate	Calculated	
Moving Vendor and Supplies		$ -	*$205 / Person in FY09*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2023	Estimated Cost /GSF/ 2023	Total Cost / Year	Cost / Month
☑	Energy (Electricity. Natural Gas)	$ 0.12	$ 1.25	$ 16,521	$ 1,377
☑	Janitorial Services	$ -	$ 1.56	$ 218,248	$ 18,187
☑	Utilities (Water, Sewer, & Garbage)	$ -	$ 1.66	$ 232,443	$ 19,370
☑	Grounds	$ -	$ 0.16	$ 23,067	$ 1,922
☐	Pest Control	$ -	$0.00	$ -	$ -
☑	Security	$ -	$ 0.13	$ 17,744	$ 1,479
☑	Maintenance and Repair	$ -	$ 6.60	$ 924,451	$ 77,038
☑	Management	$ -	$ 0.77	$ 108,237	$ 9,020
☐	Road Clearance	$ -	$0.00	$ -	$ -
☑	Telecom	$ 0.35	$ -	$ 49,002	$ 4,084
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 0.47**	**$ 12.14**	**$ 1,589,713**	**$ 132,476**

Ownership Option 2 Information Sheet

*	***Requires a user input***	*Green Cell*	*= Value can be entered by user.*	*Yellow Cell*	*= Calculated value.*

*	**Project Description**	Fircrest A2 160 Bed Zero Energy Includes Water Tank System, Fire Loop and Frontage Work
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Shoreline — Market Area = King-North

	Statistics	
*	Gross Sq Ft	149,300
*	Usable Sq Ft	93,057
	Space Efficiency	62%
	Estimated Acres Needed	6.00
	MACC Cost per Sq Ft	$557.73
	Estimated Total Project Costs per Sq Ft	$790.86
	Escalated MACC Cost per Sq Ft	$646.74
	Escalated Total Project Costs per Sq Ft	$917.09

*	**Move In Date**	1/15/2023

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total		$ 1,500,000	$ 1,500,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)		5.39% Std	5.39%
	Pre-Schematic Design services			
	Construction Documents	$ 3,336,134		
	Extra Services	$ 2,178,000		
	Other Services	$ 1,718,843		
	Design Services Contingency	$ 361,649		
	Consultant Services Total	$ 7,594,626	$ 4,484,180	$ 7,594,626
MACC	**Construction Contracts**			
	Site Work	$ 14,241,030		
	Related Project Costs	$ 1,081,739		
	Facility Construction	$ 67,945,581		
	MACC SubTotal	$ 83,268,350	$ 44,790,000	$ 83,268,350
	Construction Contingency (5% default)	$ 4,163,417	$ 4,163,417	$ 4,163,417
	Non Taxable Items			$ -
	Sales Tax	$ 8,830,608		$ 8,830,608
	Construction Additional Items Total	$ 12,994,025	$ 12,994,025	$ 12,994,025
	Equipment			
	Equipment	$ 6,345,250		
	Non Taxable Items			
	Sales Tax	$ 640,870		
	Equipment Total	$ 6,986,120		$ 6,986,120
	Art Work Total	$ 452,838	$ 416,342	$ 452,838
	Other Costs			
	Hazardous Material Removal	$ 100,000		
	Permit/Plan Review/Misc.	$ 700,000		
	Other Costs Total	$ 800,000		$ 800,000
	Project Management Total	$ 2,216,144		$ 2,216,144
	Grand Total Project Cost		**$ -**	**$ 115,812,103**

Construction One Time Project Costs			
One Time Costs	Estimate	Calculated	
Moving Vendor and Supplies		$ -	*$205 / Person in FY09*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2023	Estimated Cost /GSF/ 2023	Total Cost / Year	Cost / Month
☑	**Energy (Electricity. Natural Gas)**	$ 0.13	$ 1.25	$ 20,036	$ 1,670
☑	**Janitorial Services**	$ -	$ 1.56	$ 232,736	$ 19,395
☑	**Utilities (Water, Sewer, & Garbage)**	$ -	$ 1.66	$ 247,874	$ 20,656
☑	**Grounds**	$ -	$ 0.16	$ 24,598	$ 2,050
☐	**Pest Control**	$ -	$0.00	$ -	$ -
☑	**Security**	$ -	$ 0.13	$ 18,922	$ 1,577
☑	**Maintenance and Repair**	$ -	$ 6.60	$ 985,819	$ 82,152
☑	**Management**	$ -	$ 0.77	$ 115,422	$ 9,619
☑	**Road Clearance**	$ -	$ 0.09	$ 13,245	$ 1,104
☑	**Telecom**	$ 0.35	$ -	$ 52,255	$ 4,355
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 0.48**	**$ 12.23**	**$ 1,710,907**	**$ 142,576**

Ownership Option 3 Information Sheet

*	***Requires a user input***	*Green Cell*	*= Value can be entered by user.*	*Yellow Cell*	*= Calculated value.*

*	**Project Description**	Fircrest 120 Bed A3 Zero Energy Includes Water Tank System, Fire Loop and Frontage Work
*	**Construction or Purchase/Remodel**	
*	**Project Location**	Market Area =

	Statistics	
*	Gross Sq Ft	118,220
*	Usable Sq Ft	73,420
	Space Efficiency	62%
	Estimated Acres Needed	5.00
	MACC Cost per Sq Ft	$570.81
	Estimated Total Project Costs per Sq Ft	$809.71
	Escalated MACC Cost per Sq Ft	$661.92
	Escalated Total Project Costs per Sq Ft	$938.94

*	**Move In Date**	1/15/2023

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total		$ 1,250,000	$ 1,250,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)		7.63% Std	7.63%
	Pre-Schematic Design services			
	Construction Documents	$ 2,825,844		
	Extra Services	$ 2,193,000		
	Other Services	$ 1,529,582		
	Design Services Contingency	$ 327,421		
	Consultant Services Total	$ 6,875,847	$ 5,147,499	$ 6,875,847
MACC	**Construction Contracts**			
	Site Work	$ 15,770,092		
	Related Project Costs	$ 1,081,739		
	Facility Construction	$ 50,629,245		
	MACC SubTotal	$ 67,481,076	$ 35,466,000	$ 67,481,076
	Construction Contingency (5% default)	$ 3,374,054	$ 3,374,054	$ 3,374,054
	Non Taxable Items			$ -
	Sales Tax	$ 7,156,368		$ 7,156,368
	Construction Additional Items Total	$ 10,530,422	$ 10,530,422	$ 10,530,422
	Equipment			
	Equipment	$ 4,769,050		
	Non Taxable Items			
	Sales Tax	$ 481,674		
	Equipment Total	$ 5,250,724		$ 5,250,724
	Art Work Total	$ 366,399	$ 337,405	$ 366,399
	Other Costs			
	Hazardous Material Removal	$ 125,000		
	Permit/Plan Review/Misc.	$ 550,000		
	Other Costs Total	$ 675,000		$ 675,000
	Project Management Total	$ 1,995,626		$ 1,995,626
	Grand Total Project Cost		**$ -**	**$ 94,425,094**

Construction One Time Project Costs			
One Time Costs	Estimate	Calculated	
Moving Vendor and Supplies		$ -	*$205 / Person in FY09*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2023	Estimated Cost /GSF/ 2023	Total Cost / Year	Cost / Month
☑	**Energy (Electricity. Natural Gas)**	$ 0.13	$ 1.25	$ 15,369	$ 1,281
☑	**Janitorial Services**	$ -	$ 1.56	$ 184,287	$ 15,357
☑	**Utilities (Water, Sewer, & Garbage)**	$ -	$ 1.66	$ 196,274	$ 16,356
☑	**Grounds**	$ -	$ 0.16	$ 19,478	$ 1,623
☐	**Pest Control**	$ -	$0.00	$ -	$ -
☑	**Security**	$ -	$ 0.13	$ 14,983	$ 1,249
☑	**Maintenance and Repair**	$ -	$ 6.60	$ 780,599	$ 65,050
☑	**Management**	$ -	$ 0.77	$ 91,395	$ 7,616
☑	**Road Clearance**	$ -	$ 0.09	$ 10,488	$ 874
☑	**Telecom**	$ 0.35	$ -	$ 41,377	$ 3,448
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 0.48**	**$ 12.23**	**$ 1,354,248**	**$ 112,854**

APPENDIX C - LEED CHECKLISTS

Project: Fircrest School Nursing Facility
Date: 7/17/2018

Yes	Silver	Plat	No			
52	17	20	21	Total Project Score		Certified 40-49 po

Silver	ZEB	Plat	No			
1				Integrative Process	Possible Points	1
1				Credit 1 Integrative Process		1

Silver	ZEB	Plat	No			
2		4		Location and Transportation	Possible Points	16
			16	Credit 1 LEED ND Location		16
1				Credit 2 Sensitive Land Protection		1
		2		Credit 3 High Priority Site		2
			5	Credit 4 Surrounding Density and Diverse Uses		5
			5	Credit 5 Access to Quality Transit		5
1				Credit 6 Bicycle Facilities		1
		1		Credit 7 Reduced Parking Footprint		1
		1		Credit 8 Green Vehicles		1

Silver	ZEB	Plat	No			
3		4	3	Sustainable Sites	Possible Points	10
Y				Prereq 1 Construction Activity Pollution Prevention		required
1				Credit 1 Site Assessment		1
		2		Credit 2 Site Development: Protect or Restore Habitat		2
1				Credit 3 Open Space		1
			3	Credit 4 Rainwater Management		3
		2		Credit 5 Heat Island Reduction		2
1				Credit 6 Light Pollution Reduction		1

Silver	ZEB	Plat	No			
5		3	3	Water Efficiency	Possible Points	11
Y				Prereq 1 Outdoor Water Use Reduction		required
Y				Prereq 2 Indoor Water Use Reduction		required
Y				Prereq 3 Building-Level Water Metering		required
1			1	Credit 1 Outdoor Water Use Reduction		2
3		3		Credit 2 Indoor Water Use Reduction		6
			2	Credit 3 Cooling Tower Water Use		2
1				Credit 4 Water Metering		1

Silver	ZEB	Plat	No			
14	16	2	1	Energy & Atmosphere	Possible Points	33
Y				Prereq 1 Fundamental Building Commissioning and Verification		required
Y				Prereq 2 Minimum Energy Performance		required
Y				Prereq 3 Building-Level Energy Metering		required
Y				Prereq 4 Fundamental Refrigerant Management		required
6				Credit 1 Enhanced Commissioning		6
5	13			Credit 2 Optimize Energy Performance		18
1				Credit 3 Advanced Energy Metering		1
		1	1	Credit 4 Demand Response		2
	3			Credit 5 Renewable Energy Production		3
		1		Credit 6 Enhanced Refrigeration Management		1
2				Credit 7 Green Power and Carbon Offsets		2

9 points Silver 50-59 points Gold 60-79 points Platinum 80 points and above

design \ construction

Possible Points 110

Silver	ZEB	Plat	No			
7		2	4	**Materials & Resources**	Possible Points	13
Y				Prereq 1	Storage & Collection of Recyclables	required
Y				C Prereq 2	Construction and Demolition Waste Management Planning	required
3			2	C Credit 1	Building Life-Cycle Impact Reduction	5
1			1	C Credit 2	Environmental Product Declarations	2
		1	1	C Credit 3	Sourcing of Raw Materials	2
1		1		C Credit 4	Material Ingredients	2
2				C Credit 5	Construction Waste Management: Divert 50% (75%)	2

Silver	ZEB	Plat	No			
13		3		**Indoor Environmental Quality**	Possible Points	16
Y				Prereq 1	Minimum IAQ Performance	required
Y				Prereq 2	Environmental Tobacco Smoke (ETS) Control	required
1		1		Credit 1	Enhanced Indoor Air Quality Strategies	2
2		1		C Credit 2	Low-Emitting Materials	3
1				C Credit 3	Construction IAQ Management Plan	1
2				C Credit 4	Indoor Air Quality Assessment	2
1				Credit 5	Thermal Comfort	1
2				Credit 6	Interior Lighting	2
3				Credit 7	Daylight	3
1				Credit 8	Quality Views	1
		1		Credit 9	Acoustic Performance	1

Silver	ZEB	Plat	No			
6				**Innovation in Design**	Possible Points	6
1				Credit 1	Innovation in Design: Green Building Education	1
1				Credit 2	Innovation in Design: LEED O&M Starter Kit	1
1				Credit 3	Innovation in Design: Exemplary performance for Optimize Energy or Other	1
1				Credit 4	Innovation in Design: Exemplary performance for Renewable Energy or Other	1
1				Credit 5	Innovation in Design: [Specific Title]	1
1				C Credit 6	LEED™ Accredited Professional	1

Yes	Silver	Plat	No			
1	1	2		Regional Priority Credits	Possible Points	4
		1		Credit 1	RPC 1 - Demand Response	1
	1			Credit 2	RPC 2 - Renewable Energy Production	1
1				Credit 3	RPC 3 - Environmental Product Declarations	1
		1		Credit 4	RPC 4 - Sourcing of Raw Materials	1
		1		Credit 5	RPC 5 - Rainwater Management	1
			1	Credit 6	RPC 6 - Indoor Water Use Reduction	1

APPENDIX C - CAMPUS PHOTOS

LEGENDS

- EXIST SKILLED NURSING
- EXIST KITCHEN
- EXIST BUILDING #66
- EXIST ATP BUILDING
- EXIST BUILDINGS NOT IN SCOPE
- DSHS SITE ENTRY

N

EXIST CAMPUS PLAN

0.2

EXISTING ACTIVITY BUILDING

EXISTING ATP BUILDING (Adult Training Program)

COTTAGES

KITCHEN AND CAFETERIA

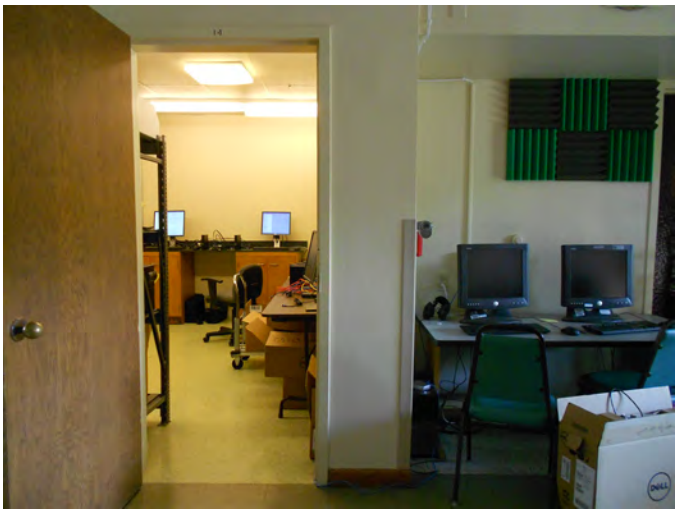
Y-BUILDING: HICKORY HOUSE

CHAPEL

PAINT SHOP

STEAM PLANT

EXISTING BUILDING 65



LAUNDRY BUILDING - BURNED DOWN APRIL 2017

EXISTING BUILDING 66 (ABANDONED)

Y-BUILDING - EXISTING PATIO IN HICKORY HOUSES

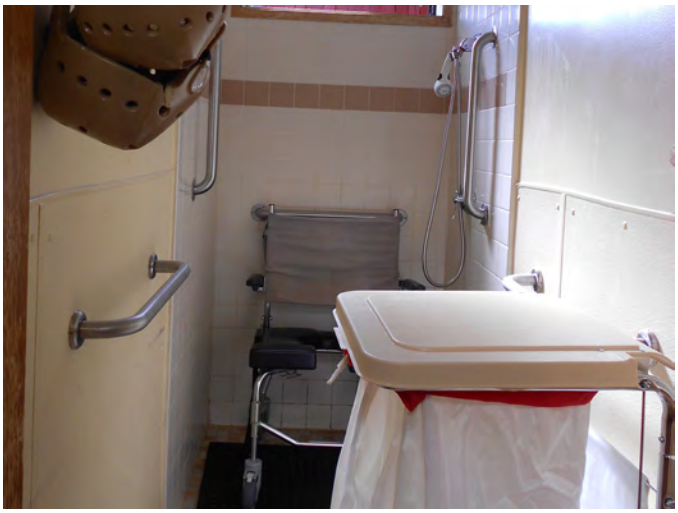
BEDROOM CONDITION

SENSORY ROOM

PASSENGER VAN

WALL ART

CHAIR SHOWER



GURNEY SHOWER

TV SPACE

NURSE OFFICE AND MEDICATION ROOM

NURSE MAIL

NURSE LOCKERS

NURSE CABINET AND FILE STORAGE

EXISTING LANDSCAPE

HAMLINE STREAM

APPENDIX E - STAKEHOLDER VISIONING RESPONSES

FIRCREST CAMPUS - QUESTIONNAIRE RESPONSES 7/1/2018

PROGRAM & FACILITY OVERVIEW

STRENGTHS

Y-bldg patios/ bedrooms
Y-bldg patios. Like the patios.
Y-bldg wide hallways. Nurse office in units
Y-bldg exits easily reached. Ease to exits
excellent care provided to many residents to live a long & healthy life with ability to grow
The staff is committed to providing quality care to clients. community base for the clients

Teamwork, stable work force, commitment to serve.

The collaboration of nursing, medical, HPA's, AC staff, Dietary, Administration, Recreation staff, PT's, speech pathologist, OT, and psychologist. Staff work together for the betterment of clients living at Fircrest

long-term staff, care for clients, knowledge expertise

Single -story Y-buildings

The time that staff have worked here, esp. Occupational Therapy, which builds continuity and institutional memory.

WEAKNES

No covered path that connects y-bldgs
y-bldg shower - irregular floors
Y-bldgs look institutional. Have fought to change public view of DD, now we need to change our look.
breakroom too small
y-bldg no privacy during sleep
y-bldg lacks home environment. No sensory rooms, inadequate activity rooms.
narrow bathrooms in Y-bldg. Not enough space. Need more space in bathrooms.
not enough space in y-bldgs
need more bathrooms per client
Inability to communicate about work loads across north & south sides of Y-buildings.
Y bldgs. are ready to fall in an earthquake, have antiquated plumbing, heating and wiring.
Inadequate & aging facility and equipment
Most clients are not as mobile and confine to a wheelchair
Limited linen access.
Turnover in AC positions, constant scrutiny
The inability to attack enough staff to reduce overtime and staff burnout.
Need a serious update. Tenured staff deserve stability and great environment.
A central kitchen would most help staff and improve patient care

lack of space for W/C storage

Utilizing buses for intra campus transportation is less ideal than having things fully accessible without resorting to busing.

I have noticed that in spite of having desk telephones, email, frequent staff meetings, postal mail, interoffice mail, pagers and cell phones there are still communication gaps that another gadget or official meetings don't seem to remedy.

It is difficult for clients to get from one building to another. Need to depend upon transportation to attend activities or medical appointment. Due to the different level of topography, it is challenging to push a client up the steep hills. We have gardens, the Activity Building, Day Program, Art program, and ATP but they all need transportation to attend these activities.

THREA

aging environment & increasing demands on regullations, life and safety, and infection control need to be addressed
Funding
Turnover, hire as fast as possible to mitigate. Not enough staff, have lots of overtime.

Failing building systems
lack of funding and imagination needed for a new building.
challenge to Retain good dietary staff who consistently send the proper food texture.

Surrounding Shoreline Community does not truly provide activities, which can full engage the residents within this environment. The homeless encampment, theft, and property damages places challenges on provide a safe atmosphere to encourage resident growth in their home.
any concerns with the growth of the surrounding Shoreline community? No, the growth is not that noticeable compared to other communities
inadequate funding causing lack of competitiveness to attract new workforce.

OPPORTUNITIES

Providing opportunity for indoor/outdoor living/ area zones such as a recreation zone, indoor greenhouse/gardening. sensory room.

I would like for the new skilled nursing program to be one big building to house all nursing home clients and a space for indoor activities.
Already run one of best NF in state. already have a good program in place, successful surveys.

To have sufficient NAC staff.

multi-story building would provide more efficient services.

demonstrated success for 24 years and understanding the mission.

Utilizing Flex time or compensation time so I can accomplish certain tasks on weekends or other times when the campus is less populated.
Improve lighting

Building upward would be more cost effective.

On-site laundry with seamstress to mend clothing/ linens.

caregivers live on campus? Not at this point but that could be a good incentive to work here.

Building 66 is so old it can not get computer cable access to many parts, has limited wiring, poor control of heating, multiple plumbing problems, small bathrooms, etc. If anything it could be a space for staff offices and storage if the new SNF were built nearby.

GENERAL INFORMATION

most residents live on campus until end of life. Hospice is offered. Not Hospice but POLS
focus is on moving clients to community setting when possible.
Surrounding Shoreline Community does not truly provide activities, which can full engage the residents within this environment. The homeless encampment, theft, and property damages places challenges on provide a safe atmosphere to encourage resident growth in their home.
NF residents have about 1 outing per week
ICF's currently have 9 residents sharing a LR/ commons
Y-bldgs have 16- 18 residents sharing LR/commons
The MD goes to the unit. There are a team of doctors on campus that work in clinic & go to units. Have medical doctors on campus. Consults such as Neurology, Psychiatrist, Ophthalmology, podiatry come to campus all other consults go to doctors in the community.

Food can be prepared in the commercial kitchen and then send to the nursing facility that has a set-up to hold carts to keep food hot and Refrigerators or docking stations to keep the carts hot/cold.

Most families don't live in King County. client families live in King County? About 50%. many live in Snohomish county but cities that are close by.

Do any caregivers live on campus? no

Nf residents have outings about 1x per day. Frequent outings. Many clients have about 2-4 outings per month. Daily outings

Steam for heat. Compact fluorescent fixtures. Since laundry building burned, laundry is sent to Rainier Campus. windows are not energy efficient, sewer lines and some rooftop drains have issues.

Currently, majority of our clients do not utilize a toilet. Majority take showers

SITE

more parking !
possible underground parking
visitors should be able to come straight to the NF to park
At least 4 disabled spots near entry, other parking within 150 feet.
the higher ground on the Fircrest campus makes for the best sites for building a nursing facility, and probably other new State operated buildings that may be built. The high ground being generally in the Northwest portion of the campus. Siting a new nursing facility on an even grade with, and somewhat close to, the Activities Building makes the Activities Building more convenient and viable for nursing clients and or staff use. Link NF with Activities Bldg with walkway

The SNF should be close to the ICF and not up a hill, so SNF clients in wheelchairs could go visit old friends in the ICF.

Recommend against siting the new building in the old Hamlin creek bed area along east side of campus.

ADA van loading adjacent to the main entry for resident's mobility? Yes, esp. good when rainy or cold. Our vans and buses have lifts.
Currently the residential nursing buildings are reliant on external kitchen facilities, an external laundry facility, an external commissary/ warehouse, and storage buildings, external maintenance/ support services buildings, external boiler building, and external office/administrative, program buildings, etc. Consolidating some, most, or all of those, and other items into the new building would be ideal in my opinion.

Staff parking of their personal vehicles away from the facility residential units. This gives a different sense to the residential part of that campus, not having parked cars crowded around the residences. It makes the feel of the inner campus more open and less urban.

Exterior Recreation areas: The Therapy Garden the Access Garden, the Playfield Garden, the dog park, and the patios of the residential units. The sidewalks throughout campus are used by ambulatory clients for recreational and program walking exercise.

Exterior Program areas,- some programs have utilized certain outdoor areas to operate client programs or classes in. The utilization of outdoor space for classroom or program activities seem to come and go and be somewhat fluid by nature. They have been located near to classroom buildings usually, out on a lawn or on an outdoor paved, patio type surface.

Garbage dumpster closer to Bldg. Trash dumpsters too far away.

If we could combine all the buildings we could be more efficient and the staff would not feel so overwhelmed and due to the open concept have a better overall view of the facility.

Currently visitor parking & van parking & unloading is inadequate.

NEIGHBORHOOD CLUSTERS

ideal size

10-16 residents ideal / 8-10

16

Bedrooms

- private room or with roommate
- lots of electrical outlets, wall sconces in addition to regular lighting.
- wide doorways
- closets
- bedside lamps , good lighting. Good sound/ communications system.
- reachable call lights for those that can use them
- wide space for using lifts
- Sturdy shelves for TV, stereos
- folding lockable support rails
- Facing Directly to commons so even when in bed they can feel part of what is going on.
- better window shades
- multi-lighting systems
- remote control blinds & shutters
- flat screen TVs
- grooming area.
- face sink
- more space
- small storage element for towels & sheets
- shelving storage that doesn't diminish floor space.
- As the majority of the residents may not be able to use a call bell system to request assistance, we should demonstrate a model for bedrooms to open to the common area. The common area should be different from the dining/Activity/laundry room areas but have some form of entertainment with access to a quit sitting area, outdoor season porch, and a separate TV area for choices.
- Bedrooms should open directly into Commons Area
- tinted windows instead of blinds that break frequently

Bathing / Shower areas

- two bedrooms sharing bathroom can have Problems with infection control
- needs more space
- needs more space
- slip-resistant flooring
- good exhaust
- lower sink counters for W/C
- storage closets
- automatic soap dispenser & paper towels
- residents take baths instead of showers? About 25%
- overhead heat lamp
- built in cabinet
- dirty linens not stored openly in shower rooms
- spray air freshner / automatic timer

Living Room/ common areas

- Need room for clients to be mobile either utilizing using forward wheel walker, Rifton walker (which tend to have a wider and larger footprint), wheelchairs (frequently are wide) or clients who are ambulatory. They need to have interesting spaces to explore i.e. variety of different sensory stimulation. Also needs space for using Hoyer lifts, larger Arjo shower gurneys.
- The ability to observe the clients at all times, but also need room for the clients to be mobile.
- Nice place for social gathering between bedrooms
- roomy dayrooms for residents who all use wheelchairs
- open areas for client to move about.

needs more space for variety of activities.
more modern
private family room
nice furniture

Connection to nature, lots of natural light, lots of storage, etc.
Lots of room, some storage space, lots of windows to see outside.
indoor plants
flat screen TVs
comfortable sofa
easily accessible shutters and blinds
slip-resistant flooring
skylight
natural light & storage
Wider doorways
Larger Janitor closet
Just more of an open concept for resident accessibility. More loops in the path so that clients do not get stuck in an area that they can't get out of easily.

Oversized corridors are under-rated. The wide corridors make for nice informal interior space that people do seem to utilize for a variety of purposes. I think residents and families appreciate the open space and apartness from city streets the campus provides in a general sense.

Dining Area

Y-bldg is fine
more modern. More homelike.
large enough for W/C & seating 4 people at the tables
ice machines
not used as conference room.
music system, adequate lighting.
flat screen TVs
more windows to see outside.
More space
W/C accessible tables, different size & height tables & adaptive chairs to meet individual needs.

The ability to have the new building attached to the existing dietary services would be beneficial for resident's availability of dining choices, and the ability to provide services for resident families to visit and enjoy mealtime with loved ones.

It would lower the cost to add to the side of the dietary building & would be the best in my opinion.

Should be spatially connected to the neighborhood prep kitchen. Residents don't participate in food prep

Utilizing the Main Kitchen, dietary staffing should remain the same.

Prep Kitchen

Y-bldg is fine
Modern that can facilitate efficient food preparation in more homelike experience.
more windows
stainless counters
non-slip flooring
large Cabinets for easily accessible items
potable food prep table with wheels
storage cabinets for towels, etc
better cabinet system
island for clients to participate with food prep
commercial refrig/ coffee maker

multiple built-in microwaves
wrap around table
Automatic washer/ sanitizer.
kitchen sink with telescope faucets
commercial style ovens
commercial style comfort mat
multiple large space cabinets
many residents are fed by tube.
Are residents able to participate in food preparation? They can if they want but very few actually do. The staff mostly cook
Currently a Challenge Providing the client with hot food/cold food with trying to reheat on the unit.
greatest dietary concern - food hot & ready at appropriate times
Currently the prep kitchen is primarily used for just heating things up and cleaning of dishware. Range exhaust hood has no fire suppression.

Laundry-cleaning
more space
more modern
room for expansion
heavy duty machines
laundry bins / shelves./ cupboard
commercial style machines. The washers and dryers are residential grade machines not commercial so breakdowns are more often.
commercial style folding tables
commercial style hampers
adequate exhaust
larger machines

Laundry - storage
more space
more space for storage
work table
easily accessible cabinets, cupboards, shelving
separate linen storage and diapers
more supplies
most space

Outdoors
W/C accessible, outdoor lighting
Have even, flat walk ways, ADA regulations, interesting features plants, bird feeders, chimes, different scents, visual outside features, streamers.
non-poisonous plants
good sized patio with sunroom, cooking / BBQ area, gardening space.
lots of plants, raised beds.
spacious. Large open space to be able to walk, sitting area - covered and uncovered, swing.
Water fountain
Bird bath
humming bird feeder
accessible pathways for clients to go in garden
Gardens are source of happiness to clients & staff-provide well organized & nice
lawn grass
to be more inviting
gardening area. Therapy garden.

Fenced area (independence), with the ability to plant, feel different textile opportunities, observe flower beds, swings or even a vehicle which they can be rolled through would provide them a new and uplifting experience. Activity boards and water features/fire pits to allow experiences not achieved.

Nature/ nice flowering plants (flowers a repeat comment)

Covered patio space works well, playground

clear of cluttered materials. Safe

provide wide patio doors.

gardens with accessible paths.

Functioning Outdoor living areas:. patios, building's yards, doorway areas, some sidewalk areas, landscapes directly adjacent to buildings, these areas are commonly used for program functions also, such as the recycling program.

Program elements per Neighborhood

DR
Quiet Area (yes from most)
Separate TV (yes from most)
Separate Activity (yes from most) with setup to Skype with family
4-season porch/ sunroom (sunroom- some yes, most not needed, yes 4-season porch)
sensory or quiet room (yes, within neighborhood cluster)
resident laundry (yes from most)
Exterior flower gardens/ shaded area
(most say - don't need private family dining/ visitation)
bathroom shared by adjacent bedrooms
shower in hall, off a bathroom
residents also take bed-baths (with the trolley)
bariatric rooms to have built-in lifts
storage specific to individual clients
More Activities - computer games, new tools.
A/V equipment/ movie screen / projector
reachable nurse calls
Fish tank
Soothing Colors, lights, and sounds, and better temperature control of spaces.

NURSING CARE

portable emergency life alert for clients & staff

Doctors employed, most appointments are seen on campus with doctors coming to the facility for treatment.

The nurse station is operated like an extension of the Phamacy.With one centralized location, less opportunities for lost keys or compromised med rooms. With centralization, it is harder to have multiple nurses to serve the population needs of 100-150 residents. Mobile as long as there is a potential to secure the carts when done would solve the needs and to have them centralized within the building might be the way to go. Individuality with a one location view.
Central nurse station . Better centralized so newer nurses can learn from ones with more experience. If centralized, all nurses hear about changes in clients and carry over that info if the primary nurse is off the next day.

Nursing Central offices to include Nursing, Recreations personals, ACM's, Med room.

Storage for wheelchairs, beds, commodes, shower and bath chairs, etc.

specialty caregivers OT, PT, Speech, dentist, plus consultants for podiatry, rehab medicine, vision, psychiatry,neurologist, ophthalmologist, etc. .

The current campus-wide pharmacy does a good job.

PHYSICAL THERAPY

There can be a room for parallel bars, stairs, combination bicycle for upper and lower extremities, and space for extra wheelchairs and rehab parts.

MAIN KITCHEN

deliveries made? Most are made to the commissary, however there are deliveries to our dietary building as well.
The current campus-wide kitchen is doing a good job. It would be easier if the kitchen only had to deliver to one location, and there would be less wasted food.
challenge to Retaining good staff who consistently send the proper food texture.
Foods that are available. Do not get much choices. Get what is served for the day, whatever comes on their tray.
greatest concern - not being able to provide home-like food choices.

ADMINISTRATION

Receptionist
Medical staff offices
lobby/ small waiting room/ public toilets
Managers and HPA's offices

FACILITIES & MAINTENANCE

automatic doors or power assist
walkie talkie communication system
better access to plumbing under floor- provide crawl space
What type of security equipment is needed? Security cameras and monitors? Yes both inside and outside. Will some residential areas be locked facilities? Most of them to provide safty and control of access to resident areas. After hours for sure. Security cameras and monitors? Probably not legal for our clients. Will some residential areas be locked facilities? No
Maintenance efficiency: Ease of access to water closets, components and equipment vital to ensure a safe and healthy environment. Appropriate fall protection, durable surfaces to not defer from preventative maintenance replacing it with corrective.

Yes, need a maintenance room within the proposed skilled nursing facility? Yes. I see for the size that there will be more than just one. (No, don't need) Yes, to maintain wheelchairs, walkers, beds, etc.

maintenance storage Not necessarily needed within the proposed facility. Certain chemicals and supplies need to be in a safe and maintained environment and the potential for errors which can relate to violation would be too great in areas not visited daily or have multiple access point compromised by others outside of the department. (No, don't need) Yes, or nearby, at least 1000 sq ft. Also, a part time electronics technician would continue to be needed, with a space of about 200 sq ft.

At the service area, need Mop sink, chemical dispensary, supplies for weekly needs would be adequate. This would be beneficial for not only the housekeeping staff but the SN staff as well, after hour's needs and emergencies.

The facility staff within Transportation pick up trash. An on campus recycling crew comprised of residents from ICF handles recycle. The yard waste can be removed by grounds and taken to the yard waste weed pile.

Vinyl flooring , VCT, Carpet squares, ceramic tiles, FRP, Wainscoting. Square flooring makes for ease of doing repairs. FRP is durable.

Maintenance efficiency: green . Plumbing, windows, commercial grade appliances

most common maintenance complaint with the building? Heating control

present lighting or acoustics does not seem to be an issue.

The mechanical rooms are not worker friendly at all.

We have plumbing systems that are failing due to the age of our buildings. It is also difficult to find some parts due to age. The electrical system is just as old with outdated panels that are starting to have overloading issues

It does not appear that all staff are comfortable the use of the communication devices that we have here on site now. We used to have Radios but now the P.T.T. phones are a little more confusing.

No compactor.

implement composting of non-biological waste. Better recycling needed. Kitchen waste could be converted to garden compost via worm bins, providing jobs for clients.

IT support needed.

Garbage system needs to change.

Need Better access to the roof

Supporting services just needs equipment that can easily be repaired and parts for. Paint colors to a minimum to make it easier for our painting staff. Grounds? Easy care foliage and beds.

Construction site needs to be secured & drivers careful since residents free to walk campus.

BREAK ROOM

Large room with comfortable sofa
sleeping/ resting area for staff
personal shower area
massage reclining chair for staff
Staff regularly access snack shop
resting area for staff that worked overtime.

SHARED AMENITY SPACES

Physical Therapy- new equipment/ lots of space (yes from all)
Therapies - Jacuzzi Bath/ massage recliners
Interactive touch to speak tablets
Central Media / Theater. (Yes from most, but some no)
Library / Computer Room (Yes from some, but some no)
Sensory Rooms (yes from all) Quiet sensory room with bubble lights, music. Quiet area with padded mats/ recliners
Large Meeting Rm/ Multipurpose Rm (Yes from most, but some no) Yes for karaoke, musicians. For resident council, CP review, med review meetings.
Utilize existing on-site Pharmacy
Should have good connection to ICF residents
NF residents will use existing spaces throughout campus
Circulation from NF to activities, recreation, chapel
Speech, OT, PT, MD's, Dentist could continue to serve the entire campus. Rec should change to shared to increase opportunities for clients and encourage mixing.

Swimming Pool . Rebuild pool.
Gym
Daycare for all staff
Giftshop for clients to visit
Coffee / Ice Cream machine for visiting families. Onsite café
Reading / relaxation place for families
Water fountain
gold fish pond
Therapy pets
Therapy pool
minature garden

humming bird feeder
lawn grass
theater with stage
built-in movie theater
built-in surround sound
live wall pictures
interactive lighting
botanical garden with produce

salon for NF (Yes from most, but some no) new salon. Separate Beauty Salon for SN? That would save travel time for clients.

Could share with ICF the following: Central PT, Central Theater, Library/Computer Room, Beauty salon, On-site Pharmacy, transportation. ATP.

NF Staff utilize ATP, coffee shop, activity building, Day Program, ATP, and Art program. Also to go observe at the dog park on campus or to Hamlin Park.

Connection to other parts of campus: Delivery and program assistance. Maybe a janitor work location, cleaning crew, therapy moving assistance, etc.

Both ICF & NF staff will access Activities Building & ATP. other areas will they go? To the coffee cart and other areas in the Coffee Shop, Art Group, Day Program, ATP. Art Groups, Day Program, Vocational programs. Visits to parks, pools, malls, etc.

Programs used most that is outside NF - Recreation & Art Programs, Day program, transportation.

Connections of NF to other parts of campus: Recreation/ Activities / Salon / Doctors / pharmacy

NF residents will also go off-campus

Fire pit / water fall / pond

Large shared gazebo

FIRCREST SCHOOL PREFERRED ALTERNATIVE 3

BUILDING PROGRAM: SUMMARY OF MAJOR COMPONENTS

		FTE Staff	Subtotal ASF	Total ASF
A	**FACILITY COMPONENTS (NET)**			
	RESIDENT COTTAGES:			57,826
	Typical Bedrooms Cottages		26,300	
	Bariatric Bedroom Cottages		5,330	
	Resident Support At Cottages		16,410	
	Resident Bathing At Cottages		3,510	
	Service Areas At Cottages		6,276	
	CENTRAL / COMMON SERVICE AREAS			1,600
	CENTRAL NURSING			950
	THERAPY / REHAB / WELLNESS			6,950
	STAFF BREAK ROOM / WELLNESS			910
	ADMINISTRATIVE / VISITOR AREAS			1,135
	VILLAGE CENTER (Meeting Rooms, Coffee/Gift Shop)			2,285
	MAINTENANCE / MECHANICAL / ELECTRICAL			1,764
	Total Net	0.0	57,826	73,420
B	**AUXILLIARY COMPONENTS (GROSS)**			
	Circulation / Structure Allowance (includes minimum 8 foot wide resident corridors, hallways, MEP, shafts, walls)	50% of net SF		36,710
	Total Gross Area (A+B)			110,130

		Number of Cars		
C	**PARKING + ACCESS NEEDS**			
	Parking	131		34,699
	Total Parking Area	131		34,699
D	**OUTDOOR AREAS**			
	Outdoor Areas, Walks, Landscaping, Loading Dock			23,676
	Total Outdoor Areas			23,676

		# of Panels	SF / panel*	
E	**NET-ZERO SOLAR**			
	Photovoltaic Solar Array-Roof	2,500	18	45,000

FIRCREST SCHOOL PREFERRED ALTERNATIVE 3

BUILDING PROGRAM: INDOOR COMPONENTS

TYPE OF SPACE	Number of Rooms per Cottage	Number of Rooms	SF per Room	Net ASF Required
A TYPICAL BEDROOMS COTTAGES				
Grouped in **5** *Neighborhood Cottages of 20 rooms each*				
1-Bed Private Rooms	4	20	210	4200
with wheelchair storage				
1-Bed Shared Sink/Toilet Room	2	10	70	700
shared between 2 private rooms				
2-Bed Double Rooms	8	40	500	20000
2-Bed Shared Sink/Toilet Room	4	20	70	1400
1 per each double room				
Total Beds 100				
ASF per Cottage 5,260				
Subtotal Net ASF				26,300
B BARIATRIC BEDROOM COTTAGES				
Grouped in **1** *Neighborhood Cottage of 20 rooms*				
1-Bed Private Rooms		0	210	0
with wheelchair storage				
1-Bed Shared Sink/Toilet Room		0	70	0
shared between 2 private rooms				
2-Bed Double Rooms	8	8	500	4000
2-Bed Shared Sink/Toilet Room	4	4	70	280
1 per each double room				
Bariatric Private Bedrooms	4	4	225	900
with hoist to shared bathroom				
Bariatric Shared Sink/Toilet Room	2	2	75	150
shared between 2 bariatric bedrooms				
Total Beds 20				
ASF per Cottage 5,330				
Subtotal Net ASF				5,330

FIRCREST SCHOOL PREFERRED ALTERNATIVE 3

BUILDING PROGRAM: INDOOR COMPONENTS

TYPE OF SPACE	Number of Rooms per Cottage	Number of Rooms	SF per Room	Net SF Required
C RESIDENT SUPPORT AT COTTAGES				
Proposed Cottages: **6**				
Clustered at Each Neighborhood Cottage				
Living / Sitting Area / Lounge	1	6	600	3600
w/ fish tank + video-conferencing nook				
Dining Area	1	6	450	2700
Dining Storage	1	6	50	300
Activity Room	1	6	500	3000
w/ sink, service counter, cabinets, large flat TV & sound system				
TV Room *flat screen TV, sound system*	1	6	180	1080
Country Kitchen	1	6	200	1200
Country Kitchen staff only	1	6	80	480
Locked Storage Closet	1	6	225	1350
Quiet Room / Sensory Room	1	6	100	600
4-Season Sunroom	1	6	150	900
Uni-Sex Toilet Room	1	6	40	240
Resident Laundry	1	6	80	480
Laundry Storage	1	6	80	480
ASF per Cottage 2,735				
Subtotal Net ASF				16,410
D RESIDENT BATHING AT COTTAGES				
Clustered at Each Neighborhood Cottage				
Resident Bathing				
Gurney shower	2	12	210	2520
Chair Shower	1	6	125	750
Toilet/ Sink shared between bathing	2	6	40	240
ASF per Cottage 585				
Subtotal Net ASF				3,510

FIRCREST SCHOOL PREFERRED ALTERNATIVE 3

BUILDING PROGRAM: INDOOR COMPONENTS

TYPE OF SPACE	Number of Rooms per Cottage	Number of Rooms	SF per Room	Net SF Required
E SERVICE AREAS AT COTTAGES				
Clustered at Each Neighborhood Cottage				
Nursing Staff Office	1	6	200	1200
Clean Work Room	1	6	150	900
Clean Linen Area	1	6	75	450
Soiled Linen Area + Handwashing Station	1	6	75	450
Tube Feeding Prep Area and Storage	1	6	80	480
Oxygen Storage	1	6	36	216
Housekeeping Supplies w/ mop sink	1	6	80	480
Storage - Hoyer Lifts *with nearby charging, near Living*	2	12	30	360
Storage *commodes, shower chair, beds*	1	6	100	600
Sub Electrical Rooms		6	65	390
Staff Mail Slots	1	6	35	210
Staff Locker Room	1	6	30	180
Staff Bathroom M/W	1	6	60	360
ASF per Cottage 1,046				
Subtotal Net ASF				6,276
F CENTRAL / COMMON SERVICE AREAS				
Central Clean Linen Room		1	200	200
Central Soiled Linen Storage		1	200	200
Housekeeping Room *with mop sink / chemical storage*		1	200	200
Indoor Trash		1	100	100
Food Receiving Area *Connected to Outdoor Loading Dock*		1	400	400
Equipment Storage Room		1	100	100
Indoor Furniture Storage Room		1	200	200
Future Expansion Storage Room		1	200	200
Subtotal Net ASF				1,600
G CENTRAL NURSING				
Nursing Office (no central meds room)		1	300	300
Doctor's Office		1	150	150
Visiting Consultants/Volunteers Office		2	100	200
Recreation Staff / Work Room / Copier		1	300	300
Subtotal Net ASF				950

FIRCREST SCHOOL PREFERRED ALTERNATIVE 3

BUILDING PROGRAM: INDOOR COMPONENTS

TYPE OF SPACE	Number of Rooms	SF per Room	Net SF Required
H THERAPY / REHAB / WELLNESS			
Community Physical Therapy/Exercise	3	1200	3600
adjacent to outdoor area			
Unisex Toilet	3	70	210
Rehab Therapy Equipment Storage	3	200	600
Rehab Office	3	80	240
Sensory Rooms	6	150	900
Clean Linen Storage	3	80	240
Beauty/Salon	1	180	180
One-On-One Therapy Room	1	80	80
Resident SoakingTub	2	210	420
Hydrotherapy Tank	1	300	300
Housekeeping/ Janitor	3	60	180
Subtotal Net ASF			6,950
I STAFF BREAK ROOM / WELLNESS			
Staff/Volunteer Lounge Indoor	1	300	300
connected to an outdoor patio			
Staff Restrooms	1	300	300
Staff Rest/Quiet Area	1	80	80
Staff showers	1	150	150
Lockable Staff/Volunteer Lockers	1	80	80
Subtotal Net ASF			910
J ADMINISTRATIVE / VISITOR AREAS			
Lobby / Entry / Waiting Area	1	225	225
Lobby Reception Desk	1	80	80
Admin Director Office	1	200	200
Assistance Director Office	1	150	150
Work Room / Copier	1	200	200
Family/Volunteer Meeting Room	1	150	150
with video conferencing			
Communications / IT	1	80	80
Visitor Uni-Sex Restroom	1	50	50
Subtotal Net ASF			1,135

FIRCREST SCHOOL PREFERRED ALTERNATIVE 3

BUILDING PROGRAM: INDOOR COMPONENTS

TYPE OF SPACE	Number of Rooms	SF per Room	Net SF Required
K VILLAGE CENTER (Meeting Rooms, Coffee/Gift Shop)			
Large Multi-Purpose / Meeting Room	1	1200	1200
Multi-Purpose Room Stage	1	100	100
Multi-Purpose Room Storage	1	100	100
M/W Toilets	1	160	160
Small Mult-Purpose Room	1	500	500
Coffee/Ice Cream/ Gift Shop *for Visitors and Clients*	1	225	225
Subtotal Net ASF			2,285
L MAINTENANCE / MECHANICAL / ELECTRICAL			
Main Electrical Room	1	350	350
MDF Telecommunications Room	1	144	144
Sub Telecommunications Rooms	4	100	400
Mechanical Room	1	300	300
Sprinkler Closet	1	100	100
Maintenance Room	1	150	150
Emergency Electrical Room	1	320	320
Subtotal Net ASF			1,764
NET ASF TYPICAL COTTAGE (A)			9,626
GROSS SF 5,135 SF CIRCULATION / WALLS AT 53%			14,761
NET ASF BARIATRIC COTTAGE (B)			9,696
GROSS SF 5140 SF CIRCULATION / WALLS AT 53%			14,836
TOTAL NET ASF ALL COTTAGES (A+B+C+D+E)			57,826
TOTAL NET ASF COMMON SPACES (F+G+H+I+J+K+L)			15,594
TOTAL NET ASSIGNABLE SQUARE FEET			73,420
TOTAL GROSS SQUARE FEET (1.5 x)			110,130

M PROGRAM SPACES SHARED WITH CAMPUS

None

Abbreviations

ASF: Assignable Square Feet
FTE: Full Time Equivalent (staff)
GSF: Gross Square Feet
M/W: Men's and Women's
NSF: Net Square Feet
SF: Square Feet
W/: With
W/C: Wheelchair

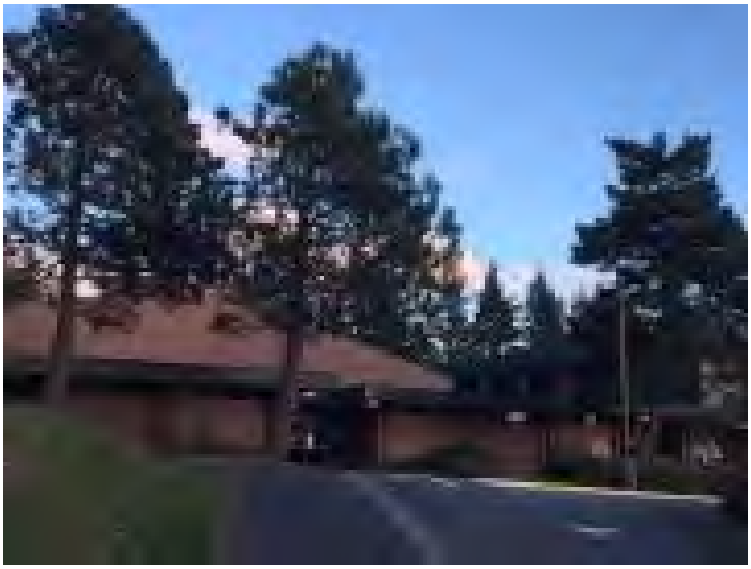
FIRCREST SCHOOL PREFERRED ALTERNATIVE 3

BUILDING PROGRAM: OUTDOOR COMPONENTS

TYPE OF SPACE	FTE Daytime Staff or Occupants	Total Number of Beds	NSF of Office Space	Number of Spaces	SF per each Outdoor Space	Total SF Required
N PARKING[1]				131		34,699
Visitor Parking		100		50		12,500
1 per 2 beds						
Nursing Staff Parking	30			30		7,500
1 per *each FTE daytime nursing staff*						
Admin/Office Staff Parking	7		0	7		1,750
1 per FTE daytime admin. staff, plus						
1 per 400 SF of office space						
Meeting/Conference Room Parking[3]	113.3		1700	28		7,083
1 per 4 occupants						
HC Accessible Parking - Code				3		1,566
1 per 25 parking spaces						
HC Accessible Parking - beyond Code				4		1,800
Van / Bus Parking				3		900
Golf Cart Only' Transport Parking				5		1,600
O OUTDOOR AREAS						23,676
For **6** *Resident Neighborhoods*						
Outdoor Resident Areas - Uncovered				6	600	3,600
Outdoor Resident Areas - Covered				6	400	2,400
w/ swing						
Outdoor Storage for Chairs, Gardening Supplies				6	100	600
Cottage Courtyard / Therapy Garden	20' x 50'			6	1,000	6,000
raised beds/ non-poisonous plants, gold fish pond, water fountain,						
bird bath, hummingbird feeder, shared Gazebo & barbeque						
Loading Dock	10' x 40'			2	400	800
Main Dumpster Area - Trash/Recycle/Compost				1	300	300
Visitor Outdoor Area				1	150	150
Staff Private Outdoor Area				1	150	150
Bicycle Parking				15	4	60
Parking Landscape/Walks	20 SF per car			1	2,616	2,616
Landscaping - Lawn Areas				1	4,000	4,000
Landscaping - Shrub/Trees Areas				1	3,000	3,000

Notes

1. 250 SF per automobile incl. backing distance (not including drives or landscaping)
2. 450 SF per assessible space incl. backing distance (not including drives or landscaping)
3. 15 SF per occupant assumed



Fircrest School

Nursing Facility Operating Plan and Budget Analysis

October 26, 2018

Prepared By:

ATTUNE Healthcare Partners

Contents

1. Projected Demand for DD Nursing Facility Beds

There are currently 258 certified DD Nursing Facility beds in Washington State. This includes 92 beds at the Fircrest School in Shoreline, WA, 93 beds at Lakeland Village in Medical Lake near Spokane, WA and 73 beds at the Yakima Valley School. As of June, 2018 there were 282 DD clients who were assessed to be eligible for Nursing Facility level of care, including 60 clients at the Rainier School in Buckley, WA. This exceeds current bed capacity by 24 clients.

Statewide growth in demand among DD Nursing Facility clients is expected to increase from 282 in 2018 to approximately 323 by 2030 and possibly over 350 by 2040. This is based on current population projections prepared by OFM for Washington State as well as continuation of current DD rates per thousand among nursing eligible clients.

In addition, it is expected that the programmatic needs of the DD population will likely change over time. Over the last 30 years, the Developmental Disabilities Administration has transitioned the majority of DD clients to community based residential care settings. While this has worked very well, this group of clients is aging and will increasingly need access to interim solutions, such as respite care for short term (30 day) stays to relieve aging caregivers, as well as crisis management care for clients that are developing more severe chronic conditions similar to the general population. This will increase DD nursing facility demand and it will change the mix of clients served. A change in client needs will require a mix of double bed rooms and single bed rooms to accommodate individual client needs among the three client types (long term care, short term respite care, and crisis management). The projected demand for nursing facility beds at the Fircrest School will grow from a current average daily census of 87 to 140 or even 160 for long term care, respite and crisis management by 2040.

2. Programmatic Requirements

Based on experience at the current Fircrest Nursing Facility, the most operationally efficient bed configuration involves 20-bed pods. This allows for the most economical staffing plan and meets or exceeds CMS direct nursing staff ratios of 4 – 1. Each single and double bed room has a shared bathroom, individual wardrobes, and personal storage areas. Other programmatic functions within each pod include family-like amenities such as dining areas, activity space, nurse administration space, medication management space, and equipment storage. Other functions that improve efficiencies are included in the space program such as activity space for on-site physical therapy, occupational therapy, and speech therapy. There is also space within the new facilities to accommodate physician office space for on-site rounding and for on-site behavioral health professional visits.

Program goals that impact DD nursing facility space requirements include:

- Implement a staffing plan that embraces the Fircrest School model which has consistently received 4 star status from CMS annual audits
- Optimize operational efficiencies
    - Develop single story buildings that minimize staff transport time

    - Utilize double loaded corridors to maximize staff observation capabilities and minimize walking distances for clients and staff
    - Include space within the nursing facility rather than transporting clients to other buildings on campus for heavily utilized programs and services. Services to be included within the nursing facility:
        - Physical, occupational, and speech therapy
        - Medical clinic space for physician rounding
        - Activity space
    - Include visual amenities such as windows for viewing the outdoors, covered patios for outdoor enjoyment, and skylights/clearstories for ample natural light.
- Minimize costly duplication of services where possible
    - Utilize centralized services available elsewhere on campus, including the centralized kitchen, laundry, and maintenance that can be transported to the new facility easily and economically
    - Establish single point of entry for families and visitors with centralize reception area for check-in to promote safety and security for the entire building
- Utilize existing space as much as possible while ensuring other program goals are met
- Comply with Fircrest's existing facility master plan that promotes reduction of the overall facility footprint across the campus.

3. Staffing Projections

The projected staffing requirements to operate a new nursing facility at Fircrest School are based on the staffing plan outlined for the Fircrest School as defined in the 2017 study "Facility Wide Resource Assessment". This detailed study describes the staffing mix for three staff categories, including:

- Clinical staff which is comprised of direct nursing staff, medical practitioners, dentists, pharmacists, and therapists
- Administrative and support staff for the nursing facility
- Centralized staff for the campus who are allocated to the nursing facility including housekeeping, maintenance, dietary, laundry, and others.

Direct Nursing Staff

The direct nursing staff configuration for the Fircrest School is core to the entire staffing model developed for the new facility. Table 1 describes the Fircrest Model which results in an average of 5.5 hours of nursing face-time per bed per day.

Table 1: Direct Nursing Care Staff – 2017 Fircrest School Staffing Model

		Staffing Plan by Type of Staff by Shift						
		6:30 am 3:00 pm	3:00 pm 9:00 pm	9:00 pm 11:00 pm	11:00 pm 6:30 am	Nursing Hours/Day	Nursing Hours/Week	FTEs @ 40 Hrs/Week
# of Staff	CNA*	20	20	10	10	385.0	2,695.0	67.4
	LPN**	5	5	5	2	97.5	682.5	17.1
	RN***	1	1	1	1	24	168.0	4.2
	Total	26	26	16	13			
Hrs/Shift		8.5	6.0	2.0	7.5			
Total Hrs/Shift		221	156	32	97.5	505.5	3,545.5	88.6
Total Hours/ Bed/Day		2.4	1.7	0.3	1.1	**5.5**		

Notes

*CNA: Certified Nurse Assistant provides hands-on direct patient care
**LPN: Licensed Practical Nurse provides medication management
*** RN: Registered Nurse provides staff management and care planning for each client
Fircrest Nursing Beds: 92

The information provided in Table 2 below extrapolates the 2017 staffing model to the five physical space alternatives developed for the new Fircrest School Nursing Facility. Operating efficiencies are measured in terms of FTEs per bed where lower ratios reflect higher operating efficiencies. The results indicate that Alternative 3 provides the highest operating efficiencies due to the ability to 1) accommodate 20 bed pods in new space; 2) implement a functional plan that eliminates two floor configurations; 3) involves all new construction; and 4) provides optimal ratios of single bed rooms with double bed rooms. Alternatives 3 also includes double loaded corridors that maximize sight distances and minimize walking distances. In addition, Alternatives 3 minimizes the number of client transports to external facilities to access services that would be included within the new nursing facility. Altogether, DD clients can be better served in new space that promotes better client outcomes, greater convenience for clients and staff, as well as lower operating costs.

Table 2: Fircrest Nursing Faciity Estimated Direct Nursing FTEs by Facility Alternative

Direct Nursing Staff	Alt 1 FTES for 90 Beds in Renovated Space (Building 66) Plus Expansion	Alt 2A FTEs for 100 Beds in New Construction North of the Existing Kitchen	Alt 2B FTEs for 160 Beds Same as Alt. 2A Plus 60 Bed Expansion Across the Street	Alt 3A FTEs for 100 Beds in New Construction on the Madrona Site	Alt 3B FTEs for 160 Beds Same as 3A plus 60 Bed Expansion on the Madrona Site
CNA	80.6	73.2	128.9	73.2	117.2
LPN	20.4	18.5	32.6	18.5	29.7
RN	5.0	4.6	8.0	4.6	7.3
Total	106.0	96.3	169.6	96.3	154.2
Adjustments for Reuse of Existing Space	+18.0%	+10.0%	+22.5%		
FTEs/Bed*	1.18	.96	1.06	.96	.96
*Lower is better					

Other Clinical Personnel

In addition to direct nursing staff, there are additional clinical personal who interact with clients on an as needed basis per their individualized care plan. This includes physicians, dentists, pharmacy, therapies, and behavioral health specialists. For the Rainier Campus, it also includes on-site ophthalmology, imaging, and laboratory services. While these services are shared with the ICF facilities, they are available on site for more convenient client access to medical professionals skilled in managing the challenges of DD medical, dental, and behavioral health care. Most specialty services are provided by community based hospitals and specialty care providers.

Table 3: Other Clinical Personnel for Rainier School

Personnel Currently Available On-Site	**Routinely Purchased Specialty Services**
Medical Director	Podiatry
Physicians	Gastroenterology
Physician Assistants	Neurology
Psychiatrist	EKC
Dentist	Mammography
Dental Assistants	Ophthalmology
Dental Hygienist	Imaging
Sedation Recovery	Laboratory Services
Pharmacy	
Occupational Therapy	
Physical Therapy	
Speech Therapy	
Behavioral Health Specialists	

Table 4: Fircrest School Estimated FTEs for All Clinical Staff by Alternative

Direct Nursing Staff	Alt 1 FTES for 90 Beds in Renovated Space (Building 66) Plus Expansion	Alt 2A FTEs for 100 Beds in New Construction North of the Existing Kitchen	Alt 2B FTEs for 160 Beds Same as Alt. 2A Plus 60 Bed Expansion Across the Street	Alt 3A FTEs for 100 Beds in New Construction on the Madrona Site	Alt 3B FTEs for 160 Beds Same as 3A plus 60 Bed Expansion on the Madrona Site
Other Medical FTEs	19.2	21.3	34.1	21.3	34.1
Direct Nursing FTEs	106.0	96.3	169.6	96.3	154.2
Total Clinical FTEs on Site	125.2	117.6	203.7	117.6	188.3
Clinical FTEs per Bed	1.39	1.18	1.27	1.18	1.18

As shown in Table 4, the most efficient facility program plans are reflected in Alternatives involving new construction regardless of facility size which have the lowest ratio of clinical staff per bed @ 1.18 FTEs per bed. These alternatives include space within the new facilities to accommodate other medical

personnel which avoids transporting clients to other on-site facilities for regular PT/OT, as well as medical and behavioral health care consults.

Administrative and Support Personnel

Administrative and support personnel include direct support staff as well as centralized personnel that is shared with the ICF program at Fircrest. Centralized services as depicted below account for those additional FTEs needed to operationalize the new Fircrest Nursing Facility and exclude the number of FTEs needed to support other campus services and facilities.

Table 5: Support Personnel for Fircrest Nursing Facility

Direct Support Staff	Support Services for Nursing Facility Only	Centralized Services (Nursing Facility –NF- Only)
Nursing Facility (NF) Administrator	NF Building Operations and Maintenance	NF Quality Management
NF Director of Nursing	NF Housekeeping	NF Human Resources
NF Assistant Director	Dietary	NF Medical Records
NF Activities Coordinator	Commissary	NF Short Stay Management
Habilitation Plan Administrator	Other	NF Safety
CNA Managers		NF Business Services
Secretary		NF Regional Support Services

Please refer to Appendix A for detailed Support Personnel FTE Projections for Fircrest Nursing Facility

Table 6: Fircrest School Estimated Nursing Facility <u>TOTAL FTEs</u> by Alternative

Direct Nursing Staff	Alt 1 FTES for 90 Beds in Renovated Space (Building 66) Plus Expansion	Alt 2A FTEs for 100 Beds in New Construction North of the Existing Kitchen	Alt 2B FTEs for 160 Beds Same as Alt. 2A Plus 60 Bed Expansion Across the Street	Alt 3A FTEs for 100 Beds in New Construction on the Madrona Site	Alt 3B FTEs for 160 Beds Same as 3A plus 60 Bed Expansion on the Madrona Site
Total Clinical FTEs on Site (Table 4)	125.2	117.6	203.7	117.6	188.3
Admin & Support FTEs	70.2	78.0	114.2	78.0	114.2
Centralized FTEs	13.0	18.9	21.0	18.9	21.0
Total FTEs	208.4	214.6	338.9	214.6	323.4
Total FTEs/Bed	2.32	2.15	2.12	2.15	2.02

As shown in Table 6, Alternatives 3B offers the most operationally efficient staffing plan compared to the other four facility design opportunities. This is due to the following attributes that describe Alternatives 3B:

- All new construction

- Maximum use of 20 bed pod design
- Maximum use of double loaded corridors
- Inclusion of clinical space within the facility for PT/OT/Speech as well as clinical space for medical staff rounding for routine medical checkups
- Inclusion of activity space within the facility design – minimizes on-campus transports and frees staff time for direct nursing care
- Optimal mix of single and double bed rooms to accommodate long term care, respite care, and crisis management care within the facility
- Ability to leverage current administrative and support staff to accommodate increased client volumes
- Elimination of multi-story structures.
- Maximum ratio of double and single bed rooms.
- Continuity of space that eliminates barriers for staff and clients such as outdoor breezeway building connectors (Alt 1A and 1B) or bed expansion across the street from the main building (Alt 2B).

4. Projected Operating Budgets by Alternative

The projected operating budget for a Nursing Facility at the Fircrest School is based on the historical budget for 2016 - 2017 actual Biennium and the projected budget for the 2018 -2019 Biennium. Another source document is the Developmental Disabilities Administration 2017 Caseload and Cost Report as well as the 2018 CBO Report. The budget analysis addresses only the proposed Nursing Facility and excludes the ICF program at the Fircrest School.

The major line items in the budget estimates for 2023 (the first year of operation) through 2032 include:

- Salaries and Wages, escalated at 3.4% per year
- Employee Benefits, calculated at 54% of Compensation
- Goods and Services
- Travel
- Capital Outlays
- Grants, Benefits, and Client Services
- Debt Service
- Inter and Intra-agency Reimbursements

Table 7: Budget Estimate - $$ in Millions
Alternative 1A: 90 Beds in Renovated Space – Building 66

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Salaries	$12.1	$12.5	$13.0	$13.4	$13.8	$14.3	$14.8	$15.2	$15.8	$16.3
Benefits	6.6	6.8	7.0	7.2	7.5	7.7	8.0	8.2	8.5	8.8
Goods/Services	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4
Other*	.3	.3	.3	.3	.3	.4	.3	.3	.4	.4
Total	$21.5	$22.2	$23.0	$23.7	$24.5	$25.4	$26.2	$27.1	$28.0	$29.0

* Includes Travel, Capital Outlays, Grants & Client Services, Prior Debt Service, Intra and Inter-Agency Reimbursements

Table 8: Budget Estimate - $$ in Millions
Alternative 2A: 100 Beds in New Construction North of Kitchen

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Salaries	$12.5	$12.9	$13.4	$13,8	$14.3	$14.7	$15.2	$15.7	$16.3	$16.8
Benefits	6.8	7.0	7.2	7.5	7.7	8.0	8.2	8.5	8.8	9.1
Goods/Services	2.6	2.7	2.8	2.8	2.9	3.0	3.1	3.2	3.4	3.5
Other*	.3	.3	.3	.4	.4	.4	.5	.4	.3	.4
Total	$22.2	$22.9	$23.7	$24.5	$25.3	$26.1	$27.0	$27.9	$28.8	$29.8

* Includes Travel, Capital Outlays, Grants & Client Services, Prior Debt Service, Intra and Inter-Agency Reimbursements

Table 9: Budget Estimate - $$ in Millions
Alternative 2B: 2A + 60 Bed Expansion Across the Street from Main Structure

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Salaries	$19.7	$20.4	$21.1	$21.8	$22.5	$23.3	$24.0	$24.8	$26.7	$26.5
Benefits	10.7	11.0	11.4	11.7	12.2	12.6	13.0	13.4	13.9	14.3
Goods/Services	4.0	4.2	4.4	4.5	4.6	4.8	5.0	5.1	5.3	5.5
Other*	.6	.5	.5	.6	.7	.5	.6			
Total	$35.0	$36.1	$37.4	$38.6	$40.0	$41.2	$42.6	$44.0	$45.5	$47.0

* Includes Travel, Capital Outlays, Grants & Client Services, Prior Debt Service, Intra and Inter-Agency Reimbursements

Table 10: Budget Estimate - $$ in Millions
Alternative 3A: 100 Beds in Newly Constructed Space on Madrona Site

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Salaries	$12.5	$13.0	$13.4	$13.8	$14.3	$14.7	$15.2	$15.7	$16.3	$16.8
Benefits	6.8	7.0	7.2	7.5	7.7	8.0	8.2	8.5	8.8	9.1
Goods/Services	3.6	2.7	2.8	2.8	2.9	3.0	3.1	3.2	3.4	3.5
Other*	.4	.2	.4	.4	.4	.4	.5	.5	.3	.4
Total	$22.2	$22.9	$23.7	$24.5	$25.3	$26.1	$27.0	$27.9	$28.8	$29.8

* Includes Travel, Capital Outlays, Grants & Client Services, Prior Debt Service, Intra and Inter-Agency Reimbursements

Table 11: Budget Estimate - $$ in Millions
Alternative 3B: 160 Beds in Newly Constructed Space on Madrona Site

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Salaries	$18.8	$19.4	$20.1	$20.7	$21.4	$22.2	$22.9	$23.7	$24.5	$25.3
Benefits	10.2	10.5	10.8	11.2	11.6	12.0	12.4	12.8	13.2	13.7
Goods/Services	3.9	4.0	4.2	4.3	4.4	4.6	4.7	4.9	5.0	5.2
Other*	.5	.6	.6	.7	.7	.6	.7	.6	.7	.7
Total	$33.4	$34.5	$35.7	$36.9	$38.1	$39.4	$40.7	$42.0	$43.4	$44.9

* Includes Travel, Capital Outlays, Grants & Client Services, Prior Debt Service, Intra and Inter-Agency Reimbursements

5. Net Present Value Analysis

The net present value analysis allows evaluation and comparison of the relative costs associated with operating a Nursing Facility by alternative. When paired with the life cycle costs of construction, maintenance, and utilities (as prepared by the architectural and engineering team) it offers an assessment of which alternative is most cost effective over the life of the facility and examines the tradeoffs of capital costs versus operating costs. For example, it may be more cost effective to renovate existing facilities for less capital expenditures up front but may cost more to operate the facility over time and vice versa. Both pieces of the equation need to be evaluated and compared to identify the most economical approach toward meeting the need for nursing care at the Fircrest School.

The net present value of operating the facility has been calculated assuming a 5% annual discount rate over a ten year time horizon. Table 12 summarizes the net present value of each alternative.

6. Preferred Alternative

As shown in Table 12 below, Alternative 3B, offers the best financial results for operating the facility over time. Alternative 1A would be most expensive to operate per bed, exceeding the preferred alternative (3B) by 14.2%. The preferred alternative involves all new construction on a greenfield site with no demolition costs. It also allows for maximum staff efficiency in facility design and includes functions that are currently provided elsewhere on campus which currently requires time consuming client transport to access those services.

Table 12: Net Present Value Analysis of Operations

Alternative	Bed Size	Net Present Value	Net Present Value/Bed	Comparison to Alt. 3B
Alternative 1A: Retrofit Building 66	90 Beds	$145.0 Million	$1.61 Million / Bed	+14.2%
Alternative 2A: New Construction North of Kitchen	100 Beds	$149.3 Million	$1.49 Million / Bed	+5.7%
Alternative 2B: Alt 2A + 60 New Beds Across the Street	160 Beds	$235.8 Million	$1.47 Million /Bed	+4.3%
Alternatives 3A: New Construction on Separate Madrona Site	100 Beds	$149.1 Million	$1.49 Million /Bed	+5.7%
Alternatives 3B: Alt #A with 60 Bed Expansion on Madrona Site	160 Beds	$225.0 Million	$1.41 Million / Bed	0%

The net present value analysis of alternatives is only one factor to address when selecting the preferred alternative. It should be evaluated as part of a broader analysis of capital costs, maintenance costs, and utility costs over the life cycle of the facility.

7. Transition Costs

In addition to the capital costs, operating costs, maintenance costs and utility costs, there are transition costs associated with the project. This includes the cost to prepare a Certificate of Need which includes costs associated with community input via public meetings. These costs will be incurred during the design period.

Other transition costs will occur as part of operationalizing the new facility, including recruitment of new staff and retraining of existing staff to provide direct nursing care, medical and dental care as well as therapies and pharmacy. And finally, there are costs associated with transitioning clients from their existing nursing facility at the Fircrest School to their new home.

FIRCREST SCHOOL (Revised 10 26 2018)
Nursing Facility Predesign Budget Projections

	Current Biennial Budget		First Biennium		Second Biennium		Third Biennium		Fourth Biennium		Fifth Biennium		Budget Assumptions
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	
NO ACTION ALTERNATIVE																
FTEs	268.6	268.6	268.6	268.6	268.6	268.6	268.6	268.6	268.6	268.6	268.6	268.6	268.6	268.6	268.6	Capped @ 2019 Budget Allocation
Average Salary	$ 49,730	$ 51,082	$ 52,788	$ 54,551	$ 56,373	$ 58,256	$ 60,202	$ 62,213	$ 64,291	$ 66,438	$ 68,657	$ 70,950	$ 73,320	$ 75,769	$ 78,299	Escalated 3.34% / year
SALARIES & WAGES	$ 13,357,478	$13,720,625	$14,178,894	$14,652,469	$15,141,862	$15,647,600	$16,170,230	$16,710,315	$17,268,440	$17,845,206	$18,441,236	$19,057,173	$ 19,693,682	$ 20,351,451	$ 21,031,190	
EMPLOYEE BENEFITS	$ 16,110,000	$16,414,000	$ 7,656,603	$ 7,912,333	$ 8,176,605	$ 8,449,704	$ 8,731,924	$ 9,023,570	$ 9,324,958	$ 9,636,411	$ 9,958,267	$10,290,873	$ 10,634,589	$ 10,989,784	$ 11,356,843	54% of Salaries & Wages
TOTAL COMPENSATION	$ 29,467,478	$30,134,625	$21,835,497	$22,564,802	$23,318,467	$24,097,304	$24,902,154	$25,733,886	$26,593,397	$27,481,617	$28,399,503	$29,348,046	$ 30,328,271	$ 31,341,235	$ 32,388,032	
GOODS & SERVICES	$ 6,307,000	$ 6,331,000	$ 2,925,957	$ 3,023,684	$ 3,124,675	$ 3,229,039	$ 3,336,889	$ 3,448,341	$ 3,563,515	$ 3,682,537	$ 3,805,533	$ 3,932,638	$ 4,063,988	$ 4,199,726	$ 4,339,996	13.4% Compensation
TRAVEL	$ 25,000	$ 25,000	$ 11,573	$ 11,959	$ 12,359	$ 12,772	$ 13,198	$ 13,639	$ 14,095	$ 14,565	$ 15,052	$ 15,554	$ 16,074	$ 16,611	$ 17,166	.053% of Compensation
CAPITAL OUTLAYS	$ 278,000	$ 278,000	$ 131,013	$ 135,389	$ 139,911	$ 144,584	$ 149,413	$ 154,403	$ 159,560	$ 164,890	$ 170,397	$ 176,088	$ 181,970	$ 188,047	$ 194,328	.6% of Compensation
GRANTS & CLIENT SERVICES	$ 60,000	$ 60,000	$ 28,386	$ 29,334	$ 30,314	$ 31,326	$ 32,373	$ 33,454	$ 34,571	$ 35,726	$ 36,919	$ 38,152	$ 39,427	$ 40,744	$ 42,104	.13% of Compensation
DEBT SERVICE	$ 78,000	$ 120,000	$ 56,772	$ 58,668	$ 60,628	$ 62,653	$ 64,746	$ 66,908	$ 69,143	$ 71,452	$ 73,839	$ 76,305	$ 78,854	$ 81,487	$ 84,209	.26% of Compensation
INTER-AGENCY REIMBURSEMT	$ (360,000)	$ (360,000)	$ (165,950)	$ (171,492)	$ (177,220)	$ (183,140)	$ (189,256)	$ (195,578)	$ (202,110)	$ (208,860)	$ (215,836)	$ (223,045)	$ (230,495)	$ (238,193)	$ (246,149)	(76%) of Compens
INTRA-AGENCY REIMBURSEMT	$ 665,000	$ 666,000	$ 307,881	$ 318,164	$ 328,790	$ 339,772	$ 351,120	$ 362,848	$ 374,967	$ 387,491	$ 400,433	$ 413,807	$ 427,629	$ 441,911	$ 456,671	1.41% of Compensation
TOTAL BUDGET	$ 36,520,478	$37,254,625	$25,131,128	$25,970,508	$26,837,923	$27,734,310	$28,660,636	$29,617,901	$30,607,139	$31,629,417	$32,685,840	$33,777,547	$ 34,905,717	$ 36,071,568	$ 37,276,358	
NPV	**$ 209,502,234**		$23,934,408	$23,556,016	$23,183,607	$22,817,085	$22,456,358	$22,101,333	$21,519,922	$21,408,034	$21,069,584	$20,736,483	$ 19,436,809	$ 19,129,533	$ 18,827,093	
	2023-2032															

ALTERNATIVE 1: RENOVATE BUILDING 66 PLUS ADDITION																
90 Beds																
FTEs			208.4	208.4	208.4	208.4	208.4	208.4	208.4	208.4	208.4	208.4	208.4	208.4	208.4	
Average Salary	$ 49,730	$ 51,082	$ 52,788	$ 54,551	$ 56,373	$ 58,256	$ 60,202	$ 62,213	$ 64,291	$ 66,438	$ 68,657	$ 70,950	$ 73,320	$ 75,769	$ 78,299	Escalated 3.34% / year
SALARIES & WAGES	$ -	$ -	$11,001,048	$11,368,483	$11,748,190	$12,140,580	$12,546,075	$12,965,114	$13,398,149	$13,845,647	$14,308,092	$14,785,982	$ 15,279,834	$ 15,790,180	$ 16,317,573	
EMPLOYEE BENEFITS	$ 16,110,000	$16,414,000	$ 5,940,566	$ 6,138,981	$ 6,344,023	$ 6,555,913	$ 6,774,881	$ 7,001,162	$ 7,235,001	$ 7,476,650	$ 7,726,370	$ 7,984,430	$ 8,251,110	$ 8,526,697	$ 8,811,489	54% of Salaries & Wages
TOTAL COMPENSATION	$ 16,110,000	$16,414,000	$16,941,614	$17,507,464	$18,092,213	$18,696,493	$19,320,956	$19,966,276	$20,633,150	$21,322,297	$22,034,462	$22,770,413	$ 23,530,944	$ 24,316,878	$ 25,129,062	
GOODS & SERVICES	$ 6,307,000	$ 6,331,000	$ 2,270,176	$ 2,346,000	$ 2,424,357	$ 2,505,330	$ 2,589,008	$ 2,675,481	$ 2,764,842	$ 2,857,188	$ 2,952,618	$ 3,051,235	$ 3,153,147	$ 3,258,462	$ 3,367,294	13.4% Compensation
TRAVEL	$ 25,000	$ 25,000	$ 8,979	$ 9,279	$ 9,589	$ 9,909	$ 10,240	$ 10,582	$ 10,936	$ 11,301	$ 11,678	$ 12,068	$ 12,471	$ 12,888	$ 13,318	.053% of Compensation
CAPITAL OUTLAYS	$ 278,000	$ 278,000	$ 101,650	$ 105,045	$ 108,553	$ 112,179	$ 115,926	$ 119,798	$ 123,799	$ 127,934	$ 132,207	$ 136,622	$ 141,186	$ 145,901	$ 150,774	.6% of Compensation
GRANTS & CLIENT SERVICES	$ 60,000	$ 60,000	$ 22,024	$ 22,760	$ 23,520	$ 24,305	$ 25,117	$ 25,956	$ 26,823	$ 27,719	$ 28,645	$ 29,602	$ 30,590	$ 31,612	$ 32,668	.13% of Compensation
DEBT SERVICE	$ 78,000	$ 120,000	$ 44,048	$ 45,519	$ 47,040	$ 48,611	$ 50,234	$ 51,912	$ 53,646	$ 55,438	$ 57,290	$ 59,203	$ 61,180	$ 63,224	$ 65,336	.26% of Compensation
INTER-AGENCY REIMBURSEMT	$ (360,000)	$ (360,000)	$ (128,756)	$ (133,057)	$ (137,501)	$ (142,093)	$ (146,839)	$ (151,744)	$ (156,812)	$ (162,049)	$ (167,462)	$ (173,055)	$ (178,835)	$ (184,808)	$ (190,981)	(76%) of Compens
INTRA-AGENCY REIMBURSEMT	$ 665,000	$ 666,000	$ 238,877	$ 246,855	$ 255,100	$ 263,621	$ 272,425	$ 281,524	$ 290,927	$ 300,644	$ 310,686	$ 321,063	$ 331,786	$ 342,868	$ 354,320	1.41% of Compensation
TOTAL BUDGET	$ 23,163,000	$23,534,000	$19,498,612	$20,149,866	$20,822,871	$21,518,355	$22,237,068	$22,979,786	$23,747,311	$24,540,471	$25,360,123	$26,207,151	$ 27,082,470	$ 27,987,024	$ 28,921,791	
NPV	**$ 145,024,316**		$18,570,106	$18,276,522	$17,987,578	$17,702,967	$17,423,324	$17,147,870	$16,876,770	$16,609,956	$16,347,361	$16,088,917	$ 15,080,532	$ 14,842,116	$ 14,607,470	
	2023-2032															

ALTERNATIVE 2A: NEW CONSTRUCTION NORTH OF KITCHEN																
100 Beds																
FTEs			214.6	214.6	214.6	214.6	214.6	214.6	214.6	214.6	214.6	214.6	214.6	214.6	214.6	
Average Salary	$ 49,730	$ 51,082	$ 52,788	$ 54,551	$ 56,373	$ 58,256	$ 60,202	$ 62,213	$ 64,291	$ 66,438	$ 68,657	$ 70,950	$ 73,320	$ 75,769	$ 78,299	Escalated 3.34% / year

SALARIES & WAGES	$ -	$10,962,197	$11,328,335	$11,706,701	$12,097,705	$12,501,768	$12,919,327	$13,350,833	$13,796,751	$14,257,562	$14,733,765	$15,225,872	$ 15,734,416	$ 16,259,946	$ 16,803,028			
EMPLOYEE BENEFITS	$ 16,110,000	$16,414,000	$ 6,117,301	$ 6,321,619	$ 6,532,761	$ 6,750,955	$ 6,976,437	$ 7,209,450	$ 7,450,245	$ 7,699,083	$ 7,956,233	$ 8,221,971	$ 8,496,585	$ 8,780,371	$ 9,073,635	54% of Salaries & Wages		
TOTAL COMPENSATION	$ 16,110,000	$27,376,197	$17,445,635	$18,028,319	$18,630,465	$19,252,723	$19,895,764	$20,560,282	$21,246,996	$21,956,645	$22,689,997	$23,447,843	$ 24,231,001	$ 25,040,317	$ 25,876,663			
GOODS & SERVICES	$ 6,307,000	$ 6,331,000	$ 2,337,715	$ 2,415,795	$ 2,496,482	$ 2,579,865	$ 2,666,032	$ 2,755,078	$ 2,847,097	$ 2,942,190	$ 3,040,460	$ 3,142,011	$ 3,246,954	$ 3,355,402	$ 3,467,473	13.4% Compensation		
TRAVEL	$ 25,000	$ 25,000	$ 9,246	$ 9,555	$ 9,874	$ 10,204	$ 10,545	$ 10,897	$ 11,261	$ 11,637	$ 12,026	$ 12,427	$ 12,842	$ 13,271	$ 13,715	.053% of Compensation		
CAPITAL OUTLAYS	$ 278,000	$ 278,000	$ 104,674	$ 108,170	$ 111,783	$ 115,516	$ 119,375	$ 123,362	$ 127,482	$ 131,740	$ 136,140	$ 140,687	$ 145,386	$ 150,242	$ 155,260	.6% of Compensation		
GRANTS & CLIENT SERVICES	$ 60,000	$ 60,000	$ 22,679	$ 23,437	$ 24,220	$ 25,029	$ 25,864	$ 26,728	$ 27,621	$ 28,544	$ 29,497	$ 30,482	$ 31,500	$ 32,552	$ 33,640	.13% of Compensation		
DEBT SERVICE	$ 78,000	$ 120,000	$ 45,359	$ 46,874	$ 48,439	$ 50,057	$ 51,729	$ 53,457	$ 55,242	$ 57,087	$ 58,994	$ 60,964	$ 63,001	$ 65,105	$ 67,279	.26% of Compensation		
INTER-AGENCY REIMBURSEMT	$ (360,000)	$ (360,000)	$ (132,587)	$ (137,015)	$ (141,592)	$ (146,321)	$ (151,208)	$ (156,258)	$ (161,477)	$ (166,871)	$ (172,444)	$ (178,204)	$ (184,156)	$ (190,306)	$ (196,663)	(76%) of Compens		
INTRA-AGENCY REIMBURSEMT	$ 665,000	$ 666,000	$ 245,983	$ 254,199	$ 262,690	$ 271,463	$ 280,530	$ 289,900	$ 299,583	$ 309,589	$ 319,929	$ 330,615	$ 341,657	$ 353,068	$ 364,861	1.41% of Compensation		
TOTAL BUDGET	$ 23,163,000	$34,496,197	$20,078,705	$20,749,334	$21,442,361	$22,158,536	$22,898,631	$23,663,446	$24,453,805	$25,270,562	$26,114,599	$26,986,826	$ 27,888,186	$ 28,819,652	$ 29,782,228			
NPV	**$ 149,339,549**		$19,122,576	$18,820,257	$18,522,717	$18,229,882	$17,941,676	$17,658,027	$17,378,862	$17,104,111	$16,833,703	$16,567,570	$ 15,529,918	$ 15,283,633	$ 15,042,049			
	2023-2032																	

ALTERNATIVE 2B: NEW CONSTRUCTION NORTH of KITCHEN

160 Beds																		
FTEs	268.6	268.6	338.9	338.9	338.9	338.9	338.9	338.9	338.9	338.9	338.9	338.9	338.9	338.9	338.9			
Average Salary	$ 49,730	$ 51,082	$ 52,788	$ 54,551	$ 56,373	$ 58,256	$ 60,202	$ 62,213	$ 64,291	$ 66,438	$ 68,657	$ 70,950	$ 73,320	$ 75,769	$ 78,299	Escalated 3.34% / year		
SALARIES & WAGES	$ 13,357,478	$13,720,625	$17,889,900	$18,487,423	$19,104,903	$19,743,007	$20,402,423	$21,083,864	$21,788,065	$22,515,786	$23,267,814	$24,044,959	$ 24,848,060	$ 25,677,985	$ 26,535,630			
EMPLOYEE BENEFITS	$ 16,110,000	$16,414,000	$ 9,660,546	$ 9,983,208	$10,316,648	$10,661,224	$11,017,308	$11,385,287	$11,765,555	$12,158,525	$12,564,619	$12,984,278	$ 13,417,953	$ 13,866,112	$ 14,329,240	54% of Salaries & Wages		
TOTAL COMPENSATION	$ 29,467,478	$30,134,625	$27,550,446	$28,470,631	$29,421,550	$30,404,230	$31,419,731	$32,469,150	$33,553,620	$34,674,311	$35,832,433	$37,029,236	$ 38,266,013	$ 39,544,098	$ 40,864,870			
GOODS & SERVICES	$ 6,307,000	$ 6,331,000	$ 3,691,760	$ 3,815,065	$ 3,942,488	$ 4,074,167	$ 4,210,244	$ 4,350,866	$ 4,496,185	$ 4,646,358	$ 4,801,546	$ 4,961,918	$ 5,127,646	$ 5,298,909	$ 5,475,893	13.4% Compensation		
TRAVEL	$ 25,000	$ 25,000	$ 14,602	$ 15,089	$ 15,593	$ 16,114	$ 16,652	$ 17,209	$ 17,783	$ 18,377	$ 18,991	$ 19,625	$ 20,281	$ 20,958	$ 21,658	.053% of Compensation		
CAPITAL OUTLAYS	$ 278,000	$ 278,000	$ 165,303	$ 170,824	$ 176,529	$ 182,425	$ 188,518	$ 194,815	$ 201,322	$ 208,046	$ 214,995	$ 222,175	$ 229,596	$ 237,265	$ 245,189	.6% of Compensation		
GRANTS & CLIENT SERVICES	$ 60,000	$ 60,000	$ 35,816	$ 37,012	$ 38,248	$ 39,525	$ 40,846	$ 42,210	$ 43,620	$ 45,077	$ 46,582	$ 48,138	$ 49,746	$ 51,407	$ 53,124	.13% of Compensation		
DEBT SERVICE	$ 78,000	$ 120,000	$ 71,631	$ 74,024	$ 76,496	$ 79,051	$ 81,691	$ 84,420	$ 87,239	$ 90,153	$ 93,164	$ 96,276	$ 99,492	$ 102,815	$ 106,249	.26% of Compensation		
INTER-AGENCY REIMBURSEMT	$ (360,000)	$ (360,000)	$ (209,383)	$ (216,377)	$ (223,604)	$ (231,072)	$ (238,790)	$ (246,766)	$ (255,008)	$ (263,525)	$ (272,326)	$ (281,422)	$ (290,822)	$ (300,535)	$ (310,573)	(76%) of Compens		
INTRA-AGENCY REIMBURSEMT	$ 665,000	$ 666,000	$ 388,461	$ 401,436	$ 414,844	$ 428,700	$ 443,018	$ 457,815	$ 473,106	$ 488,908	$ 505,237	$ 522,112	$ 539,551	$ 557,572	$ 576,195	1.41% of Compensation		
TOTAL BUDGET	$ 36,520,478	$37,254,625	$31,708,635	$32,767,704	$33,862,145	$34,993,141	$36,161,911	$37,369,719	$38,617,868	$39,907,705	$41,240,622	$42,618,059	$ 44,041,502	$ 45,512,488	$ 47,032,605			
NPV	**$ 235,784,877**		$30,198,700	$29,721,273	$29,251,394	$28,788,943	$28,333,803	$27,885,859	$27,444,997	$27,011,105	$26,584,072	$26,110,180	$ 24,523,956	$ 24,136,244	$ 23,754,661			
	2023-2032																	

ALTERNATIVE 3A: NEW CONSTRUCTION MADRONA SITE

100 Beds																		
FTEs			214.6	214.6	214.6	214.6	214.6	214.6	214.6	214.6	214.6	214.6	214.6	214.6	214.6			
Average Salary	$ 49,730	$ 51,082	$ 52,788	$ 54,551	$ 56,373	$ 58,256	$ 60,202	$ 62,213	$ 64,291	$ 66,438	$ 68,657	$ 70,950	$ 73,320	$ 75,769	$ 78,299	Escalated 3.34% / year		
SALARIES & WAGES	$ -	$10,962,197	$11,328,335	$11,706,701	$12,097,705	$12,501,768	$12,919,327	$13,350,833	$13,796,751	$14,257,562	$14,733,765	$15,225,872	$ 15,734,416	$ 16,259,946	$ 16,803,028			
EMPLOYEE BENEFITS	$ 16,110,000	$16,414,000	$ 6,117,301	$ 6,321,619	$ 6,532,761	$ 6,750,955	$ 6,976,437	$ 7,209,450	$ 7,450,245	$ 7,699,083	$ 7,956,233	$ 8,221,971	$ 8,496,585	$ 8,780,371	$ 9,073,635	54% of Salaries & Wages		
TOTAL COMPENSATION	$ 16,110,000	$27,376,197	$17,445,635	$18,028,319	$18,630,465	$19,252,723	$19,895,764	$20,560,282	$21,246,996	$21,956,645	$22,689,997	$23,447,843	$ 24,231,001	$ 25,040,317	$ 25,876,663			
GOODS & SERVICES	$ 6,307,000	$ 6,331,000	$ 2,337,715	$ 2,415,795	$ 2,496,482	$ 2,579,865	$ 2,666,032	$ 2,755,078	$ 2,847,097	$ 2,942,190	$ 3,040,460	$ 3,142,011	$ 3,246,954	$ 3,355,402	$ 3,467,473	13.4% Compensation		
TRAVEL	$ 25,000	$ 25,000	$ 9,246	$ 9,555	$ 9,874	$ 10,204	$ 10,545	$ 10,897	$ 11,261	$ 11,637	$ 12,026	$ 12,427	$ 12,842	$ 13,271	$ 13,715	.053% of Compensation		
CAPITAL OUTLAYS	$ 278,000	$ 278,000	$ 104,674	$ 108,170	$ 111,783	$ 115,516	$ 119,375	$ 123,362	$ 127,482	$ 131,740	$ 136,140	$ 140,687	$ 145,386	$ 150,242	$ 155,260	.6% of Compensation		
GRANTS & CLIENT SERVICES	$ 60,000	$ 60,000	$ 22,679	$ 23,437	$ 24,220	$ 25,029	$ 25,864	$ 26,728	$ 27,621	$ 28,544	$ 29,497	$ 30,482	$ 31,500	$ 32,552	$ 33,640	.13% of Compensation		
DEBT SERVICE	$ 78,000	$ 120,000	$ 45,359	$ 46,874	$ 48,439	$ 50,057	$ 51,729	$ 53,457	$ 55,242	$ 57,087	$ 58,994	$ 60,964	$ 63,001	$ 65,105	$ 67,279	.26% of Compensation		
INTER-AGENCY REIMBURSEMT	$ (360,000)	$ (360,000)	$ (132,587)	$ (137,015)	$ (141,592)	$ (146,321)	$ (151,208)	$ (156,258)	$ (161,477)	$ (166,871)	$ (172,444)	$ (178,204)	$ (184,156)	$ (190,306)	$ (196,663)	(76%) of Compens		
INTRA-AGENCY REIMBURSEMT	$ 665,000	$ 666,000	$ 245,983	$ 254,199	$ 262,690	$ 271,463	$ 280,530	$ 289,900	$ 299,583	$ 309,589	$ 319,929	$ 330,615	$ 341,657	$ 353,068	$ 364,861	1.41% of Compensation		
TOTAL BUDGET	$ 23,163,000	$34,496,197	$20,078,705	$20,749,334	$21,442,361	$22,158,536	$22,898,631	$23,663,446	$24,453,805	$25,270,562	$26,114,599	$26,986,826	$ 27,888,186	$ 28,819,652	$ 29,782,228			
NPV	**$ 149,087,056**		$19,122,576	$18,820,257	$18,522,717	$18,229,882	$17,941,676	$17,658,027	$17,378,862	$17,104,111	$16,833,703	$16,567,570	$ 15,529,185	$ 15,283,676	$ 14,790,246			
	2023-2032																	

ALTERNATIVE 3B: NEW CONSTRUCTION MADRONA SITE

160 Beds																		
FTEs	268.6	268.6	323.4	323.4	323.4	323.4	323.4	323.4	323.4	323.4	323.4	323.4	323.4	323.4	323.4			
Average Salary	$ 49,730	$ 51,082	$ 52,788	$ 54,551	$ 56,373	$ 58,256	$ 60,202	$ 62,213	$ 64,291	$ 66,438	$ 68,657	$ 70,950	$ 73,320	$ 75,769	$ 78,299	Escalated 3.34% / year		

SALARIES & WAGES	$ 13,357,478	$13,720,625	$17,071,684	$17,641,878	$18,231,117	$18,840,036	$19,469,294	$20,119,568	$20,791,562	$21,486,000	$22,203,632	$22,945,233	$ 23,711,604	$ 24,503,572	$ 25,321,991		
EMPLOYEE BENEFITS	$ 16,110,000	$16,414,000	$ 9,218,709	$ 9,526,614	$ 9,844,803	$10,173,620	$10,513,419	$10,864,567	$11,227,443	$11,602,440	$11,989,961	$12,390,426	$ 12,804,266	$ 13,231,929	$ 13,673,875	54% of Salaries & Wages	
TOTAL COMPENSATION	$ 29,467,478	$30,134,625	$26,290,393	$27,168,493	$28,075,920	$29,013,656	$29,982,712	$30,984,135	$32,019,005	$33,088,440	$34,193,593	$35,335,659	$ 36,515,871	$ 37,735,501	$ 38,995,866		
GOODS & SERVICES	$ 6,307,000	$ 6,331,000	$ 3,522,913	$ 3,640,578	$ 3,762,173	$ 3,887,830	$ 4,017,683	$ 4,151,874	$ 4,290,547	$ 4,433,851	$ 4,581,942	$ 4,734,978	$ 4,893,127	$ 5,056,557	$ 5,225,446	13.4% Compensation	
TRAVEL	$ 25,000	$ 25,000	$ 13,934	$ 14,399	$ 14,880	$ 15,377	$ 15,891	$ 16,422	$ 16,970	$ 17,537	$ 18,123	$ 18,728	$ 19,353	$ 20,000	$ 20,668	.053% of Compensation	
CAPITAL OUTLAYS	$ 278,000	$ 278,000	$ 157,742	$ 163,011	$ 168,456	$ 174,082	$ 179,896	$ 185,905	$ 192,114	$ 198,531	$ 205,162	$ 212,014	$ 219,095	$ 226,413	$ 233,975	.6% of Compensation	
GRANTS & CLIENT SERVICES	$ 60,000	$ 60,000	$ 34,178	$ 35,319	$ 36,499	$ 37,718	$ 38,978	$ 40,279	$ 41,625	$ 43,015	$ 44,452	$ 45,936	$ 47,471	$ 49,056	$ 50,695	.13% of Compensation	
DEBT SERVICE	$ 78,000	$ 120,000	$ 68,355	$ 70,638	$ 72,997	$ 75,436	$ 77,955	$ 80,559	$ 83,249	$ 86,030	$ 88,903	$ 91,873	$ 94,941	$ 98,112	$ 101,389	.26% of Compensation	
INTER-AGENCY REIMBURSEMT	$ (360,000)	$ (360,000)	$ (199,807)	$ (206,481)	$ (213,377)	$ (220,504)	$ (227,869)	$ (235,479)	$ (243,344)	$ (251,472)	$ (259,871)	$ (268,551)	$ (277,521)	$ (286,790)	$ (296,369)	(.76%) of Compens	
INTRA-AGENCY REIMBURSEMT	$ 665,000	$ 666,000	$ 370,695	$ 383,076	$ 395,870	$ 409,093	$ 422,756	$ 436,876	$ 451,468	$ 466,547	$ 482,130	$ 498,233	$ 514,874	$ 532,071	$ 549,842	1.41% of Compensation	
TOTAL BUDGET	$ 36,520,478	$37,254,625	$30,258,403	$31,269,033	$32,313,419	$33,392,687	$34,508,003	$35,660,570	$36,851,633	$38,082,478	$39,354,433	$40,668,871	$ 42,027,211	$ 43,430,920	$ 44,881,512		
NPV	**$ 225,054,129**		$28,817,752	$28,361,934	$27,913,546	$27,472,246	$27,037,923	$26,611,958	$26,189,767	$25,775,720	$25,368,218	$24,967,158	$ 23,402,323	$ 23,032,344	$ 22,668,718		
	2023-2032																

BACKGROUND

Building 66 is a 3-story building constructed around 1971. The west side of the building's first floor is below grade and the exterior west concrete wall serves as a retaining wall. A series of ramps connect the 2nd and 3rd floors.

The building is constructed with cast-in-place concrete strip footings, slab on grade on the 1st floor, concrete pan joists and beams on the 2nd, 3rd floors and roof, and concrete columns. The concrete beams and columns system form space frames.

The exterior frames are infilled with brick cladding and CMU blocks and interior frames are infilled with CMU blocks (Photo 1). It is indicated on the existing drawings that the CMU walls are load bearing.

Photo 1 – East Elevation of Building

On the roof at the center of the building is a square opening that serves as a light well directly above the planters on the lower levels (Photos 2 and 3).

Photo 2 –
Courtyard with Planter at Level 2

Photo 3 –
Courtyard with Planter at Level 3

EXISTING CONDITION

Based on review of the existing drawings it appears that the only concrete walls other than the retaining walls are the stair shaft walls supporting the exterior landings. All CMU and brick wall types are shown only on the Architectural drawings and it is difficult to discern the wall types and their limits.

The structural drawings do not indicate the type of seismic load resisting system. The column sizes do not appear large enough nor are they heavily reinforced. Additionally, all CMU walls are connected with dowel bars to bordering concrete beams and columns or frame. Therefore, we have assumed that the CMU are shear walls. As a result the concrete

columns must have displacement compatibility with the CMU walls when resisting lateral seismic loads.

The building condition assessment and seismic evaluation included visual field observations of unconcealed structural elements and a review of the original drawings. No history or records of past building renovations or improvements are available for our review.

The existing building appears to be in general conformance with the original drawings. No visible signs of settlement, distress, spalls, exposed reinforcing bars, damage or deterioration were observed on the concrete, CMU or brick.

Based on our site observation and evaluation, it is our judgement that in general, this building is in good condition. We did not observe any exterior structural or non-structural components that may result in falling debris hazards during a seismic event. This conclusion does not guarantee the condition of the existing building construction or its future performance.

SEISMIC EVALUATION

Building 66 was evaluated using the Three-Tiered procedure outlined in the ASCE 41-13 Standards – Seismic Evaluation and Retrofit of Existing Buildings. The three tiers and their scope are:

Tier 1 – Screening: Structural inspection, review of existing drawings to ascertain well defined load path, identify deteriorations, defects, damages and potential deficiencies and completing a checklist to produce a deficiency list of Non-Compliant (NC) elements of structural systems and non-structural components. This is a quick check using simple analysis. Non-Compliant does not necessarily imply that the structure is unsafe but indicates that further and more detailed analysis is required to rule out the deficiencies noted.

Tier 2 – Deficiency-based Evaluation: A further evaluation of identified deficiencies in the Checklist in Tier 1. Elements that are still Non-Compliant or have unresolved noted deficiencies may indicate an inherent weakness in their ability to performance satisfactorily in a seismic event.

Tier 3 – Systematic Evaluation: Further evaluation and detailed analysis or more sophisticated analysis of elements not resolved in Tier 2 evaluation. This may involve the entire building. These items would be subject to retrofit or seismic upgrade. Site specific geotechnical seismic information will be required for use in these analyses.

Tier 1 – Screening was performed on structural elements for the purposes of this report. Tier 2 was beyond the scope of this project.

Performance Objective

ASCE 41-13 seismic evaluation process is required to be conducted with defined performance objectives consisting of Basic Performance Objective for Existing Buildings (BPOE) that varies with the Performance Objective and is defined in ASCE41-13, and Seismic Hazard Levels as defined in the International Building Code (IBC) for different Risk Categories. It should be noted that it is up to the owner of the building or facility to decide what performance level is desired.

Performance Objective is targeted to Building Performance Levels as it relates to Seismic Hazard Level.

Risk Category

Risk Category is based on the use or occupancy of the building, and they are:

Risk Category I – Buildings that present a low risk to human life in the event of failure.

Risk Category II – Buildings not listed in Risk Categories I, II and IV.

Risk Category III – Buildings with potential to cause substantial impact and/or mass disruption to day-to-day civilian life in the event of failure.

Risk Category IV – Essential facilities required to maintain functionality immediately following an event.

Structural Performance Levels

The following structural performance levels and their potential level of damages:

1. Collapse Prevention: The building suffers extensive damage in an earthquake, but remains standing, even if barely.
2. Life Safety: The building sustains substantial damage in an earthquake, but remains stable and with significant reserve capacity. Occupants have an opportunity to egress the structure. Nonstructural elements remain secured to the structure.
3. Immediate Occupancy: The building remains essentially elastic in an earthquake, with most or all of its strength and stiffness intact. The building can be occupied immediately after the earthquake, even though minor repairs may be necessary.
4. Operational: The building remains occupied and operational during an earthquake

Risk Category II was selected for this evaluation for which a BPOE of Life Safety Structural Performance is required.

Design Earthquake

Two earthquake levels or Basic Safety Earthquake (BSE) as defined in ASCE 41-13 for existing buildings - BSE-1E with a probability of 20% occurrence in 50 years or 225 years return period and BSE-2E with a probability of 5% occurrence in 50 years or 975 years return period. ASCE 41-13 also defines BSEs where it is desired for existing buildings to have Basic Performance Objective Equivalent to New Building Standards (BPON) – BSE-1N and BSE-2N.

For this potential rehabilitation, a Basis Safety Earthquake BSE-1E targeted for Life Safety Performance was selected because the age of the building and the shorter remaining useful life of the structure compared to a new building.

Findings

Figures 2 to 4 contain ASCE 41-13 Seismic Evaluation Summary and applicable Checklists. The following is a summary and discussion on Non-Compliant Elements, if building upgrade option is selected:

1. *Building Configuration*
   a. *TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension. (Commentary: Sec. A.2.2.7. Tier 2: Sec. 5.4.2.6)*

The contribution of shear forces in the shear walls due to torsion would probably be insignificant and can be resolved in Tier II Evaluation. This is more a localized effect, i.e. individual shear wall elements.

2. Foundation Configuration

a. OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than 0.6 S a. (Commentary: Sec. A.6.2.1. Tier 2: Sec. 5.4.3.3)

This Non-Compliant is isolated and applies only to the interior shear wall along Grid 49 and on Grid N. Tier II evaluation is required to clear this potential slenderness/overturning inadequacy.

3. Seismic-Force-Resisting System

a. SHEAR STRESS CHECK: The shear stress in the reinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 70 lb/in.2. (Commentary: Sec. A.3.2.4.1. Tier 2: Sec. 5.5.3.1.1)

b. SHEAR STRESS CHECK: The shear stress in the unreinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 30 lb/in.2 for clay units and 70 lb/in.2 for concrete units. Bays with openings greater than 25% of the wall area shall not be included in Aw of Eq. (4-9). (Commentary: Sec. A.3.2.5.1. Tier 2: Sec. 5.5.3.1.1

PROPOSED IMPROVEMENTS

Proposed improvements, within the building under consideration include:

1. Removal of sections and new windows of the interior CMU partition walls on the 2nd and 3rd floors to accommodate client space configurations.

   Since these infill CMU walls are load bearing and are shear walls removal CMU would be full height, between the floor slab and overhead concrete beam or joist soffit. The resulting opening would be reframed and reinforced as necessary to resist lateral seismic forces. This would be evaluated in Tier 2 when location and opening sizes are determined.

2. Removing the concrete railing around the light well opening on the 3rd floor plaza and forming a slab to filling the opening.

3. Removing the planter box and surrounding concrete railing on the 2nd floor plaza, and forming a slab to filling the opening.

   New floor framing would consist of formed cast in place concrete flat slab or slab and beams.

Proposed improvements outside the building include:

1. Modifying the shallow steam pipeline concrete chase (trench) on the sidewalk to accommodate emergency vehicle access. The top (lid) of the chase are in removable sections and serve as sidewalk. The lids may not be capable of supporting truck wheel load.
   A section of trench would be removed and replaced with a deeper precast concrete utility vault with an access hatch, rated for HS20 truck wheel load.

2. Possible egress from the building to the higher grounds to the west, adjacent to the existing ramps.

   There is a potential option of constructing an ADA compliant pedestrian bridge from the roof to the higher grounds to the west. This option would depend grade difference and accessibility considerations.

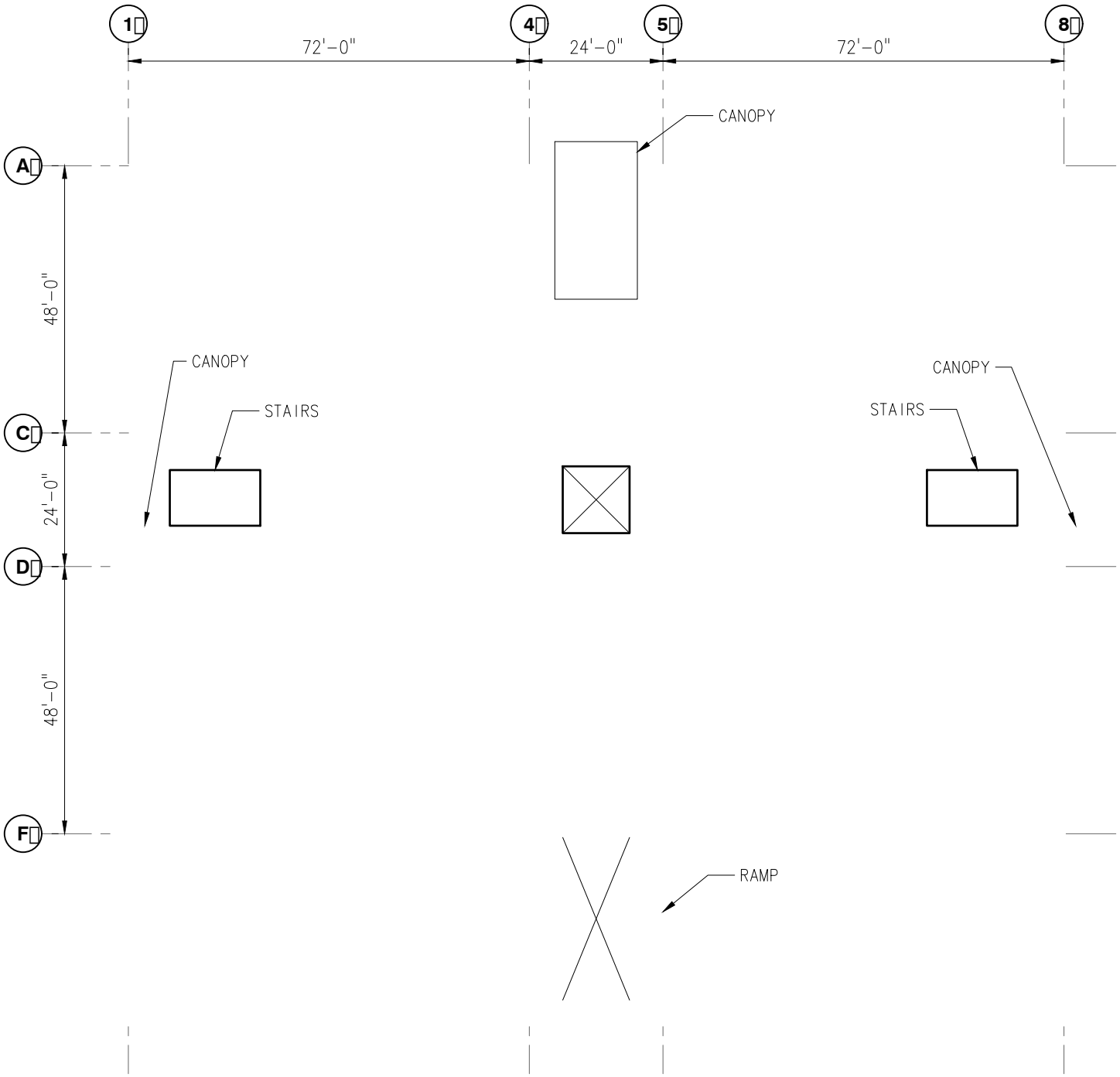


FIGURE 1

OVERALL BUILDING PLAN

FIGURE 2
ASCE 41-13 SUMMARY DATA SHEET
APPENDIX C
SUMMARY DATA SHEET

BUILDING DATA

Building Name: Fircrest School - Building 66 Apartments Date: July 2018

Building Address: 15230 15th Avenue NE, Shoreline, WA 98155

Latitude: 47.74038°N Longitude: 122.3105°W By: Ichiro Ikeda

Year Built: 1971 (Estimated) Year(s) Remodeled: Info. Not Avail. Original Design Code: UBC 1967 Edition

Area (sf): 19,000 (1st Floor) Length (ft): 122'-0" (E-W) Width (ft): 170'-0" (N-S)

No. of Stories: 3 Story Height: 11'-0" Total Height: 35'-0"

USE ☐ Industrial ☐ Office ☐ Warehouse ☐ Hospital ☐ Residential ☐ Educational ☒ Other: Nursing Facility

CONSTRUCTION DATA

Gravity Load Structural System: Reinforced concrete joist-slab, columns and CMU-in fill and bearing walls

Exterior Transverse Walls: 8" CMU with brick Openings? Yes

Exterior Longitudinal Walls: 8" CMU with brick Openings? Yes

Roof Materials/Framing: Built-up roofing over concrete joist-slabs

Intermediate Floors/Framing: Reinforced concrete joist-slab

Ground Floor: 5" thick reinforced concrete slab on ground

Columns: Concrete Foundation: Conc. stem walls and strip footings

General Condition of Structure: Good

Levels Below Grade? Existing grade at south face of building is at 2nd floor level.

Special Features and Comments: Wall at south face from 1st to 2nd level is 1'-1" thick concrete retaining wall.

LATERAL-FORCE-RESISTING SYSTEM

	Longitudinal	Transverse
System:	Reinforced masonry shear walls	Reinforced masonry shear walls
Vertical Elements:	Masonry walls and concrete columns	Masonry walls and concrete columns
Diaphragms:	3" thick concrete slabs	3" thick concrete slabs
Connections:	Slabs to walls and columns	Slabs to walls and clumns

EVALUATION DATA

BSE-1N Spectral Response Accelerations: S_{Ds} = _____ S_{D1} = _____

Soil Factors: Class = _____ F_a = _____ F_v = _____

BSE-1E Spectral Response Accelerations: S_{XS} = _____ S_{X1} = _____

Level of Seismicity: _____ Performance Level: _____

Building Period: T = _____

Spectral Acceleration: S_a = _____

Modification Factor: $C_mC_1C_2$ = _____ Building Weight: W = _____

Pseudo Lateral Force: V=

$C_mC_1C_2S_aW$= _____

BUILDING CLASSIFICATION: _____

REQUIRED TIER 1 CHECKLISTS	**Yes**	**No**
Basic Configuration Checklist	☒	☐
Building Type RM2 **Structural Checklist**	☒	☐
Nonstructural Component Checklist	☐	☒

FURTHER EVALUATION REQUIREMENT: 1) Shear stresses calculated using the Quick Check Procedure exceeds the limit stress of 70 lbs./in.^{2}

2) Shear stresses for 1st story walls due to torsional effects.

FIGURE 3
ASCE 41-13 CONFIGURATION CHECKLIST

Project: Fircrest Residential Habilitation Center Location: Fircrest, WA

Completed by: Ichiro Ikeda, Bright Engineering, Inc. Date: July 2018

16.1.2LS LIFE SAFETY BASIC CONFIGURATION CHECKLIST

Low Seismicity

Building System

General

(C) NC N/A U LOAD PATH: The structure shall contain a complete, well defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)

C NC (N/A) U ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 4% of the height of the shorter building. This statement shall not apply for the following building types: W1, W1a, and W2. (Commentary: Sec. A.2.1.2. Tier 2: Sec. 5.4.1.2)

C NC (N/A) U MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure. (Commentary: Sec. A.2.1.3. Tier 2: Sec. 5.4.1.3)

Building Configuration

(C) NC N/A U WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above. (Commentary: Sec. A2.2.2. Tier 2: Sec. 5.4.2.1)

(C) NC N/A U SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above. (Commentary: Sec. A.2.2.3. Tier 2: Sec. 5.4.2.2)

(C) NC N/A U VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation. (Commentary: Sec. A.2.2.4. Tier 2: Sec. 5.4.2.3)

(C) NC N/A U GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines. (Commentary: Sec. A.2.2.5. Tier 2: Sec. 5.4.2.4)

(C) NC N/A U MASS: There is no change in effective mass more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered. (Commentary: Sec. A.2.2.6. Tier 2: Sec. 5.4.2.5)

C (NC) N/A U TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension. (Commentary: Sec. A.2.2.7. Tier 2: Sec. 5.4.2.6)

Moderate Seismicity: Complete the Following Items in Addition to the Items for Low Seismicity.

Geologic Site Hazards

(C) NC N/A U LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance shall not exist in the foundation soils at depths within 50 ft under the building. (Commentary: Sec. A.6.1.1. Tier 2: 5.4.3.1)

C NC N/A (U) SLOPE FAILURE: The building site is sufficiently remote from potential earthquake-induced slope failures or rockfalls to be unaffected by such failures or is capable of accommodating any predicted movements without failure. (Commentary: Sec. A.6.1.2. Tier 2: 5.4.3.1)

(C) NC N/A U SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated. (Commentary: Sec. A.6.1.3. Tier 2: 5.4.3.1)

High Seismicity: Complete the Following Items in Addition to the Items for Low and Moderate Seismicity.

Foundation Configuration

C (NC) N/A U OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$. (Commentary: Sec. A.6.2.1. Tier 2: Sec. 5.4.3.3)

(C) NC N/A U TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C. (Commentary: Sec. A.6.2.2. Tier 2: Sec. 5.4.3.4)

FIGURE 4
ASCE 41-13 BUILDING TYPE C3 CHECKLIST

Project: Fircrest Residential Habilitation Center Location: Fircrest, WA

Completed by: Ichiro Ikeda, Bright Engineering, Inc. Date: July 2018

16.11LS LIFE SAFETY STRUCTURAL CHECKLIST FOR BUILDING TYPES C3: CONCRETE FRAMES WITH INFILL MASONRY SHEAR WALLS AND C3A: CONCRETE FRAMES WITH INFILL MASONRY SHEAR WALLS AND FLEXIBLE DIAPHRAGMS

Low and Moderate Seismicity

Seismic-Force-Resisting System

(C) NC N/A U REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)

C (NC) N/A U SHEAR STRESS CHECK: The shear stress in the reinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 70 lb/in.^{2}. (Commentary: Sec. A.3.2.4.1. Tier 2: Sec. 5.5.3.1.1)

C (NC) N/A U SHEAR STRESS CHECK: The shear stress in the unreinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 30 lb/in.^{2} for clay units and 70 lb/in.^{2} for concrete units. Bays with openings greater than 25% of the wall area shall not be included in A_w of Eq. (4-9). (Commentary: Sec. A.3.2.5.1. Tier 2: Sec. 5.5.3.1.1)

(C) NC N/A U INFILL WALL CONNECTIONS: Masonry is in full contact with frame. (Commentary: A.3.2.6.1. Tier 2: Sec. 5.5.3.5.1 and 5.5.3.5.3)

Connections

(C) NC N/A U TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of loads to the shear walls. (Commentary: Sec. A.5.2.1. Tier 2: Sec. 5.7.2)

(C) NC N/A U CONCRETE COLUMNS: All concrete columns are doweled into the foundation with a minimum of four bars. (Commentary: Sec. A.5.3.2. Tier 2: Sec. 5.7.3.1)

High Seismicity: Complete the Following Items in Addition to the Items for Low and Moderate Seismicity.

Seismic-Force-Resisting System

C NC N/A (U) DEFLECTION COMPATIBILITY: Secondary components have the shear capacity to develop the flexural strength of the components. (Commentary: Sec. A.3.1.6.2. Tier 2: Sec. 5.5.2.5.2)

C NC (N/A) U FLAT SLABS: Flat slabs or plates not part of the seismic-force-resisting system have continuous bottom steel through the column joints. (Commentary: Sec. A.3.1.6.3. Tier 2: Sec. 5.5.2.5.3)

C NC (N/A) U PROPORTIONS: The height-to-thickness ratio of the unreinforced infill walls at each story is less than 9. (Commentary: A.3.2.6.2. Tier 2: Sec. 5.5.3.1.2)

C NC (N/A) U CAVITY WALLS: The infill walls are not of cavity construction. (Commentary: Sec. A.3.2.6.3. Tier 2: Sec. 5.5.3.5.2)

(C) NC N/A U INFILL WALLS: The infill walls are continuous to the soffits of the frame beams and to the columns to either side. (Commentary: Sec. A.3.2.6.4. Tier 2: Sec. 5.5.3.5.3)

Connections

C NC (N/A) U UPLIFT AT PILE CAPS: Pile caps have top reinforcement, and piles are anchored to the pile caps. (Commentary: Sec. A.5.3.8. Tier 2: Sec. 5.7.3.5)

C NC (N/A) U STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. before engagement of the anchors. (Commentary: Sec. A.5.1.4. Tier 2: Sec. 5.7.1.2)

Diaphragms (Flexible or Stiff)

(C) NC N/A U DIAPHRAGM CONTINUITY: The diaphragms are not composed of split-level floors and do not have expansion joints. (Commentary: Sec. A.4.1.1. Tier 2: Sec. 5.6.1.1)

(C) NC N/A U OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)

(C) NC N/A U OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 8 ft long. (Commentary: Sec. A.4.1.6. Tier 2: Sec. 5.6.1.3)

Flexible Diaphragms

C NC (N/A) U CROSS TIES: There are continuous cross ties between diaphragm chords. (Commentary: Sec. A.4.1.2. Tier 2: Sec. 5.6.1.2)

C NC (N/A) U STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)

C NC (N/A) U SPANS: All wood diaphragms with spans greater than 24 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C NC (N/A) U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft and aspect ratios less than or equal to 4-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)

(C) NC N/A U OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)

BACKGROUND

Building 66 is a 3-story building constructed around 1971. The west side of the building's first floor is below grade and the exterior west concrete wall serves as a retaining wall. A series of ramps connect the 2nd and 3rd floors.

The building is constructed with cast-in-place concrete strip footings, slab on grade on the 1st floor, concrete pan joists and beams on the 2nd, 3rd floors and roof, and concrete columns. The concrete beams and columns system form space frames.

The exterior frames are infilled with brick cladding and CMU blocks and interior frames are infilled with CMU blocks (Photo 1). It is indicated on the existing drawings that the CMU walls are load bearing.

Photo 1 – East Elevation of Building

On the roof at the center of the building is a square opening that serves as a light well directly above the planters on the lower levels (Photos 2 and 3).

Photo 2 –
Courtyard with Planter at Level 2

Photo 3 –
Courtyard with Planter at Level 3

EXISTING CONDITION

Based on review of the existing drawings it appears that the only concrete walls other than the retaining walls are the stair shaft walls supporting the exterior landings. All CMU and brick wall types are shown only on the Architectural drawings and it is difficult to discern the wall types and their limits.

The structural drawings do not indicate the type of seismic load resisting system. The column sizes do not appear large enough nor are they heavily reinforced. Additionally, all CMU walls are connected with dowel bars to bordering concrete beams and columns or frame. Therefore, we have assumed that the CMU are shear walls. As a result the concrete

columns must have displacement compatibility with the CMU walls when resisting lateral seismic loads.

The building condition assessment and seismic evaluation included visual field observations of unconcealed structural elements and a review of the original drawings. No history or records of past building renovations or improvements are available for our review.

The existing building appears to be in general conformance with the original drawings. No visible signs of settlement, distress, spalls, exposed reinforcing bars, damage or deterioration were observed on the concrete, CMU or brick.

Based on our site observation and evaluation, it is our judgement that in general, this building is in good condition. We did not observe any exterior structural or non-structural components that may result in falling debris hazards during a seismic event. This conclusion does not guarantee the condition of the existing building construction or its future performance.

SEISMIC EVALUATION

Building 66 was evaluated using the Three-Tiered procedure outlined in the ASCE 41-13 Standards – Seismic Evaluation and Retrofit of Existing Buildings. The three tiers and their scope are:

Tier 1 – Screening: Structural inspection, review of existing drawings to ascertain well defined load path, identify deteriorations, defects, damages and potential deficiencies and completing a checklist to produce a deficiency list of Non-Compliant (NC) elements of structural systems and non-structural components. This is a quick check using simple analysis. Non-Compliant does not necessarily imply that the structure is unsafe but indicates that further and more detailed analysis is required to rule out the deficiencies noted.

Tier 2 – Deficiency-based Evaluation: A further evaluation of identified deficiencies in the Checklist in Tier 1. Elements that are still Non-Compliant or have unresolved noted deficiencies may indicate an inherent weakness in their ability to performance satisfactorily in a seismic event.

Tier 3 – Systematic Evaluation: Further evaluation and detailed analysis or more sophisticated analysis of elements not resolved in Tier 2 evaluation. This may involve the entire building. These items would be subject to retrofit or seismic upgrade. Site specific geotechnical seismic information will be required for use in these analyses.

Tier 1 – Screening was performed on structural elements for the purposes of this report. Tier 2 was beyond the scope of this project.

Performance Objective

ASCE 41-13 seismic evaluation process is required to be conducted with defined performance objectives consisting of Basic Performance Objective for Existing Buildings (BPOE) that varies with the Performance Objective and is defined in ASCE41-13, and Seismic Hazard Levels as defined in the International Building Code (IBC) for different Risk Categories. It should be noted that it is up to the owner of the building or facility to decide what performance level is desired.

Performance Objective is targeted to Building Performance Levels as it relates to Seismic Hazard Level.

Risk Category

Risk Category is based on the use or occupancy of the building, and they are:

Risk Category I – Buildings that present a low risk to human life in the event of failure.

Risk Category II – Buildings not listed in Risk Categories I, II and IV.

Risk Category III – Buildings with potential to cause substantial impact and/or mass disruption to day-to-day civilian life in the event of failure.

Risk Category IV – Essential facilities required to maintain functionality immediately following an event.

Structural Performance Levels

The following structural performance levels and their potential level of damages:

1. Collapse Prevention: The building suffers extensive damage in an earthquake, but remains standing, even if barely.
2. Life Safety: The building sustains substantial damage in an earthquake, but remains stable and with significant reserve capacity. Occupants have an opportunity to egress the structure. Nonstructural elements remain secured to the structure.
3. Immediate Occupancy: The building remains essentially elastic in an earthquake, with most or all of its strength and stiffness intact. The building can be occupied immediately after the earthquake, even though minor repairs may be necessary.
4. Operational: The building remains occupied and operational during an earthquake

Risk Category II was selected for this evaluation for which a BPOE of Life Safety Structural Performance is required.

Design Earthquake

Two earthquake levels or Basic Safety Earthquake (BSE) as defined in ASCE 41-13 for existing buildings - BSE-1E with a probability of 20% occurrence in 50 years or 225 years return period and BSE-2E with a probability of 5% occurrence in 50 years or 975 years return period. ASCE 41-13 also defines BSEs where it is desired for existing buildings to have Basic Performance Objective Equivalent to New Building Standards (BPON) – BSE-1N and BSE-2N.

For this potential rehabilitation, a Basis Safety Earthquake BSE-1E targeted for Life Safety Performance was selected because the age of the building and the shorter remaining useful life of the structure compared to a new building.

Findings

Figures 2 to 4 contain ASCE 41-13 Seismic Evaluation Summary and applicable Checklists. The following is a summary and discussion on Non-Compliant Elements, if building upgrade option is selected:

1. *Building Configuration*
   a. *TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension. (Commentary: Sec. A.2.2.7. Tier 2: Sec. 5.4.2.6)*

The contribution of shear forces in the shear walls due to torsion would probably be insignificant and can be resolved in Tier II Evaluation. This is more a localized effect, i.e. individual shear wall elements.

2. Foundation Configuration

a. OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than 0.6 S a. (Commentary: Sec. A.6.2.1. Tier 2: Sec. 5.4.3.3)

This Non-Compliant is isolated and applies only to the interior shear wall along Grid 49 and on Grid N. Tier II evaluation is required to clear this potential slenderness/overturning inadequacy.

3. Seismic-Force-Resisting System

a. SHEAR STRESS CHECK: The shear stress in the reinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 70 lb/in.2. (Commentary: Sec. A.3.2.4.1. Tier 2: Sec. 5.5.3.1.1)

b. SHEAR STRESS CHECK: The shear stress in the unreinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 30 lb/in.2 for clay units and 70 lb/in.2 for concrete units. Bays with openings greater than 25% of the wall area shall not be included in Aw of Eq. (4-9). (Commentary: Sec. A.3.2.5.1. Tier 2: Sec. 5.5.3.1.1

PROPOSED IMPROVEMENTS

Proposed improvements, within the building under consideration include:

1. Removal of sections and new windows of the interior CMU partition walls on the 2nd and 3rd floors to accommodate client space configurations.

   Since these infill CMU walls are load bearing and are shear walls removal CMU would be full height, between the floor slab and overhead concrete beam or joist soffit. The resulting opening would be reframed and reinforced as necessary to resist lateral seismic forces. This would be evaluated in Tier 2 when location and opening sizes are determined.

2. Removing the concrete railing around the light well opening on the 3rd floor plaza and forming a slab to filling the opening.

3. Removing the planter box and surrounding concrete railing on the 2nd floor plaza, and forming a slab to filling the opening.

   New floor framing would consist of formed cast in place concrete flat slab or slab and beams.

Proposed improvements outside the building include:

1. Modifying the shallow steam pipeline concrete chase (trench) on the sidewalk to accommodate emergency vehicle access. The top (lid) of the chase are in removable sections and serve as sidewalk. The lids may not be capable of supporting truck wheel load.
   A section of trench would be removed and replaced with a deeper precast concrete utility vault with an access hatch, rated for HS20 truck wheel load.

2. Possible egress from the building to the higher grounds to the west, adjacent to the existing ramps.

   There is a potential option of constructing an ADA compliant pedestrian bridge from the roof to the higher grounds to the west. This option would depend grade difference and accessibility considerations.

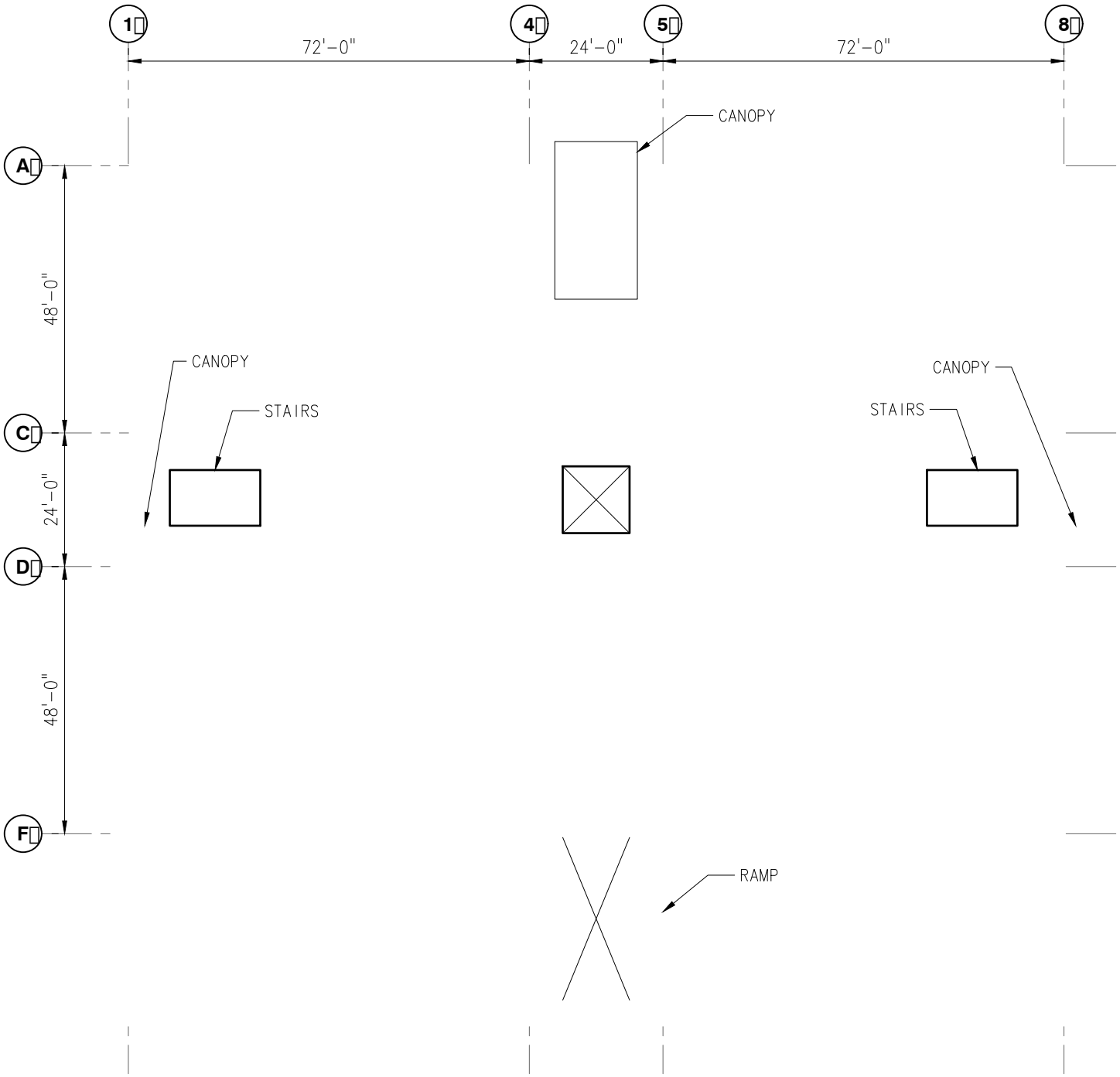


FIGURE 1

OVERALL BUILDING PLAN

FIGURE 2
ASCE 41-13 SUMMARY DATA SHEET

BUILDING DATA

Building Name: Fircrest School - Building 66 Apartments Date: July 2018

Building Address: 15230 15th Avenue NE, Shoreline, WA 98155

Latitude: 47.74038°N Longitude: 122.3105°W By: Ichiro Ikeda

Year Built: 1971 (Estimated) Year(s) Remodeled: Info. Not Avail. Original Design Code: UBC 1967 Edition

Area (sf): 19,000 (1st Floor) Length (ft): 122'-0" (E-W) Width (ft): 170'-0" (N-S)

No. of Stories: 3 Story Height: 11'-0" Total Height: 35'-0"

USE ☐ Industrial ☐ Office ☐ Warehouse ☐ Hospital ☐ Residential ☐ Educational ☒ Other: Nursing Facility

CONSTRUCTION DATA

Gravity Load Structural System: Reinforced concrete joist-slab, columns and CMU-in fill and bearing walls

Exterior Transverse Walls: 8" CMU with brick Openings? Yes

Exterior Longitudinal Walls: 8" CMU with brick Openings? Yes

Roof Materials/Framing: Built-up roofing over concrete joist-slabs

Intermediate Floors/Framing: Reinforced concrete joist-slab

Ground Floor: 5" thick reinforced concrete slab on ground

Columns: Concrete Foundation: Conc. stem walls and strip footings

General Condition of Structure: Good

Levels Below Grade? Existing grade at south face of building is at 2nd floor level.

Special Features and Comments: Wall at south face from 1st to 2nd level is 1'-1" thick concrete retaining wall.

LATERAL-FORCE-RESISTING SYSTEM

	Longitudinal	Transverse
System:	Reinforced masonry shear walls	Reinforced masonry shear walls
Vertical Elements:	Masonry walls and concrete columns	Masonry walls and concrete columns
Diaphragms:	3" thick concrete slabs	3" thick concrete slabs
Connections:	Slabs to walls and columns	Slabs to walls and clumns

EVALUATION DATA

BSE-1N Spectral Response Accelerations: S_{Ds} = _____ S_{D1} = _____

Soil Factors: Class = _____ F_a = _____ F_v = _____

BSE-1E Spectral Response Accelerations: S_{XS} = _____ S_{X1} = _____

Level of Seismicity: _____ Performance Level: _____

Building Period: T = _____

Spectral Acceleration: S_a = _____

Modification Factor: $C_m C_1 C_2$ = _____ Building Weight: W = _____

Pseudo Lateral Force: V=

$C_m C_1 C_2 S_a W$= _____

BUILDING CLASSIFICATION: _____

REQUIRED TIER 1 CHECKLISTS	**Yes**	**No**
Basic Configuration Checklist	☒	☐
Building Type RM2 **Structural Checklist**	☒	☐
Nonstructural Component Checklist	☐	☒

FURTHER EVALUATION REQUIREMENT: 1) Shear stresses calculated using the Quick Check Procedure exceeds the limit stress of 70 lbs./in.^{2}

2) Shear stresses for 1st story walls due to torsional effects.

FIGURE 3
ASCE 41-13 CONFIGURATION CHECKLIST

Project: Fircrest Residential Habilitation Center Location: Fircrest, WA

Completed by: Ichiro Ikeda, Bright Engineering, Inc. Date: July 2018

16.1.2LS LIFE SAFETY BASIC CONFIGURATION CHECKLIST

Low Seismicity

Building System

General

(C) NC N/A U LOAD PATH: The structure shall contain a complete, well defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)

C NC (N/A) U ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 4% of the height of the shorter building. This statement shall not apply for the following building types: W1, W1a, and W2. (Commentary: Sec. A.2.1.2. Tier 2: Sec. 5.4.1.2)

C NC (N/A) U MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure. (Commentary: Sec. A.2.1.3. Tier 2: Sec. 5.4.1.3)

Building Configuration

(C) NC N/A U WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above. (Commentary: Sec. A2.2.2. Tier 2: Sec. 5.4.2.1)

(C) NC N/A U SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above. (Commentary: Sec. A.2.2.3. Tier 2: Sec. 5.4.2.2)

(C) NC N/A U VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation. (Commentary: Sec. A.2.2.4. Tier 2: Sec. 5.4.2.3)

(C) NC N/A U GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines. (Commentary: Sec. A.2.2.5. Tier 2: Sec. 5.4.2.4)

(C) NC N/A U MASS: There is no change in effective mass more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered. (Commentary: Sec. A.2.2.6. Tier 2: Sec. 5.4.2.5)

C (NC) N/A U TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension. (Commentary: Sec. A.2.2.7. Tier 2: Sec. 5.4.2.6)

Moderate Seismicity: Complete the Following Items in Addition to the Items for Low Seismicity.

Geologic Site Hazards

(C) NC N/A U LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance shall not exist in the foundation soils at depths within 50 ft under the building. (Commentary: Sec. A.6.1.1. Tier 2: 5.4.3.1)

C NC N/A (U) SLOPE FAILURE: The building site is sufficiently remote from potential earthquake-induced slope failures or rockfalls to be unaffected by such failures or is capable of accommodating any predicted movements without failure. (Commentary: Sec. A.6.1.2. Tier 2: 5.4.3.1)

(C) NC N/A U SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated. (Commentary: Sec. A.6.1.3. Tier 2: 5.4.3.1)

High Seismicity: Complete the Following Items in Addition to the Items for Low and Moderate Seismicity.

Foundation Configuration

C (NC) N/A U OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$. (Commentary: Sec. A.6.2.1. Tier 2: Sec. 5.4.3.3)

(C) NC N/A U TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C. (Commentary: Sec. A.6.2.2. Tier 2: Sec. 5.4.3.4)

FIGURE 4
ASCE 41-13 BUILDING TYPE C3 CHECKLIST

Project: Fircrest Residential Habilitation Center Location: Fircrest, WA

Completed by: Ichiro Ikeda, Bright Engineering, Inc. Date: July 2018

16.11LS LIFE SAFETY STRUCTURAL CHECKLIST FOR BUILDING TYPES C3: CONCRETE FRAMES WITH INFILL MASONRY SHEAR WALLS AND C3A: CONCRETE FRAMES WITH INFILL MASONRY SHEAR WALLS AND FLEXIBLE DIAPHRAGMS

Low and Moderate Seismicity

Seismic-Force-Resisting System

(C) NC N/A U REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)

C (NC) N/A U SHEAR STRESS CHECK: The shear stress in the reinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 70 lb/in.^{2}. (Commentary: Sec. A.3.2.4.1. Tier 2: Sec. 5.5.3.1.1)

C (NC) N/A U SHEAR STRESS CHECK: The shear stress in the unreinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 30 lb/in.^{2} for clay units and 70 lb/in.^{2} for concrete units. Bays with openings greater than 25% of the wall area shall not be included in A_w of Eq. (4-9). (Commentary: Sec. A.3.2.5.1. Tier 2: Sec. 5.5.3.1.1)

(C) NC N/A U INFILL WALL CONNECTIONS: Masonry is in full contact with frame. (Commentary: A.3.2.6.1. Tier 2: Sec. 5.5.3.5.1 and 5.5.3.5.3)

Connections

(C) NC N/A U TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of loads to the shear walls. (Commentary: Sec. A.5.2.1. Tier 2: Sec. 5.7.2)

(C) NC N/A U CONCRETE COLUMNS: All concrete columns are doweled into the foundation with a minimum of four bars. (Commentary: Sec. A.5.3.2. Tier 2: Sec. 5.7.3.1)

High Seismicity: Complete the Following Items in Addition to the Items for Low and Moderate Seismicity.

Seismic-Force-Resisting System

C NC N/A (U) DEFLECTION COMPATIBILITY: Secondary components have the shear capacity to develop the flexural strength of the components. (Commentary: Sec. A.3.1.6.2. Tier 2: Sec. 5.5.2.5.2)

C NC (N/A) U FLAT SLABS: Flat slabs or plates not part of the seismic-force-resisting system have continuous bottom steel through the column joints. (Commentary: Sec. A.3.1.6.3. Tier 2: Sec. 5.5.2.5.3)

C NC (N/A) U PROPORTIONS: The height-to-thickness ratio of the unreinforced infill walls at each story is less than 9. (Commentary: A.3.2.6.2. Tier 2: Sec. 5.5.3.1.2)

C NC (N/A) U CAVITY WALLS: The infill walls are not of cavity construction. (Commentary: Sec. A.3.2.6.3. Tier 2: Sec. 5.5.3.5.2)

(C) NC N/A U INFILL WALLS: The infill walls are continuous to the soffits of the frame beams and to the columns to either side. (Commentary: Sec. A.3.2.6.4. Tier 2: Sec. 5.5.3.5.3)

Connections

C NC (N/A) U UPLIFT AT PILE CAPS: Pile caps have top reinforcement, and piles are anchored to the pile caps. (Commentary: Sec. A.5.3.8. Tier 2: Sec. 5.7.3.5)

C NC (N/A) U STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. before engagement of the anchors. (Commentary: Sec. A.5.1.4. Tier 2: Sec. 5.7.1.2)

Diaphragms (Flexible or Stiff)

(C) NC N/A U DIAPHRAGM CONTINUITY: The diaphragms are not composed of split-level floors and do not have expansion joints. (Commentary: Sec. A.4.1.1. Tier 2: Sec. 5.6.1.1)

(C) NC N/A U OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)

(C) NC N/A U OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 8 ft long. (Commentary: Sec. A.4.1.6. Tier 2: Sec. 5.6.1.3)

Flexible Diaphragms

C NC (N/A) U CROSS TIES: There are continuous cross ties between diaphragm chords. (Commentary: Sec. A.4.1.2. Tier 2: Sec. 5.6.1.2)

C NC (N/A) U STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)

C NC (N/A) U SPANS: All wood diaphragms with spans greater than 24 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C NC (N/A) U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft and aspect ratios less than or equal to 4-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)

(C) NC N/A U OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)

APPENDIX H - FIRCREST EXISTING CONDITIONS TECHNICAL REPORTS

EXISTING CIVIL CONDITIONS

Site Topography and Soils (General)

The Fircrest property generally slopes downward from an elevation of 413 at the northwest corner of the campus toward the southwest and southeast corners with elevations of 331 and 334 respectively. Existing slopes on the campus vary widely with steeper grades between the upper northwest plateau and the lower southwest and southeast corners of the site.

Based on other projects in proximity to the Fircrest Campus, soils on the campus are expected to generally be glacial till. Glacial till is a very dense, silty sand with gravel. Areas of fill should be expected and planned for as the campus has had previous earthwork activities historically as part of previous development.

A geotechnical engineering report was prepared for the Newborn Screening Wing Addition in 2016. This site location is on the southerly portion of the campus. According to the geotechnical report, soils are described as areas of existing fill above glacial till. Which is consistent with soil conditions on nearby projects

Ground water was encountered in the geotechnical borings at a depth of 6 and 10 feet below the ground surface. This ground water is expected to be perched above the the low-permeability glacial till.

Storm Drainage Systems (General)

Drainage on the Fircrest Campus is reasonably controlled with a network of catch basins and underground pipes. Many existing building roof downspouts are connected to the campus storm system.

According to GIS and limited survey documents the existing storm conveyance system for the campus generally drains from north to south and varies from 6 inch to 18 inch diameter and generally increases in size extending southerly.

Storm drainage for the upper (NW and West) portions of the campus are collected by a series of catch basins and pipes pf various sizes that drain to the storm system in 15th Avenue just south of the driveway to the Activity Building.

Storm drainage for the southerly laboratory buildings drain both westerly and easterly to either 15th Avenue or the Fircrest storm system.

Campus staff has stated that they are not aware of significant capacity problems.

The Hamlin Creek Stream tributaries enter the campus from the north at two locations. One location is at the northeast corner of the campus at the bottom of the slope extending upward toward Shorecrest High School. This tributary enters the campus as a narrow swale, continuing for approximately 1,100 feet where it enters a 30 inch culvert.. From this point it continues as a piped system to approximately 1,200 feet to the city storm system in NE 150th Street.

The second location enters the site generally aligned with the main paved access road (Circle Drive) and continues southerly through the campus where it joines the east tributary roughly roughly 300 feet west of the NE corner.

These piped tributaries join together near the southeast corner of the campus approximately 150 feet north of NE 150th Street.

According to City of Shoreline critical areas ordinance, the Fircrest Campus portion of the Hamlin Creek Stream is considered a "Piped Stream Segment." Buffer widths for Piped Stream Segments vary widely (10 feet min. for piped) depending on the stream type. Typing the Fircrest portion of Hamlin Creek Stream is ongoing as part of the ongoing Master Planning effort and it is possible that if the stream is determined to be Type Ns or Np the buffer could be 45 feet or 65 feet respectively.

Hamlin Creek discharges into Thornton Creek roughly 1.1 miles downstream. Thornton Creek then discharges to Lake Washington. The site is thus included in the Thornton Creek watershed basin. Per City of Seattle Critical Area Maps, Thornton Creek is a riparian corridor.

Water Systems (General)

The water system on the Fircrest property is a private Class A system. This was confirmed with North City Water District.

The Water District is not involved with the Fircrest water system except for where the system connects to the Water District systems on 15th Avenue and 150th Street.

A normally closed water main presumed to be 8 inch diameter extends from the Shorecrest High School property and connects to the Fircrest system near the southeast corner of the ATP Building. The Water District has stated that this normally closed main was temporarily opened to improve the fire fighting for the Laundry Building.

The existing water main in 15th Avenue is 12-inch diameter and connects to Fircrest with an 8-inch meter. The existing water main in 150th Street is 8-inch diameter and connects to Fircrest with a 6-inch meter.

On the Fircrest property, fire hydrant flow is known to be poor and water mains are likely 8-inch diameter or less in some locations. Static water pressure is estimated to be on the order of 65 PSI.

The Water District has stated that there have been several past discussions with the State to improve the water system to meet District standards and transfer ownership to the Water District. This transfer of ownership would likely require upsizing the existing mains and constructing new water storage tanks at the NW corner of the property for fire flow.

Sanitary Sewer Systems (General)

Sanitary sewer mains on the Fircrest Campus are owned and maintained by Ronald Wastewater District. City of Shoreline is in the process of taking over Ronald Wastewater District.

Sanitary sewer for the Activity Building exits the building on the west side and extends south and west for approximately 700 feet where it connects to the sewer within 15th Street.

The easterly sanitary sewer main extends north from 150th Street onto the campus at the SE corner of the campus as a 15 inch diameter main. At approximately 250 feet feet north of 150th Street the sewer turns west to Circle Drive where it turns north and follows the paved drive north prpoerty line. This sewer main serves all buildings except for the Activity Building and portions of the southerly Laboratory Buildings which have sewer services that extend west and east.

Madrona Site

The Madrona site located south of the Aspen and Birch "Y" Buildings. This site consists of two levels with the northerly level being approximately 5 feet higher than the southerly level.

The northerly level previously contained a building that has been demolished and according to Fircrest staff, the easterly 1/3 of the building area still contains concrete foundations and possibly hazardous meterials such as asbestos containing materials. Our understanding is that the building area was backfilled with uncontrolled fill. The southerly (lower) level was formerly a tennis court and is currently concrete surfaced.

Storm drainage in this area include a series of catch basins and pipes that drain westerly and southerly eventually connecting to the city system in NE 150th Street.

An 8 inch water main exists around the perimeter of the northerly level with hydrants. The 8 inch water main extents southerly along the west edge of the southerly (lower) level toward the activity Builidng.

Records indicate that sanitary sewer of unknown size divides the north (upper) and south (lower) areas flowing east toward the Chapel Building.

Records indicate that steam supply are located along the west edge of the area. Gas supply runs along the east side of the north portion of the site and through the center of the south portion of the site.

Building 66 Site

The Building 66 site is located southeast of the Activity Building at the lower level of a roughly 30 foot steep slope. Pedestrian access from the west is with a series of concrete ramps and/or stairs.

An 8 inch diamter water main extends to the building area following the paved access from the south. The water main continues along the west side of the building continuing north toward Building 500. Fire hydrants are located near at the southwest and northwest corners of the building.

Records show that sanitary sewer of an unknown size is located approximately 140 feet north of the building. This sewer flows easterly to the sewer within Circle Drive.

Storm drainage is conveyed southeast in existing seriews of catch basins and pipes. Storm drainage eventually connects to the city system in NE 150th Street.

Steam utilities are located on the south and west sides of the building. The steam utility is within a concrete tunnel with removable lids that are at the surface and used as pedestrian walks. These lids are not traffic rated and will require relocation or other improvements to allow for fire truck access to the building.

ATP Site

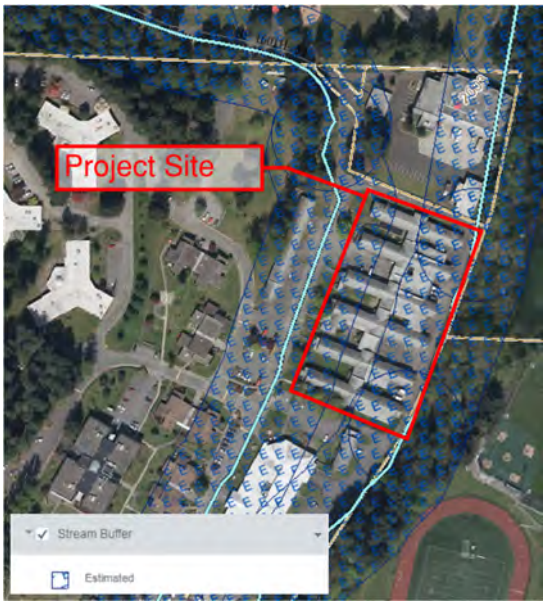
The ATP site is located northeast corner of the campus at the existing ATP building. The site is relatively flat with roughly 5 feet of fall across the site. Soils are assumed to be Glacial Till with some existing fill from previous construction. Shallow groundwater will require dewatering during construction and shallow storm drainage systems.

Two tributaries of Hamlin Creek drain from the northeast south towards NE 150th Street. The creeks are listed on the City's interactive map as a critical area with approximated buffers that expand the majority of the site

(see screenshot below). Storm drainage is collected and conveyed in a series of existing catch basins and pipes to the west and conveyed south to NE 150th Street.

An 8 inch water main exists to the west of the building. Records indicate that sanitary sewer of an unkown size is also located west of the existing building.

Existing gas is located to the south of the existing building.



Estimated Stream Buffer at the ATP Site as shown in City of Shoreline's interactive maps.

EXISTING MECHANICAL CONDITIONS

EXISTING CONDITION

Steam Plant

There are four high pressure steam (HPS) boilers in the existing Steam Plant Building and one of them is abandoned in place. The Steam Plant is located on the east side of the campus. Three boilers generate 120 psi HPS and distribute to the entire campus through the underground piping utility duct bank system. The utility duct back is constructed of concrete with removable concrete cover for piping access. The utility duct bank is not rated for vehicles. One of the three active boilers is dedicated for Summer load and rated for approximately 8,000 lb./hour. The next boiler is dedicated for Spring and rated for approximately 15,000 lb./hour. The third boiler is for Winter use and rated for approximately 20,000 lb./hour. The abandoned boiler is an original boiler and is disconnected and not in use.

All boilers have dual fuel burners, natural gas is a primary energy source and No. 2 diesel fuel oil is a backup fuel source. Under normal operation, the boilers use natural gas and during alternate fuel source operation, the boilers use No. 2 diesel fuel oil. The fuel oil is fed from the above ground 22,500-gallon fuel oil tank. The tank is setup such that the first 17,500 gallons can be used for the heating boilers and the emergency generator which is located in the Steam Plan. Once the fuel level reaches down to 5,000 gallons, the fuel oil will be sent to the generator only. Based on the discussion with the plant operator, the Winter boiler has sufficient capacity to support the entire campus heating requirements. The Winter boiler burner is rated at 180 gallons per hour and based on the initial assessment, the fuel oil tank has sufficient capacity to support minimum of 96 hours of the campus heating requirements when the initial 17,500-gallon fuel oil is used for the boiler only. If the initial 17,500 gallons is used for both the generator and the boiler simultaneously, it may not have sufficient capacity for 96 hours of operation.

Existing Summer Boiler

Existing Spring Boiler

Existing Summer Boiler

Disconnected Abandoned Boiler

The boiler makeup water feed pump set has been replaced in the recent year with triplex Grundfos multi-stage pump set with VFD controllers to provide energy efficient and trouble-free operation.

The steam condensate is returned from each building to the Steam Plan by the condensate pump set located in each building.

Existing Boiler Feed Pump Set

Emergency Generator

There is one emergency generator in the Steam Plant Building, located east of the campus. The generator is fed with No. 2 diesel fuel oil from the 22,500-gallon above ground fuel oil tank. The fuel oil tank feeds fuel oil to the boilers as well. Based on the initial assessment, there is sufficient fuel capacity to run generators at 100% capacity for 96 hours.

Existing Generators

Birch Building and Other Y-Buildings

Six Y-Buildings including Birch building are located at the northwest corner of the campus and are single-story buildings with partial basements. The buildings were built in the 1960's. There have not been any renovations in the Y-Buildings, except Birch Building which had recent renovation to install new ventilation system, heating boiler, domestic hot water heater, and sprinkler system. Heating is provided by a natural gas fired, condensing type, high efficiency heating boiler producing hot water. Cooling is provided by an air-cooled chiller on grade located on the north side of Birch building. Hot & chilled water is circulated through AHU's to provide conditioned air to the building through under floor air passages. There are seven AHU's to provide temperature zoning in the building. Domestic hot water is produced by a natural gas fired, condensing type, high efficiency hot water heater. All equipment, except air cooled chiller are located in the basement mechanical room.

Based on the discussion with the facility's personnel, Y-Buildings do not have good

temperature control for the heating system and appeared to be under sized. Y-Buildings, except Birch Building, cooling is provided by the window air conditioning units and they are not adequate. There have been ongoing rain leader piping failures and leaks that need to be repaired. The facilities also have expressed the desire to have proper service accesses to the mechanical equipment, i.e. in Birch Building, AHU piping is blocking the AHU service areas sections creating tight service access.

Birch Bldg. Air Cooled Chiller

Birch Bldg. Air Handling Units

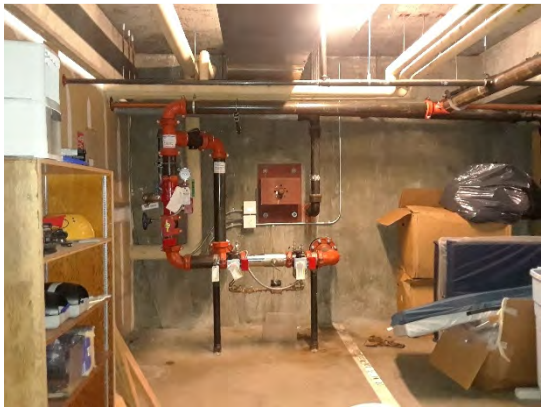
The waste piping is original to the building and 50 years old. The waste piping runs below the floor slab and through the underfloor ventilation air passages. Some of the piping has corroded and is leaking the waste water below the floor slab. Based on the discussion with the facility, Building 58 (one of the Y- Buildings) is closed due to waste piping leakage. In Birch building, the portion of the waste piping was repaired by access through the floor slab.

Birch Bldg. Dom Hot Water Heater & Heating Boiler

Birch Bldg. Corroded Waste Piping and Piece of Floor Slab

4" sprinkler water and 2" domestic cold water services enter the Birch Building basement mechanical room and distribute through the building. Based on the discussion with the

facility, the pressure and the capacity of the site water distribution system has an issue and the development of a site water tank to supplement the capacity has been discussed.



Birch Bldg. Sprinkler System

Birch Bldg. Domestic Cold Water Service

The original local control system provides control to the existing Y-Buildings. Birch Building's original control system has been replaced by Siemens Direct Digital Control (DDC) system when the building was renovated.

All Y-Buildings' heating system and domestic hot water heater, except Birch Building, are original to the building and are beyond their expected useful service life.

ATP Building

ATP building will be demolished in its entirety if the site is used for the new building. The building uses high pressure steam from the campus steam distribution and reduces to low pressure steam in the mechanical room. The low pressure steam is distributed through the underfloor piping to each room for heating. Based on the discussion with the facility's personnel, this type of heating system does not provide good temperature control for the occupants.

The building has an underfloor sprinkler system for wood structure protection. The piping is located in the unconditioned space and the sprinkler is a dry system. However, due to the difficulty of draining water from the pipe, which was used for the testing of the system, it has had pipe freezing issues in the past.

The ventilation air handling units serving each wing are original and beyond their expected useful service life. One of the units in the wing cannot be repaired and it's not in operation.

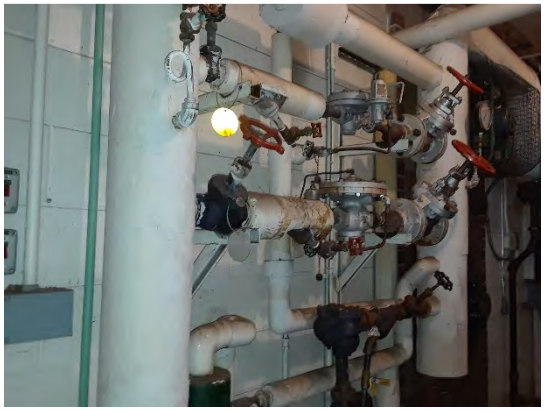
Building 66

The building was originally built in 1970. The building is located in the middle of the campus and is a three-story building. Part of the first floor west exposure is under grade.

3" HPS and 1-1/2" steam condensate return piping from the site utility, underground piping duct bank. enter the building at first floor mechanical room. HPS is reduced to low pressure steam through the steam pressure reducing station and used to produce heating water and the domestic hot water. Heating water is distributed through each floor through 4 risers and each riser is serving a quadrant section of the building. Domestic cold water enters the first floor mechanical room from the south and

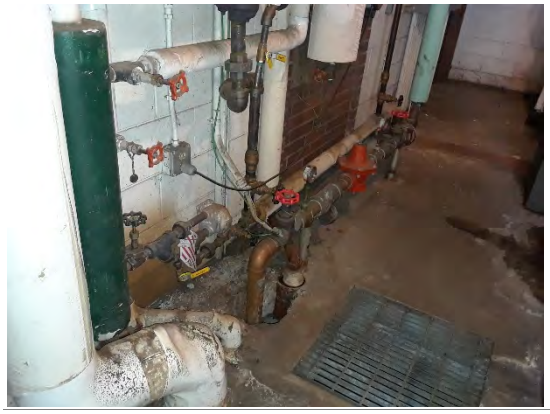
distribute through 4 risers with domestic hot water to serve each quadrant of the building toilet rooms.

The building does not have sprinkler water service and the entire building is not sprinklered.



Steam Pressure Reducing Station

Heating Steam HX



Dom CW Service

Dom Hot Water Heater

The Ventilation heating unit was designed to serve each quadrant section of each floor, total of four units per floor. The unit is located in the closet outside of each apartment section. The unit is heating and ventilation only and there is no cooling. The supply air duct is distributed through the ceiling space and return air is returned to the unit using underfloor ductwork. All control in the building is original and local control. There is no direct digital control system in the building. The units are original to the building and 48 years old and are beyond their expected useful service life.

Ventilation Heating Unit

EXISTING ELECTRICAL CONDITIONS

ELECTRICAL CODE ANALYSIS

2017 National Electric Code (NFPA 70)

2018 FGI Guidelines for Design and Construction of Residential Health Care, and Support Facilities.

2015 Health Care Facilities Code (NFPA 99)

2012 Life Safety Code (NFPA 101)

EXISTING ELECTRICAL CONDITIONS

General

Fircrest School is an 82 acre campus with over 40 buildings serving approximately 200 developmentally challenged persons and almost 700 staff.

Electrical Service

Electrical Service is provided by Seattle City Light entering the campus at the Northwest corner of the property on 15th Ave. NE terminating into a 2500 kVA sub-station transformer adjacent to the street. This provides service to both the Fircrest School campus and the Department of Health Public Health Lab.

There is a project in design that will change the location of the incoming Seattle City Light service to come from the corner of NE 150th St. and 20th Ave. NE and will separate the Department of Health Public Health Lab electric service from the Fircrest School service.

Service voltage to the Campus is provided at 4,160 volts and distributed underground to all buildings on campus. All buildings have oil filled outdoor transformers delivering power to the buildings at distribution voltages of 120/208 or 277/480. The transformers vary in age from the early 1970's to the late 1980's and are approaching end of life. Campus medium voltage feeders are old and have begun to fail in certain conditions.

A project is in design that will replace all aging medium voltage feeders on campus.

Standby Power

The Campus is served by one (1) 565 kW Caterpillar standby generator and fuel is provided from a 22,000 gallon diesel tank with a 5000 gallon allotment reserved for the generator. The transfer switch equipment is reported to be problematic and failing.

The generator supplies standby power to the campus feeding partial power to the buildings across the Campus.

A project is in design that will provide a new 1000 kW generator and transfer equipment to replace the existing generator and transfer equipment.

Neither the existing system nor the new design system for Standby Power will meet NEC 700 requirements for emergency power, therefore new egress lighting, exit lighting, some communications systems and fire alarm systems will require a new emergency power system.

The existing system for Standby power and the new design for the Standby power system will meet NEC 702 requirements for Optional Standby Power but it does not meet 2017 NEC 517 requirements for Essential Electrical Systems for Nursing Homes and Limited Care Facilites.

The Nursing Home buildings (Y-buildings) have an indoor mounted KATO 133 kW emergency power generator installed in the mid 1970's and appears to be at its end of useful life.

An existing indoor 250 kW Caterpillar generator and transfer equipment provides emergency power to the Activities Building (Bldg 27).

The Administration Building (Bldg 65) is provided Standby Power by an outdoor mounted 200 kW Kohler Generator with indoor mounted transfer equipment.

Assuming a new Nursing Home facility will have clients that may need to be sustained by electrical life support, NEC 517 will require (3) three branches of emergency power with power served by a generator or fuel cells. A generator specific to the facility will be required.

Lighting

Existing lighting on the campus consists primarily of older lighting fixtures either incandescent style ceiling mounted fixture re-lamped to fluorescent or fluorescent linear fixtures. Though well maintained, most would not meet the standards or criteria required by the 2015 Washington State Energy Code.

As fixtures require replacement, they are replaced with LED style light fixtures.

Egress and exit lighting fixtures are provided using unitary battery equipment.

Site lighting fixtures are using LED lamps in the central core area with a few fixtures at the edges of the campus still using metal halide or high pressure sodium lamps. Site lighting fixtures appear old and approaching end of life.

Lighting control in the buildings' is accomplished using local switching. It appears occupancy sensors are in minimal use. Site lighting is controlled using photocells and timeclocks distributed across campus.

Power Distribution

Individual building power panels serve lighting, receptacles, HVAC connections, kitchen equipment connections and miscellaneous equipment connections. Most panels appear to be older equipment, some by manufacturers no longer in business, making replacement parts difficult to obtain. It is unlikely these panels will meet current code requirements for wire bending space and separation. It is also likely many of the circuit breakers have not undergone periodic exercising and will likely no longer function to the manufacturers listed specifications.

Telecommunications

Campus telecommunications main distribution facility (MDF) is located mid campus in the 200 Building (Bldg 66). A Telecommunications IDF facility is located south of the Aspen building in a small wooden shed. A Fiber distribution loop serves the entire campus for Fire Alarm, Phone, Data and the Energy Management system. It is reported the fiber network is at capacity with no spare capacity available.

Most local data cabling appears to be using Cat 5e cables.

Fire Alarm

The Fire alarm system consists of local fire alarm panels in each separate building reporting back to a central campus panel located in the Administration building (Bldg 65). The sysem is reported to be a Siemen's Pyrotronics system with a few older local Notifier and Edwards panels reporting back to the central station. The fire alarm system was completed in 2002.

Typical building systems include area smoke detection in portions but not all of the buildings and fire alarm pull stations at selected exit doors. Fire alarm horn/strobes

provide notification of alarms throughout the buildings.

Security

Security is reported to include some intrusion detection, card readers for access control and security cameras.

Intrusion Detection is provided in buildings not occupied 24/7. These systems use an IP address to report back to the Duty Office.

Access control is provided using card readers to access the Pharmacy.

A few security video cameras are in use, all are standalone systems.

Nurse Call

Nurse Call is being used in the Y-Building Nursing Homes. The system is manufactured by Nurse Call NW and is a wireless system installed in 2007.

200 Building (Bldg 66)

Normal power electric service to the building is served from a 225 kVA outdoor pad mount transformer with underground feeders to an indoor switchboard located at the south end of the ground floor. The electrical system is split into 4 quadrants on each floor and each quadrant has an electrical closet to house panels, and other equipment such data/voice and fire alarm. Normal power is distributed to each floor through the panels in these quadrants.

Standby power is served from a 25 kVA outdoor pad mount transformer with underground feeders serving a panel in the main electric room. This panel serves standby power loads throughout the building.

Emergency lighting is provided by batteries.

Lighting throughout the building uses a mixture of florescent, metal halide and high-pressure sodium sources.

The campus main distribution facility (MDF) is located in this building. Telephone is distributed throughout the facility from this room. Data connections are limited inside the building.

Fire alarm was installed in 2002 throughout the building. Devices consist of smoke detectors, pull stations and horn/strobe notification appliances.

Security systems for intrusion detection, access control and security video have not been installed in the building.

Nurse call systems have not been installed in the building.

In general the electrical systems installed in this building will not be reusable for a Nursing Home conversion. The change of use to the building will require all systems to meet current codes. The electrical service will likely be too small, the emergency power systems are not code compliant for a Nursing Home use. Telecommunications devices will not be located convenient for the new use and they will not be able to accept todays technology. The fire alarm system will need to be upgraded. Security access control and security video will likely be wanted. Nurse call will be required.

ATP Building (Bldg 85-90)

Normal power electric service to the building is served from a 225 kVA outdoor pad mount transformer with underground feeders to (6) service entrance panels inside the building. These panels distribute power to each area of the building.

Standby power is not provided to the building.

Emergency lighting is provided by batteries.

Lighting throughout the building is accomplished using fluorescent lamps.

The building has a small telecom closet in the building. Telephone and data connections are distributed throughout the building from this closet.

Fire alarm was installed in 2002 throughout the building. Devices consist of smoke detectors, pull stations and horn/strobe notification appliances.

Security systems for intrusion detection, access control and security video have not been installed in the building.

Nurse call systems have not been installed in the building.

In general the electrical systems installed in this building will not be reusable for a Nursing Home conversion. The change of use to the building will require all systems to meet current codes. The electrical service is not code compliant with contemporary codes and is too small a service. Emergency power systems do not exist. Telecommunications devices will not be located convenient for the new use and they are not capable of accepting todays technology. The fire alarm system will need to be upgraded. Security access control and security video will likely be wanted. Nurse Call will be required.

Former Madrona Site

No electrical or low voltage services are present at the Madrona site.

Normal power is available across the road in front of the Aspen building however the medium voltage feeder is a radial feed and should be upgraded to a loop feed for reliability. This will require new pad mount switches at the Madrona site and additional feeders from approximately the dministration building (Bldg 65) to the Madrona site.

A small telecom IDF shed is located adjacent to the building location housing intermediate facilities for fiber, fire alarm, telephone and data. If this site is developed the shed will need to be incorporated into the new building.

Security systems for access control and security video will likely be wanted.

Nurse Call will be required.

BUILDING ENVELOPE

Building 66

The building envelope appears to be original, and currently does not meet WSEC envelope requirements. Vertical walls are masonary units with either exterior face brick with plaster or face brick interior. The roof surface was not inspected, drawings indicate only minimal rigid insulation on top of the concrete deck with built-up roofing. The concrete roof deck extends beyond the walls, and therefore acts a fin, radiating heat from the space below. Drawings indicate the foundation and below-grade walls are not insulated. Windows are single-pane glass or plexi-glass with metal frame. Doors are metal with metal frames. Currently the perimeter quardants of the building are open to an exterior courtyard, with a glazed roof structure overhead. The proposed rehab plan would enclose this space, shifting the exterior air/thermal boundary to only the perimeter walls. Despite the use of masonry and concrete walls/roof, building air leakage is likely significant through unsealed penetrations, windows, and doors.

Exterior Wall at Roof Overhang

Existing Walls/Glazing

To meet code, exterior insulation is recommended, as this covers intermediate floor edges and mitgates concern of condensation and/or freeze-thaw damage that can occure when adding insulation to the interior of masonry walls. The roof structure would require new or additional rigid insulation, and to make this insulation effective, the thermal control layer would need to wrap around the roof overhangs, and be integrated into the exterior wall insulation system. Extending the exterior wall insulation system down, below-grade for at least two feet would also address the foundation insulation requirements. Windows will require upgrade to have double-pane insulated glazing units and non-metal (fiberglass) or thermally broken metal frames. To meet the durability requirements, tempered laminated glass, or or possibly custom interior plexi-glass inserts may be required.

RENEWABLE ENERGY

The Fircrest School currently has no renewable energy systems. For cost and

simplicity, photovoltatic (PV) panels are likely the most common on-site renewable energy system used to achieve net-zero energy. For this reason, a qualitative assessment of each building site for photovoltaics was made during the site visit.

Building 66 (Alternate 1)

With the exception of trees on a rising slope to the west, the solar exposure of the existing building is good. Panels mounted on the south façade, either vertical or as window shades, would increase the available are array area, however, these solutions are generally much more expensive than roof mounted panels. The proposed 1-story addition to the north would generally have poor solar access primarily due to shading from the existing building, and then by trees to the west. Combined with the fact that the three story existing structure has less available roof area than a single-story structure, this alternate is believed to have the lowest available potential for annual energy generation using PV.

ACP/Laundry Building Sites (Alternate 2)

With the exception of trees on a rising slope to the east, the solar exposure of both the Alternate 2 sites is good. Of all of the possible building sites, the site on the south side of the Kitchen/Dining facility appears to have the most potential for PV energy generation.

Madrona Site (Alternate 3)

The Madrona site has mature evergreen trees to the north, east, and west, and even a few large trees in the middle of the building site that may need to remain. For this reason, low-slope roofs, oriented as much to the south as possible are recommended so PV panels can be mounted flush to the roof surface with minimal structure.

APPENDIX J - PREFERRED ALTERNATIVE TECHNICAL REPORTS

CIVIL ASSUMPTIONS

Storm Systems (General)

Storm drainage requirements for the Fircrest property are guided by the *2012 Stormwater Management Manual for Western Washington amended in 2014* as adopted by and ammended by the City of Shoreline. The City of Shoreline has mapped the Fircrest site within a basin that includes more than 40% impervious surface coverage before 1986. Development within this basin is required to match post-development stormwater durations to the pre-development stormwater durations for the existing surface coverage.

Flow control will typically be required for any vegetated area that is converted to impervious surface at an approximate rate of 28,000 CF per acre of new impervious surface. Any area that is impervious surface in the existing coniditions will not require additional volume for flow control. Flow control options include below grade concrete vaults, large diameter corrugated metal pipes, or plastic arch pipe surrounded in porous aggregate.

Onsite Stormwater Management is required for all new and replaced impervious surface. Onsite Stormwater Management typically consists of pervious pavement, bioretention cells, vegetated roofs, and rainwater harvesting. Typically bioretention cells are the preferred option as they can serve as both onsite stormwater mangement and water quality treatment as well as provide a reduction in flow control volume. Bioretention cells are required at a rate of 5% of impervious surfaces and 2% of pervious surfaces.

Water Quality for any surface runoff from pollution generating surfaces (road, parking lots, etc) are required to provide Enhanced Water Quality Treatment since the downstream system, Thornton Creek, is fish bearing. Examples of water quality treatment systems that meet the enhanced treament standard include bioretention cells, silva cells, or modular wetlands. Bioretention cells and silva cells should be provided at the same rate as Onsite Stormwater Management.

Water Systems (General)

The water system on the Fircrest property is a private Class A system. The Water District is not involved with the Fircrest water system except for where the system connects to the Water District systems on 15th Avenue and 150th Street.

It is anticipated that the existing 6 and 8 inch diamter water mains and hydrants on the campus will be replaced with roughly 7,000 linear feet of 12 inch diameter ductile iron pipe to allow the onsite water mains to be owned by North City Water District. Meters and/or backflow preventors are required at all domestic, irrigation and fire sprinkler services.

It is estimated that two water storage tanks for fire flow will be necessary at the NW corner of the property (highest elevation). It is unknown how large of tanks will be required until the water district performs hydraulic modeling to confirm the deficit of water required for fighting a fire. At this time, we recommend assuming a total of 300,000 gallons. Pumps and backflow preventors

will be required at the water service to the tanks. These tanks will be owned by North City Water District.

Steam Systems (General)

Existing steam is in proximity to all three of the studied alternaves for the new Skilled Nursing Building.

It has been determined that the use of steam for the new building will likely not be used due to the efficiency of the proposed mechanical and electrical systems.

Frontage Improvements (General)

Frontage improvements will likely be required as per the Master Plan. It is our understanding that the Master Plan will distribute the cost of frontage improvements evenly across the site for the planned growth. The Skilled Nursing Facility, no matter where it is located on the site, will likely be required to provide some value of the total required frontage improvements. We are estimating the value of frontage improvements to be the improvements from NE 155th Street to the NE property corner (roughly 1,350 linear feet). Frontage improvements will require the following:

- Removing the abandoned driveway,
- Replacing the existing driveway at NE 155th St,
- Grind and overlay to centerline of road,
- Replace curb and gutter,
- Provide 5.5 foot amenity zone (landscaping),
- 8 foot wide concrete sidewalk,
- Tree removal and replacement,
- and a 4 foot maximum retaining wall.

Madrona Site

The Madrona site is located south of the Aspen and Birch "Y" Buildings. This site consists of two levels with the northerly level being approximately 5 feet higher than the southerly level.

Earthwork

The northerly level previously contained a building that has been demolished and according to Fircrest staff, the easterly 1/3 of the building area still contains concrete foundations and possibly hazardous meterials such as asbestos containing materials (assumed 2 foot depth of possible contaminated material for 4,000 BCY). Our understanding is that the building area was backfilled with uncontrolled fill (assumed to be 2 feet under proposed building slab). The southerly (lower) level was formerly a tennis court and is currently concrete surfaced and will require demolition and filling with structural fill to create a uniform finished floor elevation. Estimated quanity of excavation and export of existing fill 6,500 BCY that may not be suitable for reuse onsite. Estimate quanity of earthwork for improvements is 30,000 BCY of excavation used onsite as fill (includes excavation for flow control vaults).

Storm

Proposed storm drainage will include a series of catch basins and pipes that will collect drainage from the proposed improvements and convey to flow control facilities. Flow control facilities will include three underground concrete detention vaults for a total of approximately 160,000 cubic feet of volume. Water quality treatment is required for all road and parking lot facilities and will include roughly 4,850 square feet of either bioretention or silva cells. All other impervious areas, including pedestrian and roof area, should have bioretention cells provided to the maximum extent feasible. Assuming that half the roof and pedestrian improvements have space feasible for accomodating bioretention cells, this equates to roughly 7,500 square feet of additional bioretention cells. If pervious pavement is considered for pedestrian improvements, it can be provided in lieu of 3,300 square feet of bioretention area. Vegetated roofs and rainwater harvesting will reduce the quantity of flow control and bioretention cells required; however, these systems tend not be as cost effective for the value of stormwater mitigation.

Water

It may be possible to construct the Skilled Nursing Facility without a full upgrade to the Fircrest water system. The existing system could be upgraded up to, and around, the proposed building, then a meter and backflow preventor could be placed between the new system and the existing system to provide adequate backflow prevention. For planning purposes, should assume three connections to the existing water system with backflow preventor and meters. Domestic and fire sprinkler services would connect to this new system.

Sewer

Records indicate that sanitary sewer of unknown size divides the north (upper) and south (lower) areas flowing east toward the Chapel Building.

Steam

Steam utilities are located on the west side of the proposed building area. The steam utility will require relocation to allow for the building.

Gas

New gas service will likely need to come from 15th Avenue as typically existing systems are unable to support proposed improvements. Gas will be designed and constructed by PSE with trenching and surface restoration by a contractor. Existing gas will need to be relocated to avoid the proposed building.

ASSUMPTIONS

The following narratives for each mechanical system are described by the following headings as follow:

- Mechanical Code Analysis
- Net Zero Energy Mechanical Systems
- New Construction Madrona Site
  - Net Zero Energy Equipment Sizes
- Laundry Building Mechanical Systems

MECHANICAL CODE ANALYSIS

Applicable codes and standards shall include, but not necessarily be limited to:

- 2018 FGI Guidelines for Design and Construction of Residential Health Care, and Support Facilities.
- 2015 Health Care Facilities Code (NFPA 99)
- 2015 Washington State Energy Code
- Uniform Plumbing Code, by International Association of Plumbing and Mechanical Officials.
- International Mechanical Code, by International Code Council.
- International Building Code, by International Code Council.
- Requirements of OSHA, EPA and WISHA.
- National Fire Protection Association Codes.
- ASME codes for boiler and pressure vessels.
- SMACNA HVAC Duct Construction Standards, latest edition.
- All local and state amendments.
- Requirements of all agencies have jurisdictional authority over installation of mechanical systems.

NET ZERO ENERGY MECHANICAL SYSTEMS

Fire Protection

Fire protection system will be a wet sprinkler system and will provide coverage to all spaces. The fire protection system will include the following, but not necessarily be limited to:

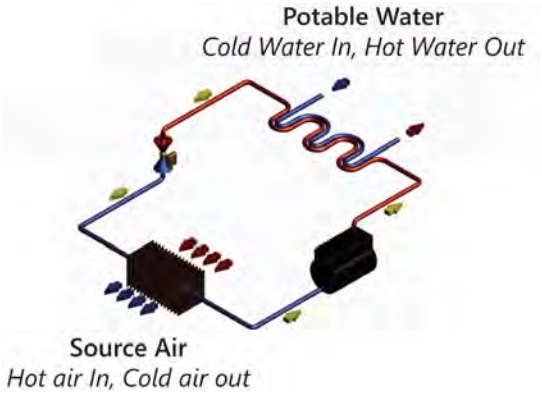
- Belowground fire service to building
- Backflow preventer (double check valve assembly)
- Wet sprinkler piping
- Wet pipe alarm check valve
- Fire Department inlet connection
- Supervisory (tamper) switches
- Water flow switches
- Zone control valves
- Isolation and check valves
- Inspector's test connection
- Sprinkler heads
- Seismic restraints
- In new construction, crawl space will not be sprinkled.

Plumbing System

Domestic cold water service to the building will be connected to the campus water distribution loop with water meter and backflow preventer at the building service connection. The backflow preventer will be installed in the mechanical room with floor drain.

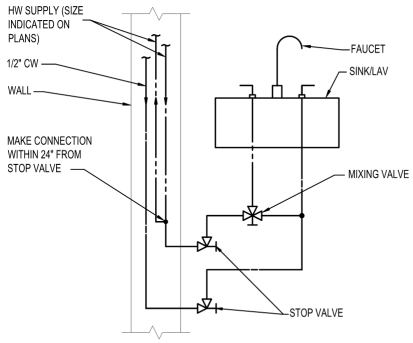
Domestic hot water system will be based on an air source heat pump water heater. The hot water heater will be similar to Colmac Waterheat model HPA7 Propeller Fan with hot water storage tank. The hot water will be circulated through the system by circulated pump to maintain constant temperature in the piping. The hot water heater will maintain minimum of 145 deg F to minimize the potential growth of

legionella and 125 deg F water will be distributed through the building through thermostatic mixing valve. 125 deg F hot water will be further reduced to 110 deg F at the sink by the local thermostatic mixing valve. The plumbing system will be designed to include the consideration of Legionella response per 2018 FGI Guideline Section A2.5-2.2.3. The hot water system will be connected to the adjacent hot water system to provide back up in the event of the hot water heater failure or the maintenance service shut down. The inter connecting piping will be normally closed and opened during backup.



Air Source Heat Pump Water Heater

Cold & Hot Water design will include consideration to minimize piping dead legs to prevent any growth within the piping system. In addition, hot water piping loop will be routed in the wall from the ceiling to plumbing fixture stop valve within 12 inches, so that each fixture will receive hot water immediately to minimize water waste. Each faucet will have laminar flow type low flow discharge tips (non-aerated). All hand washing sink including wall mounted lavatory will be selected without an over flow outlet.



1 SINK/LAVATORY TYPICAL PIPING CONNECTION DIAGRAM
SCALE: NONE

Hot water temperature to laundry washing machine will be raised to 165 deg F for proper sanitization of the soiled materials.

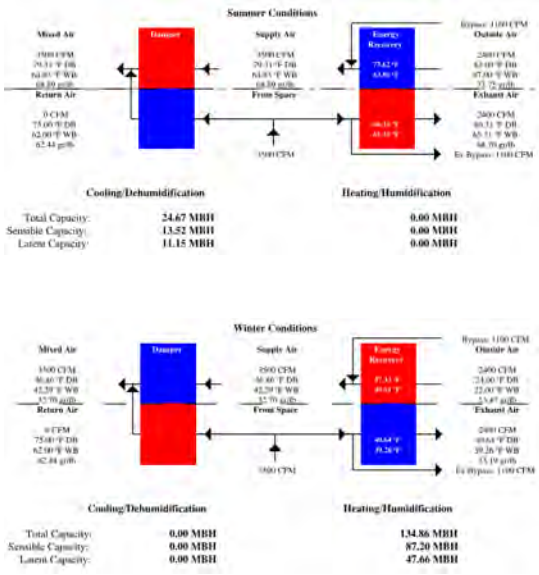
The plumbing system will include the following, but not necessarily be limited to:

- Domestic Water Service Meter
- Belowground domestic water service to the building
- Backflow Preventers
- Air Source Heat Pump Hot Water Heater
- Hot Water Storage Tank
- Electric Booster Hot Water Heater for laundry washing machine
- Roof Drainage, Waste and Vent Piping
- Indirect Waste Piping
- Hot and Cold Water Piping
- Hot Water Recirculation Piping and Circulating Pump
- Seismic Restraints
- Isolation Valves
- Hose Bibbs/Wall Hydrants
- Plumbing Fixtures and Trim
- Sewer Connection to Street
- Storm Connection to Street

HVAC

HVAC system will be based on a Variable Flow Refrigeration (VRF) system with Dedicated Outside Air System (DOAS).

DOAS system will be 100% outside air (OA) with energy recovery wheel and sized to provide required airflow and air changes per hour requirement per 2018 FGI Guidelines for Design and Construction of Residential Health Care, and Support Facilities. DOAS unit will be a heat pump type packaged roof top unit similar to AAON RN Roof Top Unit with Energy Recovery System. DOAS OA air intake will be minimum of 36 inches above finished roof elevation as required by FGI Guidelines.



Typical DOAS RTU with Energy Recover System Diagram

100% conditioned outside air will be distributed to each space through insulated ductwork.

Each space will be heated and cooled by VRF fan coil unit (FCU). Wall mounted type will be used for bedrooms and ceiling cassette type will be used for Living Rooms, Activity Rooms, TV Rooms, and other support rooms. Wall or ceiling mounted units will be used and will not require closet or floor space for installation and minimizes the total building square foot requirements. Air cooled outdoor unit will be located on the roof within the sloped roof well. The installation of the roof top equipment will include the review of the noise and the vibration to minimize any transmission to the occupied space below.

Wall Mounted Unit

Ceiling Cassette Unit

Exhaust will be provided to shower rooms, toilet rooms, and soiled rooms and collected through the ductwork. Exhaust fan will be located on the roof and will

discharge air minimum of 25 feet away from DOAS air intake.

The building Direct Digital Control (DDC) system will be connected to the campus control system and all major equipment will be monitored through the DDC system operator's work station in the maintenance building.

The HVAC system will include the following, but not necessarily be limited to:

- VRF Air Cooled Condenser
- VRF Room Air Conditioner
- Refrigeration Piping
- Condensate drain piping
- DOAS Roof Top Unit
- Energy Recovery System
- Self-Contained Unitary Air Conditioner/Heat Pump
- Heat Recovery Equipment
- Ductwork
- Diffusers, Registers and Grilles
- Electric Infrared Unit Heaters for covered court yard
- HVAC Control Systems
- Seismic Restraints

NEW CONSTRUCTION MADRONA SITE

93,200 SF new building – 100 Beds

Net Zero Energy Equipment Sizes – 100 Beds

- Domestic Cold Water Service to Building – 4"
- Five Air Source Heat Pump Domestic Hot Water Heaters – each 80 MBH heating capacity, 1.2 GPM and nine sets of two 200-gallon storage tanks.
- Six DOAS RTU, each at 3,500 CFM.
- Six 15-ton VRF Air Cooled Condensers.
- One hundred eighty VRF fan coil units.
- Six Energy Recovery Systems, each at 3,500 CFM.

LAUNDRY BUILDING MECHANICAL SYSTEMS

Fire Protection

Fire protection system will be a wet sprinkler system and will provide coverage to all spaces. The fire protection system will include the following, but not necessarily be limited to:

- Belowground fire service to building
- Backflow preventer (double check valve assembly)
- Wet sprinkler piping
- Wet pipe alarm check valve
- Fire Department inlet connection
- Supervisory (tamper) switches
- Water flow switches
- Zone control valves
- Isolation and check valves
- Inspector's test connection
- Sprinkler heads
- High temperature rated sprinkler head in the laundry equipment area.
- Seismic restraints
- In new construction, crawl space will not be sprinkled.

Plumbing System

4" Domestic cold water service to the building will be connected to the campus water distribution loop with water meter and backflow preventer at the building service connection. The backflow preventer will be installed in the mechanical room with floor drain. Additional backflow preventers will be provided for laundry equipment cold water

& hot water systems and steam boiler makeup water system.

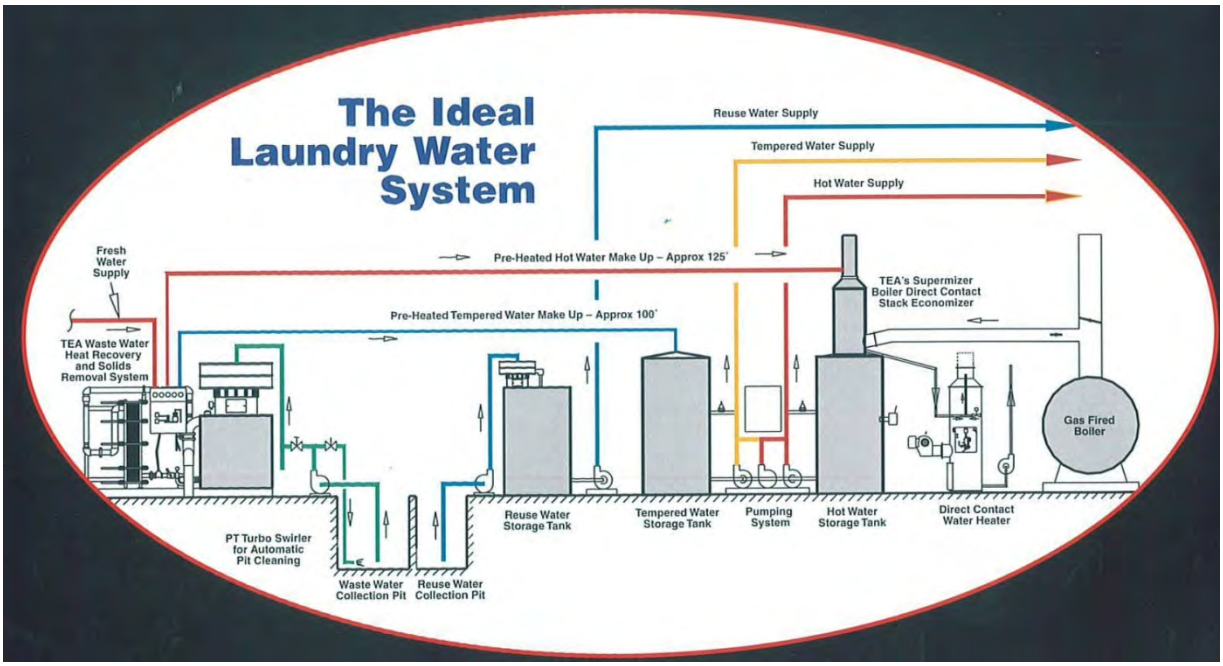
Domestic hot water system for toilet rooms will be based on the single point of use tankless electric water heater similar to Rheem RTEX-04. Laundry equipment hot water heater will be generated from the steam immersion water heating system. The hot water will be stored in stainless steel storage tank. The hot water will be circulated through the system by circulated pump to maintain constant temperature in the piping. The hot water temperature will be based on the laundry equipment requirements. The plumbing system will be designed to include the consideration of Legionella response per 2018 FGI Guideline Section A2.5-2.2.3.

Cold & Hot Water design will include consideration to minimize piping dead legs to prevent any growth within the piping system. In addition, hot water piping loop will be routed in the wall from the ceiling to plumbing fixture stop valve and the laundry equipment within 12 inches, so that each fixture and equipment will receive hot water immediately to minimize water waste.

The waste water heat recovery system will recover heat from the waste water and the system will temper cold water that will be used for the laundry process. Tempered water will be stored in the tempered water storage tank. It is estimated to recover approximately 30% to 40% of heat (energy) from the waste water. The waste water heat recovery will consist of plate heat exchanger, shaker screen to remove suspended solids, and associated control system to optimize the energy recovery.

The plumbing system will include the following, but no necessarily be limited to:

- Domestic Water Service Meter
- Belowground domestic water service to the building
- Backflow Preventers for building service entrance and additional backflow preventers for laundry equipment water supply connections.



- Single point of use tankless electric water heater for toilets.
- Steam boiler vent.
- 90 to 100 hp Steam Boiler System*
- Direct Contact Stack Economizer*
- Steam immersion water heater*
- Steel Tempered Water Storage Tank*
- S.S. Hot Water Storage Tank*
- Pumping package*
- Gas Fired Dryer*
- Steam heated ironer*
- Washer*
- Dryer*
- Air compressor*
- Waste water heat recovery system*
- Roof Drainage, Waste and Vent Piping
- Indirect Waste Piping
- Hot and Cold Water Piping
- Hot Water Recirculation Piping and Circulating Pump
- Seismic Restraints
- Isolation Valves
- Hose Bibbs/Wall Hydrants
- Plumbing Fixtures and Trim
- Sewer Connection to Street
- Storm Connection to Street

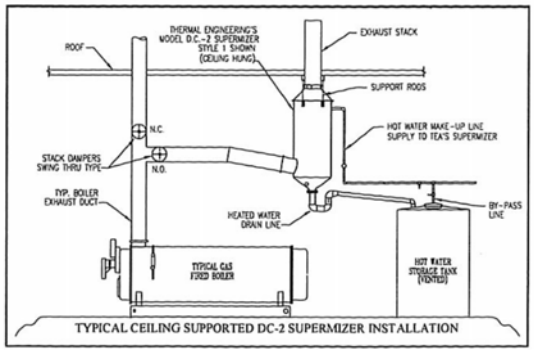
"*" indicates the equipment/system that are part of the laundry equipment which are not furnished by the plumbing/mechanical contractor. The required piping connections will be provided by the plumbing/mechanical contractor.

HVAC

HVAC system will be based on a split DX heat pump, wall mounted indoor unit and outdoor unit for office room and a support room. Each unit will be sized for 6,000 btuh (200 cfm each). Outside air will be provided from the Dedicated Outside Air System (DOAS) unit with plate heat exchanger with supply fan & exhaust fan (100 cfm system).

The laundry area will be conditioned by three (3) packaged DX heat pump roof top units, each sized for 20 ton or 240 mbh. The supply air will be distributed through the exposed ductwork in the space. The return and exhaust air openings will be located to capture the heat from the equipment and will be exhausted to outdoor and/or returned to the units.

Gas fired steam boiler serving the laundry equipment will be equipped with Direct Contact Stack Economizer to re-claim energy from the flue gas and will temper the cold and hot water used for laundry equipment. It is estimated to recover approximately 30% to 40% of heat (energy) from the flue gas. The flue gas energy recovery system will consist of heat exchanger, dampers, actuators, and associated control system to optimize the energy recovery.



Direct Contact Stack Economizer Diagram

The building Direct Digital Control (DDC) system will be connected to the campus control system and all major equipment will be monitored through the DDC system operator's work station in the maintenance building.

The HVAC system will include the following, but not necessarily be limited to:

- Split DX heat pump wall mounted indoor and outdoor unit for Office and support rooms
- Refrigeration Piping
- Condensate drain piping
- DOAS plate heat exchanger energy recovery ceiling mounted unit.
- Packaged DX Unitary Air Conditioner/Heat Pump Roof Top Unit for laundry area conditioning
- Ductwork
- Diffusers, Registers and Grilles
- HVAC Control Systems
- Seismic Restraints
- Miscellaneous exhaust system and fans for laundry equipment
- Steam boiler vent.
- 90 to 100 hp Steam Boiler System*
- Direct Contact Stack Economizer*
- Steam immersion water heater*
- Steel Tempered Water Storage Tank*
- S.S. Hot Water Storage Tank*
- Pumping package*
- Gas Fired Dryer*
- Steam heated ironer*
- Washer*
- Dryer*
- Air compressor*
- Waste water heat recovery system*

"*" indicates the equipment/system that are part of the laundry equipment which are not furnished by the plumbing/mechanical contractor. The required piping, venting, and duct connections will be provided by the plumbing/mechanical contractor.

ELECTRICAL CODE ANALYSIS

2017 National Electric Code (NFPA 70)

2018 FGI Guidelines for Design and Construction of Residential Health Care, and Support Facilities.

2015 Health Care Facilities Code (NFPA 99)

2015 Washington State Energy Code

2012 Life Safety Code (NFPA 101)

EXISTING ELECTRICAL CONDITIONS

General

Fircrest School is an 82-acre campus with over 40 buildings serving approximately 200 developmentally challenged persons and almost 700 staff.

Electrical Service

Electrical Service is provided by Seattle City Light. Current planning will change the location of the incoming electrical power service to come from the corner of NE 150th St. and 20th Ave. NE and will separate the Department of Health Public Health lab electric service from the Fircrest School service.

Service voltage to the campus is provided at 4,160 volts and distributed underground to all buildings on campus. All buildings have oil filled outdoor transformers delivering power to the buildings at distribution voltages of 120/208 or 277/480.

Standby Power

The Campus is served by one (1) 565 kW Caterpillar standby generator and fuel is provided from a 22,000-gallon diesel tank with a 5000-gallon allotment reserved for the generator.

The generator supplies standby power to the campus feeding partial power to the buildings across the Campus.

Telecommunications

Campus telecommunications main distribution facility (MDF) is located mid campus in the 200 Building (Bldg. 66). A telecommunications IDF facility is located south of the Aspen building in a small wooden shed. A Fiber distribution loop serves the entire campus for Fire Alarm, Phone, Data and the Energy Management system.

Fire Alarm

The fire alarm system consists of local fire alarm panels in each separate building reporting back to a central campus panel located in the Administration building (bldg. 65). The main system is reported to be a Siemen's pyrotronics system completed in 2002.

Typical building systems include area smoke detection in portions but not all the buildings and fire alarm pull stations at selected exit doors. Fire alarm horn/strobes provide notification of alarms throughout the buildings.

Security

Security is reported to include some intrusion detection (reporting back to the Duty Office), card readers for access control to the Pharmacy and a few local stand-alone security cameras.

120 BED MADRONA SITE LEED SILVER

Electrical Service

Normal power electric service to the building will be served from (6) 200 kVA indoor unit substations located one per neighborhood. Each substation will receive campus medium voltage power and convert to 120/208-volt, three-phase power to serve the neighborhood. Outdoor main service entrance rated disconnect switches will be utilized to tie the new facility to the existing campus power distribution.

Normal power will be distributed to electric rooms in each neighborhood and branch circuits will supply power to all electrical fixtures and devices from these electric rooms.

Essential Power

The nursing home will be served by an essential service power generator locally positioned to serve power directly and exclusively to this building. Two branches of essential power will be delivered, life safety power and equipment power. Each branch will be served by a dedicated automatic transfer switch to switch between the normal power service and the essential power branch served from the Nurse Home generator. This generator will have a 96-hour fuel supply local to the generator.

The campus generator system may indirectly serve the building by taking over the normal power service feed in a power outage if electrical demand power will allow for this service.

From each essential branch transfer switch, Life Safety and Equipment Power will be distributed through the building by a series of transformers and panels dedicated to the essential branch of service they provide power for.

The Life Safety Branch will serve power for the Illumination of Means of Egress, Exit Signs, the Fire Alarm system, Non-flammable medical gas alarm systems, communications systems used for issuing instructions during emergency conditions, dining and recreation areas (for illumination to exit ways), generator set locations lights and receptacles and (if equipped) elevator lights and controls.

The equipment power branch will provide for delayed automatic connection and will serve:

Task illumination and select receptacles for patient care areas, medication preparation spaces, pharmacy dispensing areas and nurse Stations.

Supply, return, and exhaust ventilating systems for airborne infectious isolation rooms.

Sump pumps and other equipment for major apparatus.

Smoke control and stair pressurization if required.

Kitchen hood supply and exhaust.

Nurse call system.

Heating equipment for patient rooms.

Elevator service (if equipped).

Power Distribution

Individual building power panels will be provided to serve lighting, receptacles, HVAC connections, kitchen equipment connections and miscellaneous equipment connections and loads on the floor the loads occur. All distribution panels will be of door-in-door construction.

Lighting

Lighting will be accomplished using LED lighting fixtures with features that allow dimming and tunability for light color. Fixtures will be a mixture of recessed and surface mounting, wall and ceiling located, linear and

round sources as best selected for the purpose and location.

Exterior lighting fixtures will be a mix of pedestrian oriented poles, bollards and wall sconces. Parking site lighting will be provided by pole mounted lighting fixtures.

Lighting controls will vary from fully automatic lighting in public spaces using occupancy sensors and daylighting controls to manual lighting control in patient rooms. All controls will be localized to the area of use.

Site lighting controls will be based on photocells and lighting intensity variation based on occupant sensing controls. Some controls will likely include time of day control.

Telecommunications

Campus telecommunications will be brought to a main distribution facility (MDF) in the ground floor of the nursing home. The MDF will serve as a secondary hub for campus telecommunications facilities since the current secondary hub will have to relocate to accommodate this project.

Intermediate distribution facilities located in each neighborhood will distribute telecommunications throughout the facility. Fiber optic cable will be used for distribution. Copper cable will be based on CAT6A cabling.

Telecommunications will consist of a telephone outlet, data outlet and television outlet per patient bed. Additional data outlets will be provided at all telephone, computer, printer, monitor and elevator locations as well as all equipment reporting locations such as medical refrigerator alarms.

Fire Alarm

A new Fire Alarm system will consist of a local main fire alarm panel in the building reporting back to the central campus fire alarm monitoring location over fiber optic cable. The main panel will be in the MDF room.

Initiation devices will consist of smoke detectors in corridors, electric rooms, data rooms, and other sensitive areas where smoke detection warnings would be beneficial to the resident and staff population. Manual pull stations will be provided at each Nursing Station. Duct smoke detectors will be provided if required. Heat detectors will be provided in specific areas where having a high heat alarm signal before the sprinkler heads activate is advantageous, such as cooking and laundry areas. The sprinkler system will be fully monitored.

Notification appliances will consist of voice alarm speakers and visual alerting devices (speaker/strobes). Voice alarm is not required but considering the patient population, voice will be more calming. Visual devices will need to be carefully coordinated to not be disruptive in the environment.

It is likely the fire alarm system will need to be closely coordinated with the local Fire Marshall's office to provide a system that provides for a safe environment and is the least disruptive to the residents and staff.

Security

Security will include intrusion detection, access control, security video, panic alarms and wander control. Security features for lockdown may also be anticipated.

Intrusion detection will be provided at all exterior doors and will likely be used to monitor door activity during non-peak hours such as late at night allowing reporting at nurse stations of door activity. This type of system could be (but is not planned for) used in monitoring window activity of operable windows. Additional monitoring could be

accomplished with motion sensors to monitor traffic in specific hallways.

Access control using card or badge readers will be used at specific staff entry points to the building during non-peak hours such as late at night. Readers will also be provided in high security areas such as medication preparation rooms, pharmacy and data rooms. Additional readers will be provided in areas that need restricted access.

Security video will be provided in select public areas such as parking lots and outside staff entrances.

Security Staff Assistance (panic) alarms will be provided in Nurse Station and Reception areas. Portable, on staff alerting and alarming systems can be provided as part of the nurse call system.

Wander control will be provided at select doors to keep residents from leaving the premises without staff knowledge. Some systems will alert staff when a door is opened, some systems will sound an alarm and hold the door closed for a short period of time to allow for staff response. Portable on resident reporting systems can be provided as part of the nurse call system.

Nurse Call

A nurse call system will be provided to allow for two-way voice communications between each patient bed and the nurse station serving the bed. The system will be interactive between all nursing stations, so the system can allow transfer of calls to additional locations. Each patient bed will have a nurse call station and a staff assist pushbutton. Bath, shower and toilet rooms will have assistance call cords that will need to be coordinated with staff for type and location. Medication preparation, clean and soil rooms, break rooms and other heavily trafficked staff rooms will have staff duty stations.

The nurse call system can provide (but is not budgeted for) portable staff monitoring devices that allow the staff to receive Nurse calls while away from the nurse stations.

Other possible features (not budgeted for) include staff locaters, equipment locaters, and resident wandering devices.

Solar Power – Net Zero Alternate

Solar power that would allow for 100% of the calculated demand load for the building to be served will be planned as an alternate for the nursing home. Lighting will be made 20% more efficient than the base. Connection to the building electrical system for distribution back to the electric utility will be provided. Controls to shut down the photovoltaic array when the local or campus generators are running will be provided.

To assist in accomplishing the net zero goal, an electrical functional program outlining what types of cord and plug connected equipment will be allowed for use will be created during the project design phase. This program will outline the need for devices such as energy star rated equipment, devices that are to be connected to controlled outlets, cord and plug connected equipment allowed for staff and patients.

BUILDING ENVELOPE

For both renovation and new construction options, the LEED Silver building envelope can be assumed to be an envelope that minimally complies with the 2015 Washington State Energy Code (WSEC). The proposed building envelope information described in this report is anticipated to meet this threshold. It should be anticipated the component performance method for will be used to show compliance; for reference, the component target building requirements are defined in WSEC Table C402.1.4, 'All Other' column. The 2018 WSEC, which is currently in development, is expected to become effective July 1, 2020. Therefore, if the project is permitted after this date, the building envelope requirements will likely become more stringent.

New Construction Alternates

The general envelope requirements for LEED Silver and LEED Silver + Net-zero renovations are described in Table 1. The LEED Silver air leakage target complies with the 2015 WSEC Section C406.9 reduced air infiltration requirement. This C406 option, combined with the C406.3 Reduced lighting power density described in the electrical requirements, fulfill the two C406 options required for the LEED Silver building to meet this portion of the code.

Renovation Alternates

Table 2 describes the requirements for the renovation of the Pine-Fir buildings (Alternates 1 and 2). For existing buildings, WSEC Section C505 allows for the proposed building envelope to be up to 110% of the target UA and still comply. Like new construction, C406.9 reduced air leakage is assumed. If these requirements can't ultimately be met, the performance (energy modeling) approach for WSEC compliance, described in Section C407, may be utilized. Similar to the component method, the annual modeled energy used of the proposed building may be up to 110% of the C407 threshold.

Table 1. Building Envelope Requirments for New Construction Alternates

Component	LEED Silver	LEED Silver + Net-Zero
Roof	Vented wood truss, R-49 loose-fill	Vented wood truss, R-60, loose-fill
Walls	2x6 wood, intermediate framing with R-21 fiberglass insulation Sheet WRB on exterior sheathing, vented (rainscreen) cladding attachment	2x6 wood, intermediate framing with R-21 fiberglass insulation + 2" mineral wool continuous exterior insulation attached with fiberglass clips or Z-girts Fluid-applied WRB on exterior sheathing, vented (rainscreen) cladding attachment
Slab-On-Grade Floor	R-10 rigid insulation, vertical down to top of footing on either interior or exterior. If interior, R-5 minimum thermal break at slab perimeter (chamfer OK)	R-10 rigid insulation continuous under the slab and R-10 on exterior down to top of footing.
Windows	Fiberglass frame with double-pane LowE glass and argon fill NFRC rated U-0.26-0.28	Fiberglass frame with triple-pane LowE glass and argon fill NFRC rated U-0.18-0.20
Glazed Entrance Doors	Aluminum frame with double-pane LowE glass and argon fill NFRC rated U-0.65	Aluminum frame with double-pane LowE glass and argon fill NFRC rated U-0.45
Opaque Doors	Steel, NFRC rated U-0.37	Steel, NFRC rated U-0.37
Building Air Leakage	0.25 cfm/ft2 @ 75 Pa or better	0.15 cfm/ft2 @ 75 Pa or better

Table 2. Building Envelope Requirments for Renovation Alternates

Component	LEED Silver	LEED Silver + Net-Zero
Roof	Flat concrete roof, R-38 continuous rigid insulation on top of deck.	Flat concrete roof, R-38 continuous rigid insulation on top of deck. Concrete overhand encased in 3" 2lb closed-cell (R-21) sprayfoam
Walls	EIFS with 3"(R-15) EPS insulation over drainage plane Fluid-applied WRB on exterior of concrete wall Metal stud furring @ 24" O.C. on interior with no insulation in cavity	EIFS with 3"(R-15) EPS insulation over drainage plane Fluid-applied WRB on exterior of concrete wall Metal stud furring @ 24" O.C. on interior with R-13 fiberglass insulation in cavity
Below-grade Walls	2" rigid insulation with metal stud furring @ 24" O.C. on interior with no insulation in cavity	2" rigid insulation with metal stud furring @ 24" O.C. on interior with R-13 insulation in cavity
Slab-On-Grade Floor	No insulation added to under the floor or on the exterior of the foundation.	Excavate exterior and install R-15 rigid insulation down to top of footing or for 2' minimum.
Windows	Fiberglass frame with double-pane LowE glass and argon fill NFRC rated U-0.26-0.28	Fiberglass frame with triple-pane LowE glass and argon fill NFRC rated U-0.18-0.20
Glazed Entrance Doors	Aluminum frame with double-pane LowE glass and argon fill. NFRC rated U-0.65	Aluminum frame with double-pane LowE glass and argon fill. NFRC rated U-0.45
Opaque Doors	Steel, NFRC rated U-0.37	Steel, NFRC rated U-0.37
Building Air Leakage	0.25 cfm/ft2 @ 75 Pa or better	0.15 cfm/ft2 @ 75 Pa or better

ADL	Activities of Daily Living
ANSI	American National Standards Institute
CMS	Centers for Medicare & Medicaid Services
CNA	Certified Nursing Assistant
CNS	Clinical Nurse Specialist
DDA	Developmental Disabilities Administration
DoN	Director of Nursing
DSHS	Department of Social and Health Services
HHS	U.S. Department of Health and Human Services
ICF	Intermediate Care Facility
IT	Information Technology
LTC	Long-Term Care
MDS	Minimum Data Set
NA	Nurse Aide or Nursing Assistant
NF	Nursing Facility
NP	Nurse Practitioner
OFM	Washington State Office of Financial Management
PA	Physician Assistant
PAT	Program Area Team
QAPI	Quality Assurance and Performance Improvement standards for compliance, ethics, and infection control
RoP	Medicare and Medicaid Requirements of Participation
RN	Registered Nurse
SNF	Skilled Nursing Facility
SOLA	State Operated Living Alternatives (contracted community residential services)
USGS	U.S. Geological Survey

EXHIBIT L

Laundry Analysis

ALTERNATE L1- HANDLING LAUNDRY AT RAINIER

Rainier Processing Costs (Red are costs due to transport to Rainier)

1. Driving and Transport

Current truck use based on actual usage of highway miles at 120 miles per day to and from Rainier to FS and back. Operated by one personnel both ways M-F only. National Average of the life expectancy for a Mitsubishi Diesel Box Truck based on highway miles is 250K to 300K before replacement is needed. For sake of this exercise, we are using our actual mileage based on a ten-year use at 288K miles. The vehicle we purchased is already at 64K miles so our life expectancy equals to 8 solid years before replacement needs to occur.

Truck expense includes:

Initial purchase and setup (Truck $35K, lift gate $7K, and winter tires $2.7K..... $44,700

Quarterly Preventative Maintenance (PM) consisting of an oil change, fluid top offs, and quick inspections $11 every 90 days.. $ 352

Annual PM of fuel filter, wiper blades, ABS fluid refresh, and fluid top offs $60 for remaining 8 years..... $ 480

Tranny Flush Required every 80K miles, based on end of life, 3 changes left ..... $ 30

Brakes Required every 50K miles, based on end of life, 5 changes left ..... $ 1,000

Tires All Season every 60K miles at $1200/EA, Snow tires, 3 ears of life at $2900 ..... $14,400

Batteries Required every 5 years $150, based on end of life, changed twice ..... $ 300

Diesel Fluid and DEF Fluids 6 month operation based on Diesel averaging $2.96/gallon $51,200

Total vehicle expense not counting the unforeseen end of life breakdowns of components and the unknowns ----------$112,462

Depreciation and expense for operation based on the National average for the truck we have minus the already used miles before purchase, we have approx. 224K miles left to use before replacement is needed. This would work for us over the next 8 years at an **annual cost of $14,058**

Transportation Driver This position includes dropping off clean linen at the facility to laundry staff, and reloading the truck for the next day delivery to Rainier This position is full time. 1 staff x $4010 a month..... Produces an **annual costs of $48125**

Vehicle travel of laundry personnel to and from Rainier and Fircrest : 360 miles x $.55 x 4.34 wk/mo = 198.00 an **annual cost of $ 2376**

Labor only for Laundry staff to Rainier 3 x per week of 3 staff Based on below .....**an annual cost of $29135**

2 staff x19.55/hr x 3 hr/day x 3 days/wk x 4.34wk/mo = $1527.25/mo

1 staff x 23.06/hr x 3 hr/day x 3 day/wk x 4.34 wk/mo = $900.72/mo

Laundry Processing within Fircrest School and Rainier School

There is currently 10 positions within the Fircrest Laundry Department. This equates to the following;

Laundry Operations Supervisor 1 (Qty 1) Located at Fircrest, transports to Rainier 3 days a week

Laundry Worker 3 (Qty 1) Stationed at Rainier School

Seamstress 2 (Qty 1) Stationed at Fircrest School

Laundry Worker 1 (Qty 2) Stationed at Fircrest School

Laundry Worker 1 (Qty 3) Stationed at Rainier School

Laundry Worker 1 (Qty 2) Located at Fircrest, transports to Rainier 3 days a week

Cost salaries, including benefits package, breakdown will be provided in the following manner based on permanent placement or roving status;

Permanent monthly and annual total based on permanent location (either Rainier or Fircrest)

Laundry Worker 3 Monthly expense at $4010, ……..**annual expense at $48,125**

Seamstress 2 Monthly expense at $4104, ……..**annual expense at $49,248**

Laundry Worker 1 Monthly expenses at $3400, Qty 5 Rainier and Fircrest ……**annual expense at $204,048**

Roving Worker hourly and annual total base on roving to and from Rainier and Fircrest (laundry labor hours only)

Laundry Operation Supervisor (Qty 1) and Laundry Worker 1 (Qty 2) ……**total annual expense $100,368**

2 staff x19.55/hr x 7 hr/day x 3 days/wk x 4.34wk/mo = $3564/mo

2 staff x19.55/hr x 10 hr/day x 1 day/wk x 4.34 wk/mo = $1697/mo

1 staff x 23.06/hr x 3 hr/day x 3 day/wk x 4.34 wk/mo = $2102/mo

1 staff x 23.06/hr x 10 hr/day x 1 day/wk x 4.34 wk/mo = $1001/mo

Laundry Processing at Rainier School for Fircrest Laundry

Utility and Machine

Price per pound was calculated in November 2017 based on the utilities and usage logs of the machines at the facility of Fircrest linen. It was agreed, as we already expense the labor side of this, Rainier School was to provide us a total daily and monthly pound of linen processed every month. Based on above pricing, it was calculated we pay $.069 per pound of laundry processed which covered the utilities cost for the machines and soap and disinfectants used for processing. At first, we were short on linen and was running from 45,000 lbs. to 49,000 pounds. Currently today, we are back up near the 61,000 to 63,000 lbs. we once produced. For this exercise, I will use the 63,000 lb. number for final calculations.

Monthly use of 63,000 lbs x $.069 = $4347 a month …….. **an annual cost of $52,164**

Machine breakdowns, repairs and preventative maintenance work. It was suggested that Fircrest pay 50% of the labor and the materials on this work completed by a Rainier School Maintenance mechanic. This started in late November as the facility did not track there expenses on the machine when we started in August. With the fact we have not completed an entire month at this point and you are in need of responses, I am imputing the repair and maintenance cost for an entire year at approx. $13,400……. **an annual cost of $13,400**

So for final numbers

Delivery and Transportation of workers and linen …….. $ 93,694

Laundry processing labor (dirty at Rainier, Clean at Fircrest) …….. $401,789

Machine utilities, repair and maintenance at Rainier …… $ 65,564

Annual Expense …….. $561,047

Alterations, which could change the cost of this annually

Machine replacement

Vehicle replacement

Utility price hikes or curtailments

Facility failure at Rainier

Emergency Disaster

10/ 18/ 2018
Quote from North City Cleaners, 17721 15th Avenue NE, Shoreline.

Hello Eric,

Please provide your price for the following:

63,000 pounds of laundry per month $2.50 / lb = $157,500

Wash and Fold only:

- towels,
- bath towels,
- pillow cases,
- bath blankets,
- diapers,
- incontinent pads,
- bibs.
- The rest goes into a separate bin for items such as resident clothing, mending and marking items, wash cloths, mops, dirty linen bags, and clean linen bags

Pressing required for:

- sheets were 4299 pieces,
- bed spreads 915 pieces,
- small flat fitted sheets 729 pieces
- blankets, 2553 pieces
- bath blankets at 3721 pieces.

Total 12,217 pieces x $15.00 per item = $183,255.

Grand Total = $340,755/ month

Thank you.

Valerie Thiel

206-694-3441

LAUNDRY PRODUCTION LOG

5-31-17

	WEEK #1	WEEK #2	WEEK #3	WEEK #4	TOTAL
SHEETS	1083	995	1185	1036	4299
PILLOW CASES	0	0	45	0	45
SPREADS	220	160	285	250	915
SMALL FLAT	320	130	110	169	729
BLANKETS	593	535	583	842	2553
BATH TOWELS	1610	1460	1362	2131	6563
HAND TOWELS	270	1430	360	315	1375
WASH CLOTHS	540	385	553	736	2214
BATH BLANKETS	515	895	1039	1272	3721
DIAPERS	387	485	516	770	2152
BIBS	1095	1018	1082	1247	4442
MENDING & MARKING	832	496	422	838	2588
CLOTHING	990	2082	1615	2216	6903
HB & NYLON BAGS	1339	1576	1559	2389	6863
MOPS	520	670	708	631	2529
MISC.	770	368	395	609	2142
PADS	1755	1795	1895	2680	8125
FOOD LIFELINE					
MAIN KITCHEN	230	160	150	335	875
~~DENTAL~~ ATP FOLDER	1090	940	850	1457	4337
	14159	14580	14708	19923	63370

MAY 2017 - 63370

IND INDUSTRIES INC. dba
IND
LAUNDRY SYSTEMS

(206) 517-5463
FAX (206) 517-5493

September 17, 2018

Sage Architectural Alliance
Valerie Thiel
Tel: 206-694-3441
Email: Val@SageArchAlliance.com

Conceptual Laundry Fircrest School Shoreline, WA

Task – 70,000 pounds a month to be processed in a 40-hour work week.

70,000 lbs./month ÷ 4.33 weeks= 16,167 lbs. per week
16,167 lbs. ÷ 40 hour per week = 404 lbs. per hour to be produced.

Laundry equipment

QTY	Equipment/Description (See Attachments for Additional Detail)	Unit Price	Total Price
2	Braun Medicare Top-Side Loading Washer/Extractor	$113,194.00	$226,388.00
1	Braun Natural Gas Fired Dryer	$123,906.00	$123,906.00
1	Braun Precision Series® 2-Roll, 32in. Ø Steam-Heated Ironer	$189,244.00	$189,244.00
1	Braun Precision Series® 4 Lane 2 Fold Primary/1 Lane 3 Fold Cross Folder	$81,098.00	$91,098.00
1	Braun Precision Series® Small Piece Folder	$47,606.00	$47,606.00
1	125 lbs. Unimac Washer	$38,432.00	$38,432.00
1	170 lbs Unimac Dryer	$16,884.00	$16,884.00
2	Platform Scales with Printers		$7,793.00
2	Electric Hoists		$4,992.00
1	5 hp Air Compressor System		$4,836.00
40	Landry Carts & Slings (about 40 each)		$26,000.00
1	Soil Sorting System		$125,000.00

LIND INDUSTRIES INC. dba
LIND
LAUNDRY SYSTEMS

September 17, 2018

Water System

QTY	Equipment/Description (See Attachments for Additional Detail)	Unit Price	Total Price
1	TEA TR-2 Wastewater Heat Recovery System	$66,035.00	$66,035.00
1	TEA 800 GAL Stainless Steel Hot Water Storage Tank	$8,913.00	$8,913.00
1	TEA Steam Immersion Water Heating System	$9,386.00	$9,386.00
1	TEA Steam Steel Tempered Water Storage Tank	$8,527.00	$8,527.00
1	TEA Triple Pumping Package - 5 HP	$19,651.00	$19,651.00
1	TEA DC-2 Direct Contac Stack Economizer	$18,100.00	$18,100.00

100 HP Steam Boiler System

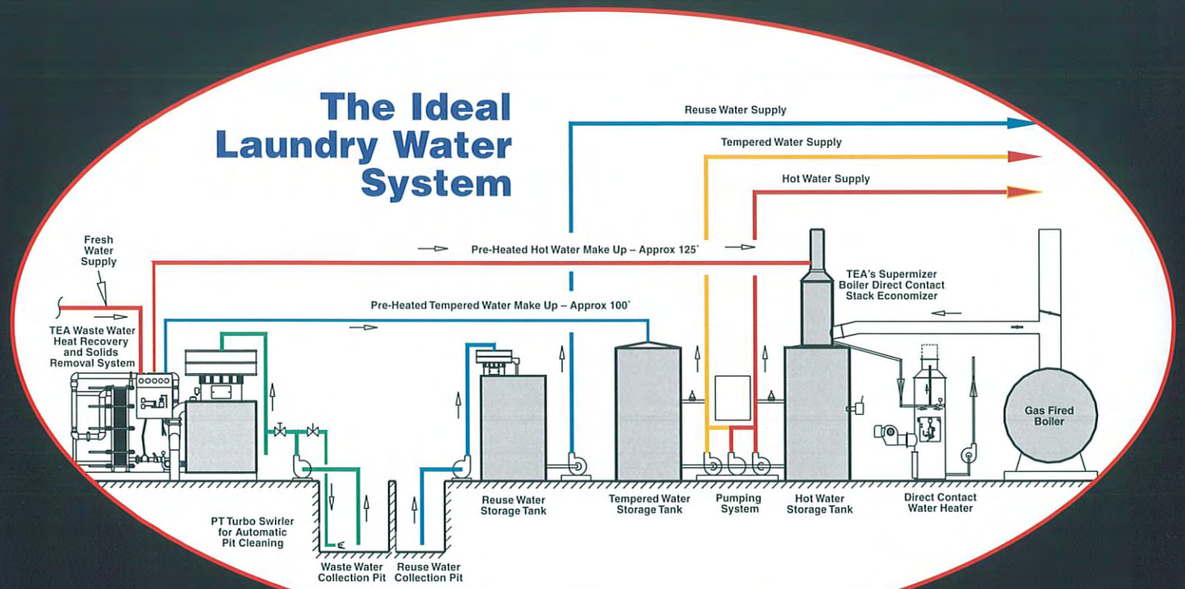
QTY	Equipment/Description (See Attachments for Additional Detail)	Unit Price	Total Price
1	90 to 100 hp Steam Boiler System	$99,788.00	$99,788.00

Estimated figures do not include allowances for freight or installation.

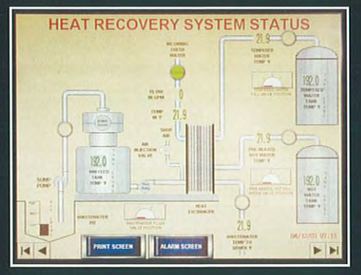
Thank You,

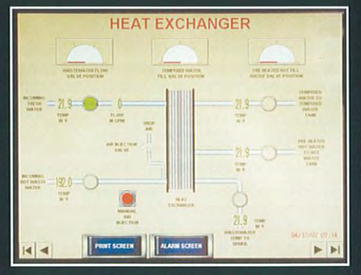
Neil Lind
Lind Industries, Inc ***d.b.a.***
Lind Laundry Systems
9615 STONE AVE N
SEATTLE, WA 98103-3337
USA
TEL: 206-517-5463
FAX: 206-517-5493
e-mail: neil@lindindustries.com www.lindindustries.com

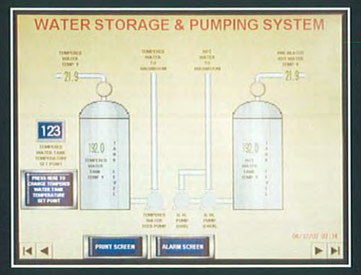
The Ideal Laundry Water System

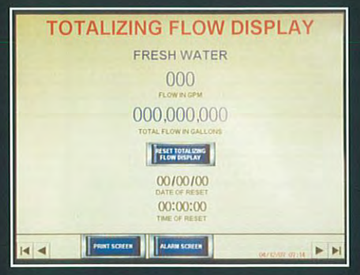


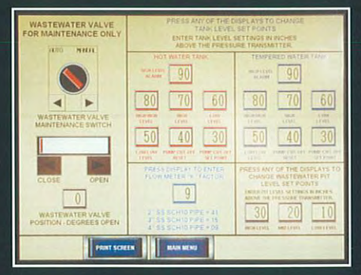
Examples of SMART TOUCH Screens











THERMAL ENGINEERING AND WHAT WE DO:

- WASTE WATER HEAT RECOVERY SYSTEM
- DIRECT CONTACT WATER HEATERS
- STAINLESS STEEL WATER STORAGE TANKS
- STEAM WATER HEATING SYSTEMS
- CONDENSATE COOLING SYSTEMS
- DIRECT CONTACT STACK ECONOMIZERS
- WET TYPE LINT COLLECTORS
- DRY TYPE LINT COLLECTORS
- SHAKER SCREENS FOR WASTE WATER CLEANUP
- WATER PUMPING SYSTEMS
- CUSTOM WATER SYSTEM PLANT DESIGNS
- CONCRETE WASTE WATER PLANT DESIGNS
- WATER REUSE AND RECLAIMATION SYSTEMS
- ENERGY MONITORING SYSTEMS

THERMAL ENGINEERING of ARIZONA

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WATER HEATERS

WASTE WATER CLEAN-UP

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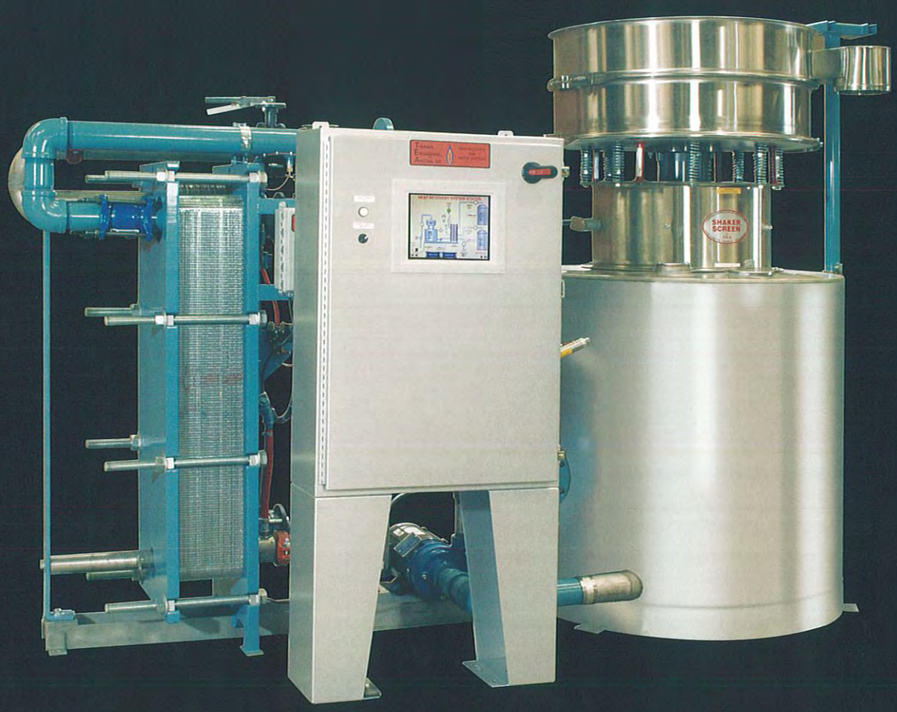


DIRECT CONTACT WATER HEATERS

SYSTEM 2000

HEAT RECOVERY FOR THE NEW MILLENNIUM

THERMAL ENGINEERING of ARIZONA

HEAT RECOVERY SYSTEMS

SYSTEM 2000

WITH THERMAL ENGINEERING'S SYSTEM YOU HAVE A FACTORY-BUILT, SERVICE PROVEN, COMPLETE PACKAGE. ENGINEERED FOR MAXIMUM WASTE WATER HEAT RECOVERY.

THERMAL HEAT PLATE EXCHANGER

PERFORMANCE
300% more efficient than continuous tube type heat exchangers.

EXPANDABLE
Just add plates for additional capacity – a one-hour job.

NON-FOULING
Highly turbulent corrugated and electro-polished heat transfer surfaces easily release soap scum build-ups

SERVICEABILITY
Simply remove compression bolts and spread plates apart for a full internal inspection of both the waste and fresh water heat transfer surfaces.

HEAT LOSS
Practically none – No insulation is needed.

COMPACT
Entire system occupies 25 to 35% of floor space compared to 30-foot long continuous tube type heat reclaimers.

TEA SMART-THERM
Automatically controls waste and fresh water flows to extract the maximum waste energy for pre-heating hot and tempered make-up waters to the highest levels ever achieved.

1 SHAKER SCREEN
Automatically removes suspended solids above 175 micron to reduce TSS to acceptable levels.

7 AUTOMATIC SOLIDS COLLECTION
Suspended solids filtered from wastewater are collected in dewatering container for easy disposal with plant solid waste.

6 HOT FILTERED WASTE WATER FEED TANK
Stores filtered hot wastewater for immediate delivery to heat exchanger. No heat recovery lag for lack of hot waste-water when needed.

2 EXCLUSIVE PRE-PIPING AND WIRING STANDARD
Assembly includes all isolation and control valves. Stainless steel fresh water piping for lifetime service.

5 EXCLUSIVE PUSH BUTTON HEAT EXCHANGER CLEANING
Automatic 160-degree hot water circulation cleaning cycle maintains "as new" performance in any kind of laundry. No dangerous hot caustic cleaning ever needed.

SMART TOUCH CONTROL SYSTEM

This stand-alone control console includes an advanced color touch screen interface for all control functions. This touch screen has the ability to completely operate and monitor the entire system operation. These functions will include the ability to start and stop all system components from the central control console. This system is standard at no extra cost.

3 PNEUMATIC INJECTION CLEANING (PATENTED)
Automatically air blasts wastewater heat transfer surfaces every few minutes. Violent air/water agitation breaks loose any fouling, which can impede heat transfer.

4 SAFETY FILTER
Basket strainer prevents solids from plugging plate exchanger if screen failure occurs

A HISTORY OF EFFICIENCY

The energy crisis of the 70's resulted in demands for the best laundry waste water reclaimers possible. Existing shell and tube units developed in the 30's and 40's, while adequate for those times, just did not have the performance capabilities needed when energy costs rose to 10 times previous costs.

In 1978, Thermal Engineering of Arizona (TEA) introduced its patented Thermal Heat Recovery System to the laundry industry. The exclusive corrugated heat transfer surfaces produce water flow turbulences which resulted in 300% more heat transfer efficiency than even the best existing continuous tube reclaimers.

Combined with its integral Shaker Screen for automatic wastewater Clean up, TEA's prepackaged, wired and piped Heat Recovery Systems quickly gained a position as the technological leader in the laundry industry.

In 1980, TEA introduced its patented hot and tempered water pre-heating wastewater heat recovery system – the greatest single improvement in laundry heat recovery ever. Today, fully 90% of all plants being built are using TEA's concept of heat reclaimed tempered water preheating.

And the results are spectacular. TEA systems are today achieving the highest levels of laundry wastewater heat recovery ever achieved. Plants are normally designed to recover 75% and more of the total heat contained in the wastewater before discharge to the sewer.

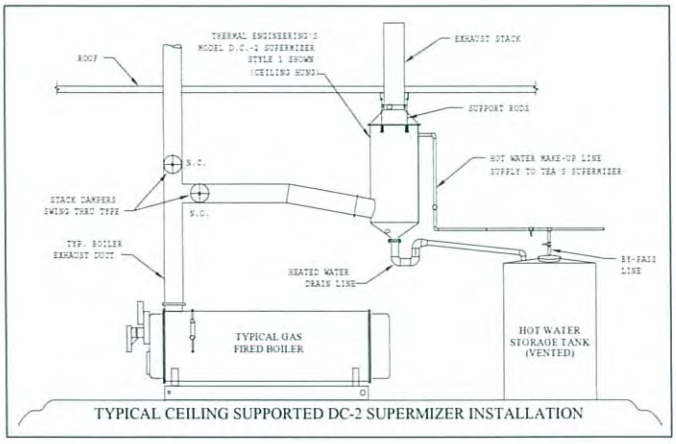
THERMAL ENGINEERING of ARIZONA

SUPERMIZER

DIRECT CONTACT
STACK ECONOMIZER

The biggest heat loss in a steam boiler is what goes up the stack.

Recovering this heat loss is what Thermal Engineering's Supermizer Direct Contact Stack Economizer does. When large volumes of hot boiler exhaust gases are discharged to the atmosphere, substantial quantities of valuable heat are needlessly lost. This heat can be easily re-captured and added to the incoming fresh water make-up as pre-heating. The hot exhaust boiler gases are directed by way of a damper on the boiler stack and enters into the lower heat transfer chamber and starts moving upward through the "packed mass" heat exchanger. When plant make-up water is needed, automatic controls start the regulated flow of water into the Supermizer. The incoming water enters the flow distributor where it is evenly spread out over the Packed Mass heat exchanger. It now starts to flow downward through the torturous path of the Packed Mass heat exchanger. The large surface area of the packing causes the water to spread out into a very thin film. The hot gases traveling upward through the packing readily releases its heat to the water film, rapidly raising the water temperature. Just as quickly, the hot gases cool. The efficiency of the heat transfer is dramatic – at full power and maximum water flow rates, the hot exhaust gases are normally cooled to within 10 to 20 degrees of the incoming water temperature before discharge to the exhaust stack. In a well-tuned boiler, this can amount to about a 20% energy recovery of the on-line boiler load.



TYPICAL CEILING SUPPORTED DC-2 SUPERMIZER INSTALLATION

TEA Stack Economizer gravity feeding a TEA DC-1 Direct Contact Water Heater. A TEA exclusive feature.

THERMAL ENGINEERING OF ARIZONA

2250 W. WETMORE RD • TUCSON, AZ 85705

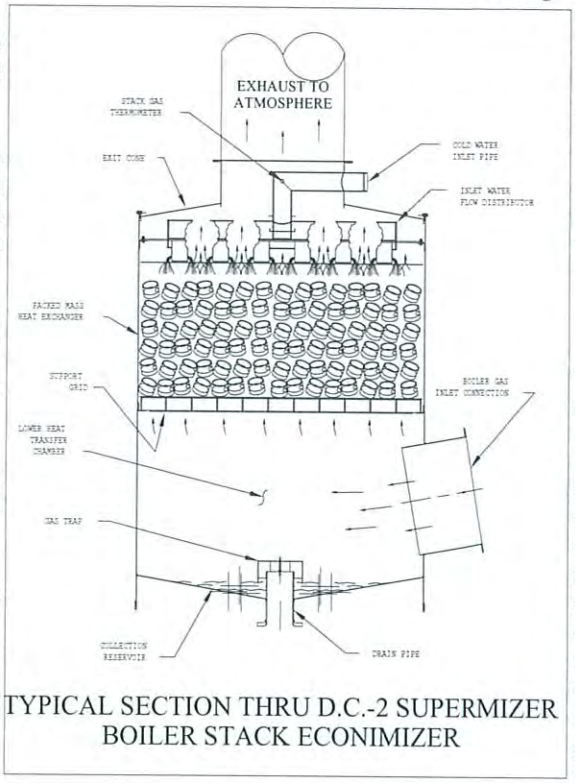
PHONE: 520-888-4000 E-MAIL: sales@teatucson.com FAX: 520-888-4457

How The SUPERMIZER Works

Thermal Engineering's SUPERMIZER Direct Contact Stack Economizer is a high temperature atmospheric type water heater. The unique packed mass heat exchanger has proven itself in hundreds of installations to be safe, efficient and requires a minimum of maintenance.

The heater itself is a vertical stainless steel vessel, which consists of the following:

- The exit cone, which discharges the cooled boiler gases to the exhaust stack and then to the atmosphere after releasing its heat to the water.
- An inlet water flow distributor, which spreads the incoming water evenly over the packed mass heat exchanger.
- The "Packed Mass" heat exchanger, where heat is scrubbed from the boiler exhaust gasses.
- A lower heat transfer zone, where the hot boiler gases make initial contact with the water droplets falling through.
- A bottom heated water collection and transfer reservoir.



TYPICAL SECTION THRU D.C.-2 SUPERMIZER BOILER STACK ECONIMIZER

TEA'S Supermizer is a very simple piece of machinery. Unlike other units, which have troublesome spray nozzles, the Supermizer has a flow distributor. This uses the leveling effect of water and dozens of flow orifices to insure equal distribution of water over the heat exchanger regardless of the incoming flow rate or pressure fluctuations.

The heated incoming water flowing downward through the Packed Mass heat exchanger keeps it cool and protects it from the high temperatures of the boiler exhaust gases. The water then falls through the lower heat transfer chamber where it picks up even more heat and then is collected in the reservoir. This heated water is then supplied to the water storage tank either by pump or gravity feed.

THE ENERGY BONUS

The normal combustion process of natural gas combines hydrogen and oxygen chemically to form water, which is instantly vaporized by the heat of combustion. This process absorbs about 12% of the total heat released by the fuel and it is normally lost to the atmosphere with the boiler exhaust gases. The Supermizer ends this loss. As the hot exhaust pass through the Packed Mass heat exchanger, the gases cool so much that the water vapor in the combustion gases condense out releasing the heat it took to vaporize it initially.

Thermal Engineering's DC-2 SUPERMIZERS can be installed either hanging from the ceiling, mounted on the roof or on the floor. The following describes each option:

Style 1 – Ceiling Hung. Support lugs are provided for customer's supplied rods to hang the unit from. Pre-heated water gravity flows to the water storage tank or Direct Contact Water Heater.

Style 2 – Roof Mounted. Identical shape to Style 1 except support legs are supplied for mounting. Pre-heated water gravity flows to water storage tank. Unit and services must be protected from freezing.

Style 3 – Floor Mounted. Water transfer pump is supplied. Pre-heated water is transferred from the internal reservoir to the hot water storage tank by a transfer pump.

Installation of a DC-2-500 SUPERMIZER servicing a 500 H.P. boiler.

Installation of a DC-2-300 SUPERMIZER servicing a 300 HP. Fulton Hot Oil Boiler. Note simple support frame eliminates structural roof support members

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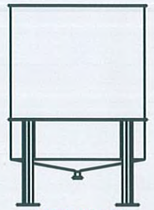
Some "TEA Tank" Styles

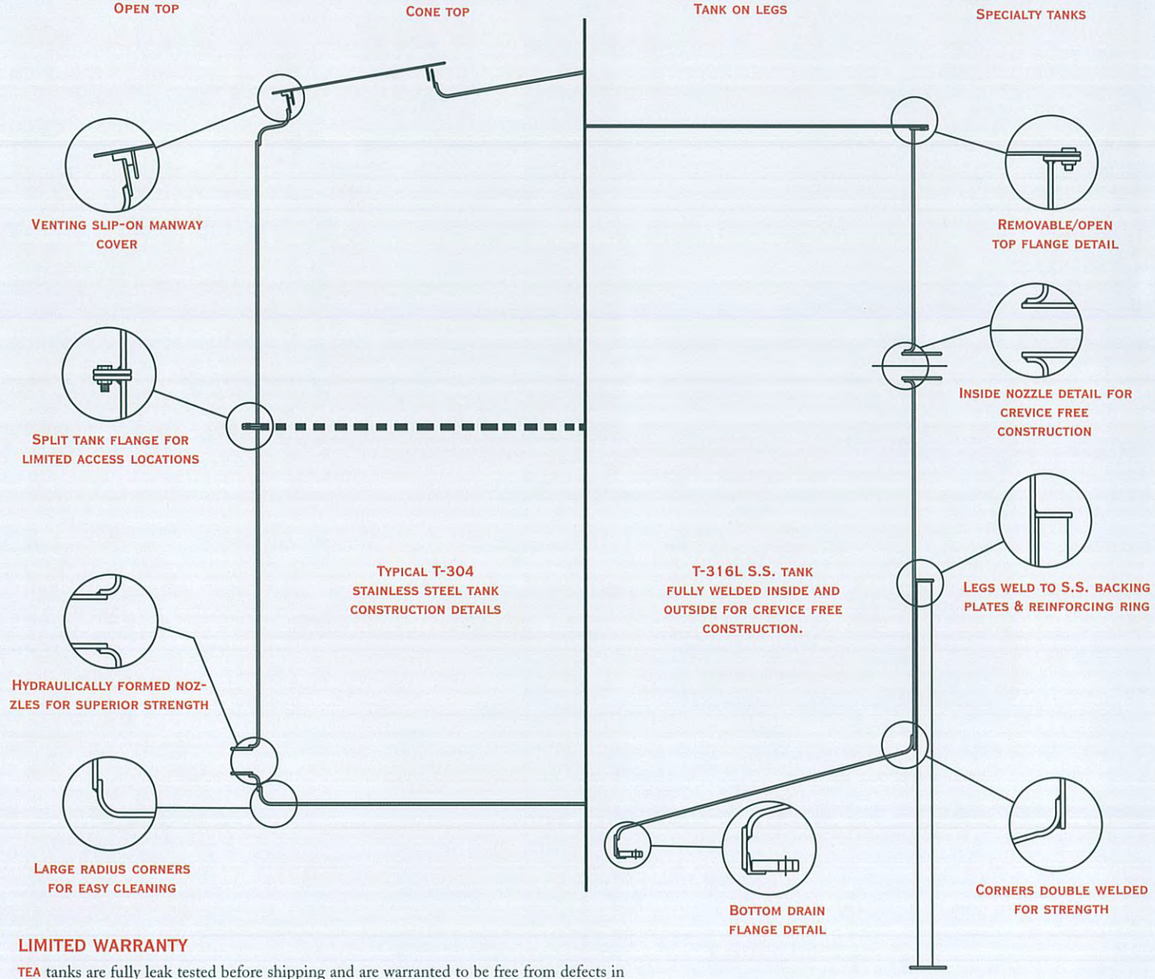
Open top

Cone top



Tank on legs

Specialty tanks



LIMITED WARRANTY

TEA tanks are fully leak tested before shipping and are warranted to be free from defects in workmanship and material up to the time of initial installation and test only. In the event of a claim, TEA's obligation and liability are strictly limited to the repair of replacement, at TEA's discretion, at its plant of manufacture. All shipping costs to be by purchaser. It is the users responsibility to determine the suitability of the tank being considered for the final use.

Represented By

Thermal Engineering of Arizona, inc.
2250 W. Wetmore
Tucson, Arizona 85705 U.S.A.
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Fax (520) 888-4457
email: sales@teatucson.com

SAXDF002 2/00

STAINLESS STEEL TANKS

from

T.E.A.

Thermal Engineering of Arizona, inc.

TEA's STAINLESS STEEL TANKS

TEA TANKS are specifically manufactured to commercial standards to meet the storage and processing needs of most industrial applications. Unique forming and welding techniques result in finished tanks which have excellent functionality when compared to purchased cost.

Tanks are quickly available in either T-304 or T-316L Stainless Steel. They are either flat bottomed or coned bottom on legs. Tops can be open, flat, cone, or with removable covers.

Standard finish is #2b mill. Other mill finishes available on special order. Outside welds cleaned of scale and discoloration. For most applications, T-304 is TEA's standard tank material. These tanks will have internal crevices and should not be used for sensitive processing where cleaning and/or cross contamination can be a problem.

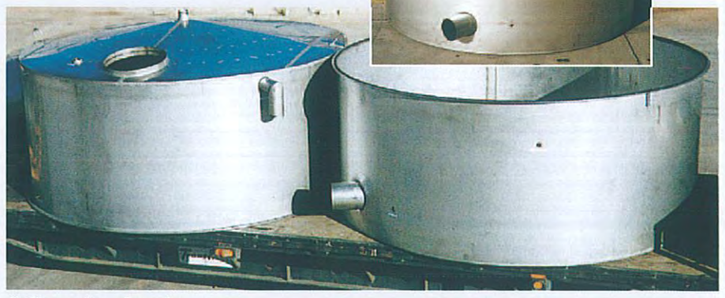
T-316L stainless steel offers higher corrosion resistance to most products. Double thickness overlapping joints are fully welded both inside and out. This no-crevice construction allows for easy cleaning, preventing product cross contamination. This construction will exceed the most demanding application requirements.

TEA TANKS are designed to hold liquid or solid materials up to a specific gravity of 1.2 at atmospheric pressure.

TEA is well qualified to fabricate custom designed tanks of up to 1/2" thick stainless steel, up to 12 feet in diameter, and to 24 feet high. Please contact TEA directly.

Four of sixteen 12,000 gallon T-316L stainless steel tanks for acidic leach solution in mining operations for Bechtel Corp.

Bottoms and tops have full radius rolled corners for reduced weld distortion and ease of cleaning.

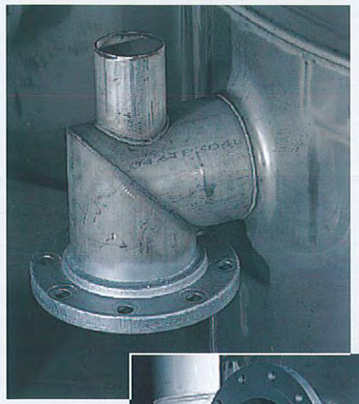


Split sectioned tanks.

Tanks can be manufactured in a split design for limited access installations. Each section will be flanged and all that is required for assembly is to apply the supplied Gortex seal and bolt the sections together. These tanks can be custom engineered for special requirements.

ACCESSORIES AND OPTIONAL EQUIPMENT

- Fittings — couplings, nipples and groove lock.
- Flanges — up to 12" stainless steel lap type with galvanized back-up flanges. Stainless steel slip on flanges optional.
- Bolted side manways.
- Top cover manways — either bolted, slip-on or lockable.
- Bolted on ladders and top railings.
- Immersion heating coil mounting flanges
- Sight Tubes — ridged acrylic standard.
- Support Rails — for top mounted agitator.
- Internal Baffles — for effective top to bottom mixing.
- Tank overflows/vents per request.

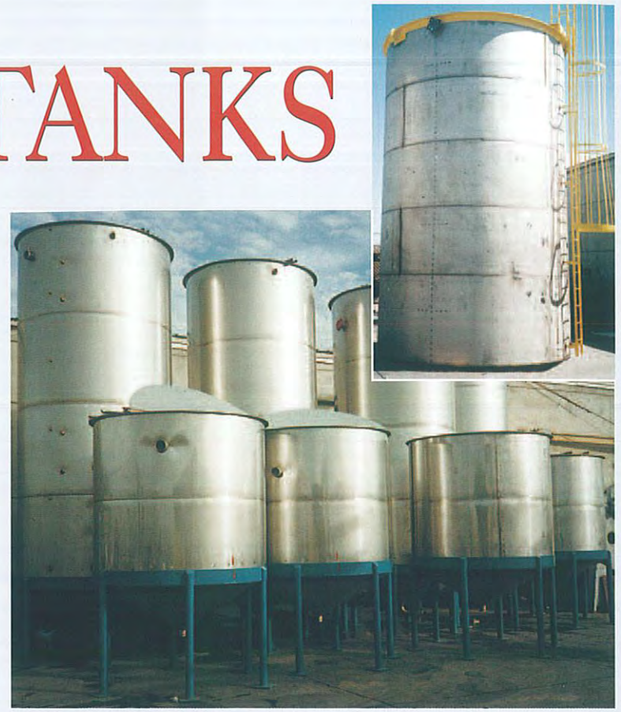


All fittings are mounted in hydraulically extruded nozzles for strength.

Nozzles are extruded outward on T-304 S.S. tanks and inward on T-316L S.S. tanks for crevice elimination.

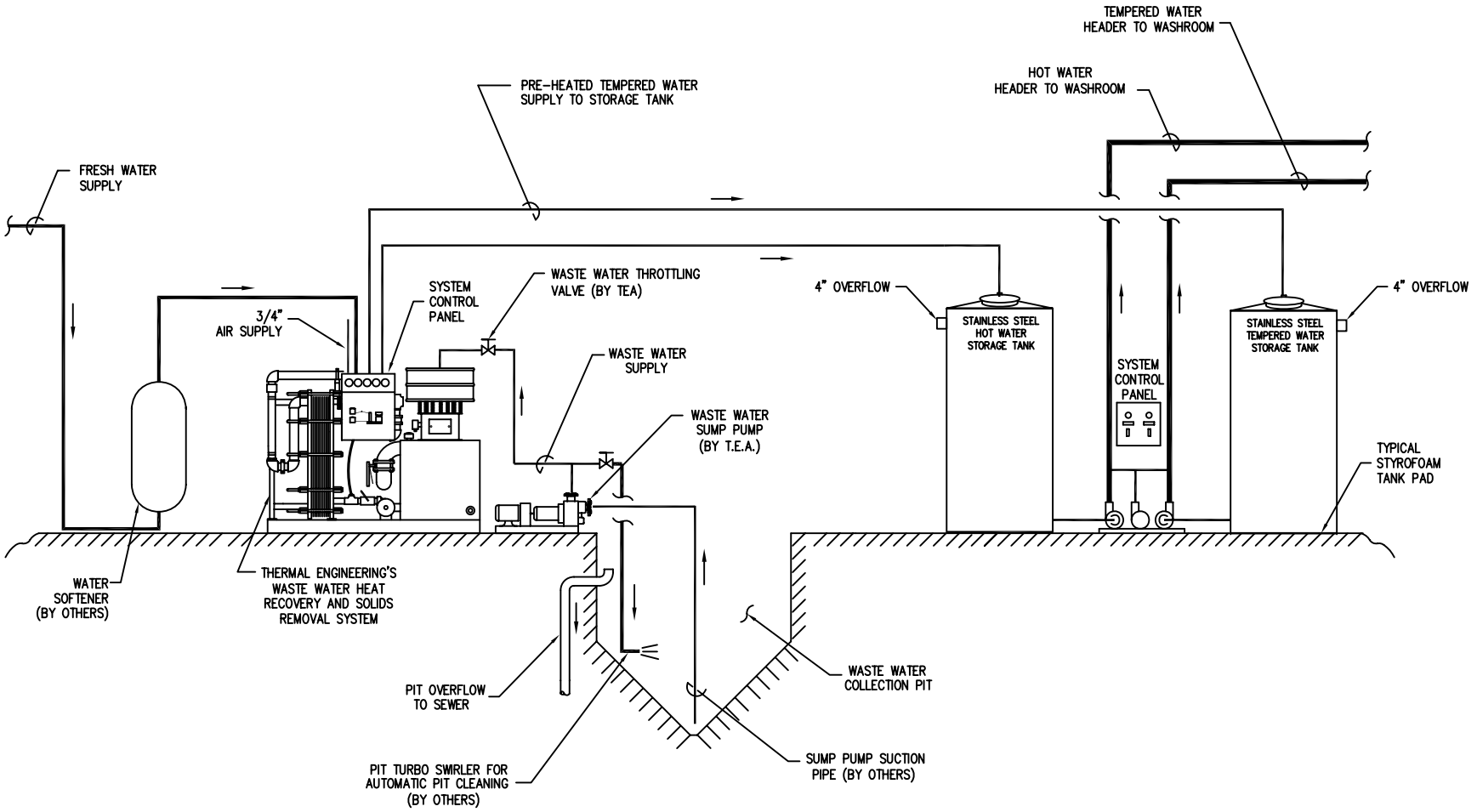
Four fittings up to 2 inch in diameter are standard. Larger fittings and greater quantities are available.

Standard tank components are pre-fabricated and stocked for rapid assembly. Standard tanks can be shipped in two weeks after ordering. Special requirements may require longer lead times.



Ladders, working platforms, equipment mounts and other structural attachments available.

T.E.A.



TOLERANCES	REVISIONS	BY	DATE
FRACTIONS=±1/16" ANGLES=±3°	⚠11/21/03	ROC	11/21/03
0.X=± 0.0X=± 0.00X= ±		ISSUED	DATE
MAT.–		DEPT. HEAD	DATE
STOCK P/N		FOREMAN	DATE
FINISH–		OTHER	DATE

Thermal Engineering of Arizona, Inc.
T E A
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2250 W. Wetmore Tucson Arizona 85705 U.S.A. FAX: 520-888-4457

TYPICAL FLOW DIAGRAM

TR-SYSTEM

–

TAKEN FROM	SO #	SCALE	DWG #	SHEET	REV
–	–	NTS	TB-1083	1 OF 1	A

LIND INDUSTRIES INC. dba
LIND
LAUNDRY SYSTEMS

(206) 517-5463
FAX (206) 517-5493

April 9, 2018

Washington State DSHS
Larry Covey - Capital Project Manager
Operations Support and Services Division
PO BOX 45848
MS: 45848
OLYMPIA, WA 98597 Email: Larry.Covey@dshs.wa.gov

Conceptual Laundry Fircrest School Shoreline, WA

Task – 70,000 pounds a month to be processed in a 40-hour work week.

70,000 lbs./month ÷ 4.33 weeks= 16,167 lbs. per week
16,167 lbs. ÷ 40 hour per week = 404 lbs. per hour to be produced.

Laundry equipment

QTY	Equipment/Description (See Attachments for Additional Detail)	Unit Price	Total Price
2	Braun Medicare Top-Side Loading Washer/Extractor	$108,840.00	$217,680.00
1	Braun Natural Gas Fired Dryer	$119,140.00	$119,140.00
1	Braun Precision Series® 2-Roll, 32in. Ø Steam-Heated Ironer	$181,965.00	$181,965.00
1	Braun Precision Series® 4 Lane 2 Fold Primary/1 Lane 3 Fold Cross Folder	$77,978.40	$77,978.40
1	Braun Precision Series® Small Piece Folder	$45,775.00	$45,775.00
1	125 lbs. Unimac Washer	$36,953.00	$36,953.00
1	170 lbs Unimac Dryer	$16,234.00	$16,234.00
2	Platform Scales with Printers		$7,494.00
2	Electric Hoists		$4,800.00
1	5 hp Air Compressor System		$4,650.00
40	Landry Carts & Slings (about 40 each)		$25,000.00

LIND INDUSTRIES INC. dba
LIND
LAUNDRY SYSTEMS

April 9, 2018

Water System

QTY	Equipment/Description (See Attachments for Additional Detail)	Unit Price	Total Price
1	TEA TR-2 Wastewater Heat Recovery System	$63,495.00	$63,495.00
1	TEA 800 GAL Stainless Steel Hot Water Storage Tank	$8,570.00	$8,570.00
1	TEA Steam Immersion Water Heating System	$9,025.00	$9,025.00
1	TEA Steam Steel Tempered Water Storage Tank	$8,199.00	$8,199.00
1	TEA Triple Pumping Package - 5 HP	$18,895.00	$18,895.00

100 HP Steam Boiler System

QTY	Equipment/Description (See Attachments for Additional Detail)	Unit Price	Total Price
1	90 to 100 hp Steam Boiler System	$95,950.00	$95,950.00

Estimated figures do not include allowances for freight or installation.

Thank You,

Neil Lind
Lind Industries, Inc d.b.a.
Lind Laundry Systems
9615 STONE AVE N
SEATTLE, WA 98103-3337
USA
TEL: 206-517-5463
FAX: 206-517-5493
e-mail: neil@lindindustries.com www.lindindustries.com

IND INDUSTRIES INC. dba
IND
LAUNDRY SYSTEMS

(206) 517-5463
FAX (206) 517-5493

October 1, 2018

Sage Architectural Alliance
Valerie Thiel
Tel: 206-694-3441
Email: Val@SageArchAlliance.com

Conceptual Laundry Fircrest School Shoreline, WA

Task – 70,000 pounds a month to be processed in a 40-hour work week.

70,000 lbs./month ÷ 4.33 weeks= 16,167 lbs. per week
16,167 lbs. ÷ 40 hour per week = 404 lbs. per hour to be produced.

Hours each piece of equipment will operate per shift to accomplish the task.

Laundry equipment

1	Braun Precision Series® 2-Roll, 32in. Ø Steam-Heated Ironer	6 hours
1	Braun Precision Series® 4 Lane 2 Fold Primary/1 Lane 3 Fold Cross Folder	6 hours
1	Braun Precision Series® Small Piece Folder	4 hours
1	125 lbs. Unimac Washer	4 hours
1	170 lbs Unimac Dryer	4 hours
2	Platform Scales with Printers	1 hour each
2	Electric Hoists	2 hours each
1	5 hp Air Compressor System	4 hours
40	Landry Carts & Slings (about 40 each)	
1	Soil Sorting System - 1 hp	6 hours

LIND INDUSTRIES INC. dba
LIND
LAUNDRY SYSTEMS

September 17, 2018

Water System

QTY	Equipment/Description (See Attachments for Additional Detail)	
1	TEA TR-2 Wastewater Heat Recovery System	7 hours
1	TEA 800 GAL Stainless Steel Hot Water Storage Tank	no req
1	TEA Steam Immersion Water Heating System	no req
1	TEA Steam Steel Tempered Water Storage Tank	no req
1	TEA Triple Pumping Package - 5 HP	4 hours
1	TEA DC-2 Direct Contac Stack Economizer	no req

100 HP Steam Boiler System

QTY	Equipment/Description (See Attachments for Additional Detail)	
1	90 to 100 hp Steam Boiler System	8 hours

Thank You,

Neil Lind
Lind Industries, Inc ***d.b.a.***
Lind Laundry Systems
9615 STONE AVE N
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USA
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e-mail: neil@lindindustries.com www.lindindustries.com

ASSUMPTIONS

The following narratives for each mechanical system are described by the following headings as follow:

- Mechanical Code Analysis
- Net Zero Energy Mechanical Systems
- New Construction Madrona Site
  - Net Zero Energy Equipment Sizes
- Laundry Building Mechanical Systems

MECHANICAL CODE ANALYSIS

Applicable codes and standards shall include, but not necessarily be limited to:

- 2018 FGI Guidelines for Design and Construction of Residential Health Care, and Support Facilities.
- 2015 Health Care Facilities Code (NFPA 99)
- 2015 Washington State Energy Code
- Uniform Plumbing Code, by International Association of Plumbing and Mechanical Officials.
- International Mechanical Code, by International Code Council.
- International Building Code, by International Code Council.
- Requirements of OSHA, EPA and WISHA.
- National Fire Protection Association Codes.
- ASME codes for boiler and pressure vessels.
- SMACNA HVAC Duct Construction Standards, latest edition.
- All local and state amendments.
- Requirements of all agencies have jurisdictional authority over installation of mechanical systems.

NET ZERO ENERGY MECHANICAL SYSTEMS

Fire Protection

Fire protection system will be a wet sprinkler system and will provide coverage to all spaces. The fire protection system will include the following, but not necessarily be limited to:

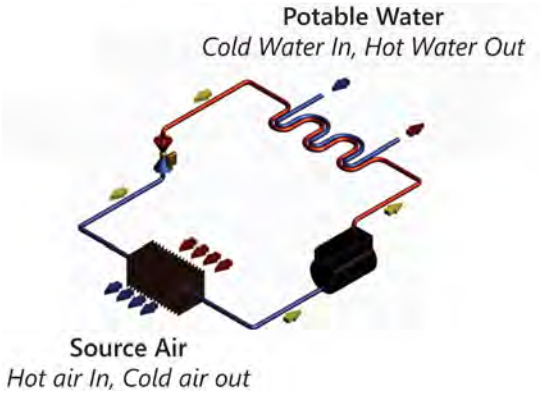
- Belowground fire service to building
- Backflow preventer (double check valve assembly)
- Wet sprinkler piping
- Wet pipe alarm check valve
- Fire Department inlet connection
- Supervisory (tamper) switches
- Water flow switches
- Zone control valves
- Isolation and check valves
- Inspector's test connection
- Sprinkler heads
- Seismic restraints
- In new construction, crawl space will not be sprinkled.

Plumbing System

Domestic cold water service to the building will be connected to the campus water distribution loop with water meter and backflow preventer at the building service connection. The backflow preventer will be installed in the mechanical room with floor drain.

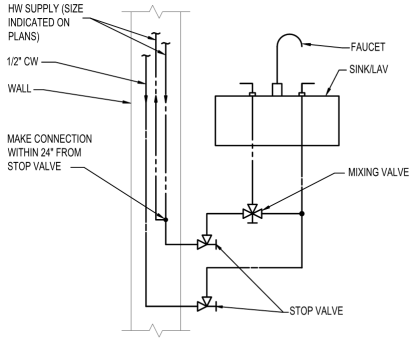
Domestic hot water system will be based on an air source heat pump water heater. The hot water heater will be similar to Colmac Waterheat model HPA7 Propeller Fan with hot water storage tank. The hot water will be circulated through the system by circulated pump to maintain constant temperature in the piping. The hot water heater will maintain minimum of 145 deg F to minimize the potential growth of

legionella and 125 deg F water will be distributed through the building through thermostatic mixing valve. 125 deg F hot water will be further reduced to 110 deg F at the sink by the local thermostatic mixing valve. The plumbing system will be designed to include the consideration of Legionella response per 2018 FGI Guideline Section A2.5-2.2.3. The hot water system will be connected to the adjacent hot water system to provide back up in the event of the hot water heater failure or the maintenance service shut down. The inter connecting piping will be normally closed and opened during backup.



Air Source Heat Pump Water Heater

Cold & Hot Water design will include consideration to minimize piping dead legs to prevent any growth within the piping system. In addition, hot water piping loop will be routed in the wall from the ceiling to plumbing fixture stop valve within 12 inches, so that each fixture will receive hot water immediately to minimize water waste. Each faucet will have laminar flow type low flow discharge tips (non-aerated). All hand washing sink including wall mounted lavatory will be selected without an over flow outlet.



1 SINK/LAVATORY TYPICAL PIPING CONNECTION DIAGRAM
SCALE: NONE

Hot water temperature to laundry washing machine will be raised to 165 deg F for proper sanitization of the soiled materials.

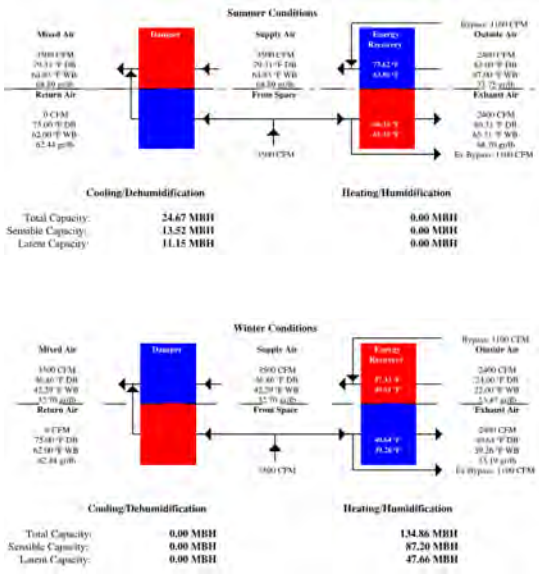
The plumbing system will include the following, but not necessarily be limited to:

- Domestic Water Service Meter
- Belowground domestic water service to the building
- Backflow Preventers
- Air Source Heat Pump Hot Water Heater
- Hot Water Storage Tank
- Electric Booster Hot Water Heater for laundry washing machine
- Roof Drainage, Waste and Vent Piping
- Indirect Waste Piping
- Hot and Cold Water Piping
- Hot Water Recirculation Piping and Circulating Pump
- Seismic Restraints
- Isolation Valves
- Hose Bibbs/Wall Hydrants
- Plumbing Fixtures and Trim
- Sewer Connection to Street
- Storm Connection to Street

HVAC

HVAC system will be based on a Variable Flow Refrigeration (VRF) system with Dedicated Outside Air System (DOAS).

DOAS system will be 100% outside air (OA) with energy recovery wheel and sized to provide required airflow and air changes per hour requirement per 2018 FGI Guidelines for Design and Construction of Residential Health Care, and Support Facilities. DOAS unit will be a heat pump type packaged roof top unit similar to AAON RN Roof Top Unit with Energy Recovery System. DOAS OA air intake will be minimum of 36 inches above finished roof elevation as required by FGI Guidelines.



Typical DOAS RTU with Energy Recover System Diagram

100% conditioned outside air will be distributed to each space through insulated ductwork.

Each space will be heated and cooled by VRF fan coil unit (FCU). Wall mounted type will be used for bedrooms and ceiling cassette type will be used for Living Rooms, Activity Rooms, TV Rooms, and other support rooms. Wall or ceiling mounted units will be used and will not require closet or floor space for installation and minimizes the total building square foot requirements. Air cooled outdoor unit will be located on the roof within the sloped roof well. The installation of the roof top equipment will include the review of the noise and the vibration to minimize any transmission to the occupied space below.

Wall Mounted Unit

Ceiling Cassette Unit

Exhaust will be provided to shower rooms, toilet rooms, and soiled rooms and collected through the ductwork. Exhaust fan will be located on the roof and will

discharge air minimum of 25 feet away from DOAS air intake.

The building Direct Digital Control (DDC) system will be connected to the campus control system and all major equipment will be monitored through the DDC system operator's work station in the maintenance building.

The HVAC system will include the following, but not necessarily be limited to:

- VRF Air Cooled Condenser
- VRF Room Air Conditioner
- Refrigeration Piping
- Condensate drain piping
- DOAS Roof Top Unit
- Energy Recovery System
- Self-Contained Unitary Air Conditioner/Heat Pump
- Heat Recovery Equipment
- Ductwork
- Diffusers, Registers and Grilles
- Electric Infrared Unit Heaters for covered court yard
- HVAC Control Systems
- Seismic Restraints

LAUNDRY BUILDING MECHANICAL SYSTEMS

Fire Protection

Fire protection system will be a wet sprinkler system and will provide coverage to all spaces. The fire protection system will include the following, but not necessarily be limited to:

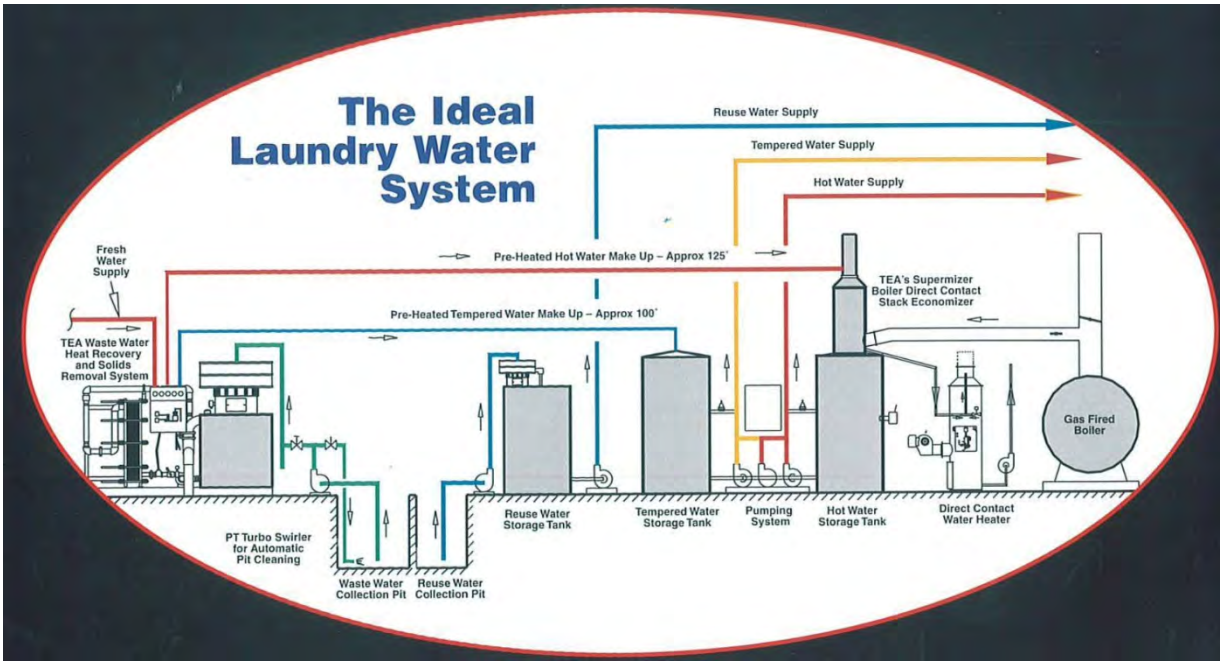
- Belowground fire service to building
- Backflow preventer (double check valve assembly)
- Wet sprinkler piping
- Wet pipe alarm check valve
- Fire Department inlet connection
- Supervisory (tamper) switches
- Water flow switches
- Zone control valves
- Isolation and check valves
- Inspector's test connection
- Sprinkler heads
- High temperature rated sprinkler head in the laundry equipment area.
- Seismic restraints
- In new construction, crawl space will not be sprinkled.

Plumbing System

4" Domestic cold water service to the building will be connected to the campus water distribution loop with water meter and backflow preventer at the building service connection. The backflow preventer will be installed in the mechanical room with floor drain. Additional backflow preventers will be provided for laundry equipment cold water & hot water systems and steam boiler makeup water system.

Domestic hot water system for toilet rooms will be based on the single point of use tankless electric water heater similar to Rheem RTEX-04. Laundry equipment hot water heater will be generated from the steam immersion water heating system. The hot water will be stored in stainless steel storage tank. The hot water will be circulated through the system by circulated pump to maintain constant temperature in the piping. The hot water temperature will be based on the laundry equipment requirements. The plumbing system will be designed to include the consideration of Legionella response per 2018 FGI Guideline Section A2.5-2.2.3.

Cold & Hot Water design will include consideration to minimize piping dead legs to prevent any growth within the piping system. In addition, hot water piping loop will be routed in the wall from the ceiling to plumbing fixture stop valve and the laundry equipment within 12 inches, so that each fixture and equipment will receive hot water immediately to minimize water waste.



The waste water heat recovery system will recover heat from the waste water and the system will temper cold water that will be used for the laundry process. Tempered water will be stored in the tempered water storage tank. It is estimated to recover approximately 30% to 40% of heat (energy) from the waste water. The waste water heat recovery will consist of plate heat exchanger, shaker screen to remove suspended solids, and associated control system to optimize the energy recovery.

The plumbing system will include the following, but no necessarily be limited to:

- Domestic Water Service Meter
- Belowground domestic water service to the building
- Backflow Preventers for building service entrance and additional backflow preventers for laundry equipment water supply connections.
- Single point of use tankless electric water heater for toilets.
- Steam boiler vent.
- 90 to 100 hp Steam Boiler System*
- Direct Contact Stack Economizer*
- Steam immersion water heater*
- Steel Tempered Water Storage Tank*
- S.S. Hot Water Storage Tank*
- Pumping package*
- Gas Fired Dryer*
- Steam heated ironer*
- Washer*
- Dryer*
- Air compressor*
- Waste water heat recovery system*
- Roof Drainage, Waste and Vent Piping
- Indirect Waste Piping
- Hot and Cold Water Piping

- Hot Water Recirculation Piping and Circulating Pump
- Seismic Restraints
- Isolation Valves
- Hose Bibbs/Wall Hydrants
- Plumbing Fixtures and Trim
- Sewer Connection to Street
- Storm Connection to Street

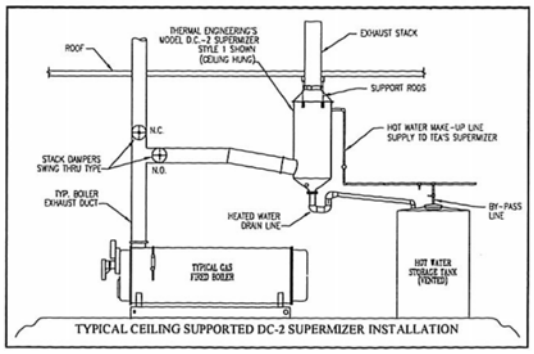
"*" indicates the equipment/system that are part of the laundry equipment which are not furnished by the plumbing/mechanical contractor. The required piping connections will be provided by the plumbing/mechanical contractor.

HVAC

HVAC system will be based on a split DX heat pump, wall mounted indoor unit and outdoor unit for office room and a support room. Each unit will be sized for 6,000 btuh (200 cfm each). Outside air will be provided from the Dedicated Outside Air System (DOAS) unit with plate heat exchanger with supply fan & exhaust fan (100 cfm system).

The laundry area will be conditioned by three (3) packaged DX heat pump roof top units, each sized for 20 ton or 240 mbh. The supply air will be distributed through the exposed ductwork in the space. The return and exhaust air openings will be located to capture the heat from the equipment and will be exhausted to outdoor and/or returned to the units.

Gas fired steam boiler serving the laundry equipment will be equipped with Direct Contact Stack Economizer to re-claim energy from the flue gas and will temper the cold and hot water used for laundry equipment. It is estimated to recover approximately 30% to 40% of heat (energy) from the flue gas. The flue gas energy recovery system will consist of heat exchanger, dampers, actuators, and associated control system to optimize the energy recovery.



Direct Contact Stack Economizer Diagram

The building Direct Digital Control (DDC) system will be connected to the campus control system and all major equipment will be monitored through the DDC system operator's work station in the maintenance building.

The HVAC system will include the following, but not necessarily be limited to:

- Split DX heat pump wall mounted indoor and outdoor unit for Office and support rooms
- Refrigeration Piping
- Condensate drain piping
- DOAS plate heat exchanger energy recovery ceiling mounted unit.
- Packaged DX Unitary Air Conditioner/Heat Pump Roof Top Unit for laundry area conditioning
- Ductwork
- Diffusers, Registers and Grilles
- HVAC Control Systems
- Seismic Restraints
- Miscellaneous exhaust system and fans for laundry equipment
- Steam boiler vent.

- 90 to 100 hp Steam Boiler System*
- Direct Contact Stack Economizer*
- Steam immersion water heater*
- Steel Tempered Water Storage Tank*
- S.S. Hot Water Storage Tank*
- Pumping package*
- Gas Fired Dryer*
- Steam heated ironer*
- Washer*
- Dryer*
- Air compressor*
- Waste water heat recovery system*

"*" indicates the equipment/system that are part of the laundry equipment which are not furnished by the plumbing/mechanical contractor. The required piping, venting, and duct connections will be provided by the plumbing/mechanical contractor.

ELECTRICAL CODE ANALYSIS

2017 National Electric Code (NFPA 70)

2018 FGI Guidelines for Design and Construction of Residential Health Care, and Support Facilities.

2015 Health Care Facilities Code (NFPA 99)

2015 Washington State Energy Code

2012 Life Safety Code (NFPA 101)

Laundry

An approximate 6000 square foot Laundry will be provided to serve the Fircrest campus. Electric service will be provided from an approximate 500 kVA outdoor, oil filled, pad mount transformer separate from the Nursing Home electric service. A main service entrance disconnect will be provided inside the laundry facility and power distributed to equipment through electrical panels. Electrical panels will have door-in-door construction. Much of the laundry equipment will be gas fired or steam supplied. Lighting will be LED. Essential power will be provided only to allow for egress of the building, not to allow continued use of the facility. The facility will be air conditioned. Telecommunications will be provided from the campus fiber system and a small Main Distribution Facility (MDF) will be provided in the facility. The building will have an analog addressable fire alarm system with full space smoke detection and the building is assumed to be fully sprinklered. Fire alarm notification will use voice/strobe appliances. Security will consist of a stand alone security system with intrusion detection at all exterior doors, card access to the staff entrance door, and security video cameras at select locations. The system will be monitored at the campus security office. This building is not considered to be part of the Net Zero alternate as power consumption and the varying utilities required for service do not make Net Zero a viable concept.

Energy Cost Budget / PRM Summary

By WOOD HARBINGER INC.

Project Name: Fircrest and Rainier School Nursing Fac	Date: October 09, 2018
City: Buckley WA	Weather Data: Seattle, Washington

Note: The percentage displayed for the "Proposed/ Base %" column of the base case is actually the percentage of the total energy consumption.

* Denotes the base alternative for the ECB study.

		* Alt-1 Utility Bldg Costs		
		Energy 10^6 Btu/yr	Proposed / Base %	Peak kBtuh
Lighting - Conditioned	Electricity	99.4	4	21
Space Heating	Electricity	12.2	0	4
	Gas	1,301.3	51	533
Space Cooling	Electricity	83.6	3	146
Pumps	Electricity	56.3	2	17
Heat Rejection	Electricity	7.0	0	12
Fans - Conditioned	Electricity	365.8	14	149
Receptacles - Conditioned	Electricity	375.6	15	292
	Gas	236.2	9	200
Total Building Consumption		**2,537.4**		

		* Alt-1 Utility Bldg Costs
Total	**Number of hours heating load not met**	0
	Number of hours cooling load not met	0

	* Alt-1 Utility Bldg Costs	
	Energy 10^6 Btu/yr	Cost/yr $/yr
Electricity	999.8	33,877
Gas	1,537.6	41,045
Total	**2,537**	**74,922**

THE ROBINSON COMPANY

PROJECT: NURSING FACILITY AT FIRCREST SCHOOL - LAUNDRY
LOCATION: SHORELINE, WA
BLDG SF: 7,000
ESTIMATE: 2018096
EST TYPE: COST MODEL

DIVISION	DESCRIPTION		TOTAL	$/SF
A10	FOUNDATIONS		140,000	20.00
B10	SUPERSTRUCTURE		126,000	18.00
B20	EXTERIOR CLOSURE		583,645	83.38
B30	ROOFING		160,050	22.86
C10	INTERIOR CONSTRUCTION		216,584	30.94
C30	INTERIOR FINISHES		158,705	22.67
D20	PLUMBING		491,000	70.14
D30	HVAC		556,000	79.43
D40	FIRE PROTECTION		64,500	9.21
D50	ELECTRICAL		744,100	106.30
E10	EQUIPMENT		1,290,079	184.30
E20	FURNISHINGS		7,500	1.07
G10	SITE PREPARATION		89,556	12.79
G20	SITE IMPROVEMENTS		42,000	6.00
G30	SITE CIVIL / MECHANICAL UTILITIES		159,800	22.83
G40	SITE ELECTRICAL UTILITIES		25,000	3.57
Z10	GENERAL REQUIREMENTS		250,000	35.71
	ESTIMATE SUBTOTAL		**5,104,519**	**729.22**
	DESIGN CONTINGENCY @	10.00%	510,452	
	SUBTOTAL		5,614,970	
	GENERAL CONTRACTOR'S OH & P @	8.00%	449,198	
	TOTAL		**6,064,168**	**866.31**

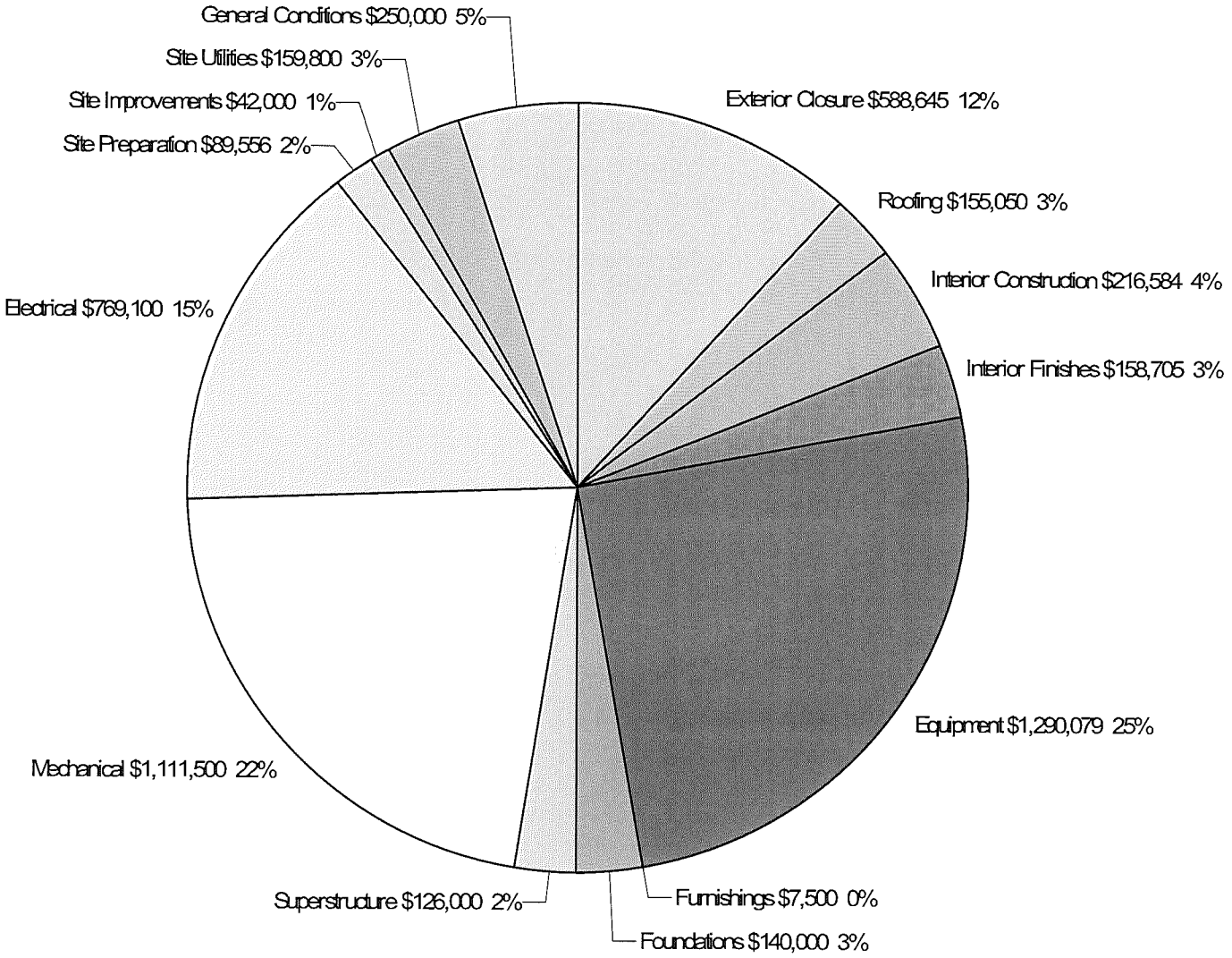
EXCLUSIONS:
SEE ESTIMATE SUMMARY

PROJECT: NURSING FACILITY AT FIRCREST SCHOOL - LAUNDRY
LOCATION: SHORELINE, WA
BLDG SF: 7,000
ESTIMATE: 2018096
EST TYPE: COST MODEL

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	$/SF
A10	**FOUNDATIONS**					
03300	SLAB ON GRADE	7,000	SF	8.00	56,000	
03310	FOUNDATIONS	7,000	SFA	12.00	84,000	
A10	**FOUNDATIONS**			**DIVISION TOTAL**	**140,000**	**20.00**
06110	WOOD ROOF FRAMING	7,000	SFA	18.00	126,000	
6110	EXTERIOR WALL W/O INT FACE	6970	SF	$19.00		
6110	MISC FRAMING @ GLAZING	1530	SF	$10.00		
7450	HARDI REVEAL	6970	SF	$24.00		
7450	MISC FLASHING/TRIM	8500	SFA	$2.00		
8110	EXT DOORS/FRM/HRDWRE	3	EA	$2,500.00		
8110	OVERHEAD DOORS	3	EA	$4,000.00		
8500	EXT GLAZING-ALLOW 18% DOUBLE GLAZED	1530	SF	$72.00		
9260	WATER RESISTANT BOARD/EPOXY PAINT	6970	SF	$15.00		
9910	EXTERIOR PAINTING/SEALING	6970	SFA	$2.50		
7210	R-60 BLOWN-IN INSULATION	7000	SF	$3.65		
7500	MEMBRANE ROOF SYSTEM	7000	SF	$15.00		
7620	MISC FLASHING/SHEET METAL	7000	SF	$2.50		
7710	FALL PROTECTION ALLOWANCE	7000	SFA	$1.00		
7720	ROOF HATCH W/LADDER	1	EA	$5,000.00		
8200	INT. DR/FRM/HRDWRE	14	EA	$1,750.00		
8500	INTERIOR RELITES/SIDE LITES ALLOWANCE	120	SF	$50.00		
9260	INTERIOR WALLS	5782	SF	$12.00		
9260	PREMIUM FOR WR BOARD AND EPOXY PAINT	5780	SF	$15.00		
10000	MISC SPECIALTIES/SIGNAGE	7000	SFA	$3.00		
10000	TOILET PARTITIONS/ACCESSORIES	1	LS	$9,000.00		
6250	FINISH/ROUGH CARPENTRY ALLOWANCE	7000	SFA	$3.00		
9300	TILE AT RESTROOMS	910	SF	$18.00		
9500	WASHABLE CEILING TILES/GWB MIX	7000	SF	$6.50		
9600	POLISHED/STAINED CONCRETE FLOOR	6000	SF	$8.50		
9600	TILE AT RESTROOM FLOORS	300	SF	$18.00		
9680	CARPET AT OFFICE	700	SF	$5.25		
9700	INTERIOR PAINTING	7000	SFA	$2.25		
15410	PLUMBING	1	LS	$491,000.00		
	PER A/E					
15700	HEATING/VENTILATION	1	LS	$556,000.00		
	PER A/E					
15300	SPRINKLERS	1	LS	$64,500.00		
	PER A/E					
16000	ELECTRICAL	7000	SFA	$83.00		
	PER A/E					
16400	LOW VOLTAGE WORK	7000	SFA	$8.60		
	PER A/E					
16700	LIFE SAFETY	7000	SFA	$14.70		
	PER A/E					
11000	MISC EQUIPMENT/APPLIANCES	1	LS	$7,500.00		
11440	COMMERCIAL LAUNDRY EQUIPEMT	1	LS	###########		
	PER LIND					

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	$/SF
11440	DELIVERY AND INSTALLATION-ALLOWANCE	1	LS	$150,000.00		
12000	CABINETS @ MEETING ROOM	1	LS	$7,500.00		
2220	DEMO/FILL STEAM TUNNELS-ALLOWANCE	1	LS	$25,000.00		
2220	FINE GRADING	12250	SF	$0.35		
2220	SITE DEMO/STRIPPING	12500	SFA	$1.00		
2220	UTILITY DEMO/ABANDON/RELOCATE	1	LS	$5,000.00		
2315	EXCAVATE AND PLACE ONSITE-ALLOW	486	CY	$18.00		
2315	EXCAVATE/HAUL/IMPORT-TRUCK YARDS	486	CY	$70.00		
2740	NEW PARKING AREA	5000	SF	$4.00		
2900	LANDSCAPING/LAWN/FURNISHINGS-ALLOWANCE	1	LS	$2,000.00		
3300	SIDEWALK ALLOWANCE	2500	SF	$8.00		
2510	BACKFLOW PREVENTORS/OTHER	1	LS	$25,000.00		
2510	FIRE HYDRANTS-ALLOW	1	EA	$5,000.00		
2510	WATER LINE-12"	200	LF	$85.00		
2530	GREASE INTERCEPTOR	1	LS	$35,000.00		
2530	SEWER LINE	200	LF	$45.00		
2550	GAS LINE	100	LF	$120.00		
2630	FOOTING DRAINS	340	LF	$20.00		
2630	STORM COLLECTION ALLOWANCE	1	LS	$50,000.00		
16520	SITE LIGHTING	1	LS	25,000	25,000	
01000	GENERAL CONDITIONS	1	LS	250,000	250,000	
				ESTIMATE SUBTOTAL	**478,000**	**68.29**

THE
ROBINSON
COMPANY



STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Agency	Department of Social and Health Services
Project Name	New Laundry Building
OFM Project Number	

Contact Information	
Name	Sage Architectural Alliance/The Robinson Company
Phone Number	206 556-4181/206 441-8872
Email	

Statistics			
Gross Square Feet	7,000	MACC per Square Foot	$866
Usable Square Feet	6,850	Escalated MACC per Square Foot	$966
Space Efficiency	97.9%	A/E Fee Class	B
Construction Type	Nursing homes	A/E Fee Percentage	8.53%
Remodel	No	Projected Life of Asset (Years)	
Additional Project Details			
Alternative Public Works Project	No	Art Requirement Applies	
Inflation Rate	3.12%	Higher Ed Institution	
Sales Tax Rate %	10.10%	Location Used for Tax Rate	
Contingency Rate	5%		
Base Month	June-18		
Project Administered By	Agency		

Schedule			
Predesign Start	June-18	Predesign End	October-18
Design Start	November-19	Design End	February-21
Construction Start	April-21	Construction End	October-22
Construction Duration	18 Months		

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Project Cost Estimate

Total Project	**$8,705,785**	Total Project Escalated	**$9,660,761**
		Rounded Escalated Total	**$9,661,000**

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Agency	Department of Social and Health Services
Project Name	New Laundry Building
OFM Project Number	

Cost Estimate Summary

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$0		
A/E Basic Design Services	$374,761		
Extra Services	$473,000		
Other Services	$228,371		
Design Services Contingency	$53,807		
Consultant Services Subtotal	**$1,129,939**	**Consultant Services Subtotal Escalated**	**$1,217,835**

Construction			
Construction Contingencies	$303,205	Construction Contingencies Escalated	$338,529
Maximum Allowable Construction Cost (MACC)	$6,064,109	Maximum Allowable Construction Cost (MACC) Escalated	$6,760,995
Sales Tax	$643,099	Sales Tax Escalated	$717,052
Construction Subtotal	**$7,010,413**	**Construction Subtotal Escalated**	**$7,816,576**

Equipment			
Equipment	$91,000		
Sales Tax	$9,191		
Non-Taxable Items	$0		
Equipment Subtotal	**$100,191**	**Equipment Subtotal Escalated**	**$111,864**

Artwork			
Artwork Subtotal	**$33,805**	**Artwork Subtotal Escalated**	**$33,805**

Agency Project Administration			
Agency Project Administration Subtotal	$341,438		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$391,438**	**Project Administation Subtotal Escalated**	**$437,041**

Other Costs			
Other Costs Subtotal	**$40,000**	**Other Costs Subtotal Escalated**	**$43,640**

Project Cost Estimate

Total Project	**$8,705,785**	Total Project Escalated	**$9,660,761**
		Rounded Escalated Total	**$9,661,000**

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0446**	**$0**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$374,761			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$374,761**	**1.0649**	**$399,084**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$25,000			
Geotechnical Investigation	$15,000			
Commissioning	$20,000			
Site Survey	$15,000			
Testing	$40,000			
LEED Services	$25,000			
Voice/Data Consultant	$15,000			
Value Engineering	$25,000			
Constructability Review	$15,000			
Environmental Mitigation (EIS)	$30,000			
Landscape Consultant	$25,000			
ELCCA	$15,000			
LCCT	$15,000			
Reimburseables incl Reprographics prior to bid	$20,000			
Advertising	$3,000			
Traffic analysis	$7,500			
Envelope Consultant	$15,000			
Interior Design	$2,500			
Acoustic Design	$5,000			
Security Consultant	$10,000			
Audio Visual Consultant	$5,000			
Cost and Scheduling	$25,000			
Value Engineering Participation	$25,000			
Constructability Review Participation	$25,000			
Environmental Graphics/Signage	$10,000			
Lighting Consultant	$10,000			
Heatlhcare Services Consultant	$5,000			
Door Hardware Consultant	$5,000			
SEPA/Land Use	$20,000			
Sub TOTAL	**$473,000**	**1.0649**	**$503,698**	Escalated to Mid-Design

4) Other Services				
Bid/Construction/Closeout	$168,371			31% of A/E Basic Services
HVAC Balancing				
Staffing				
Commissioning and Training	$25,000			
Reimburseables/Reprographics for bid and construction	$15,000			
Construction Materials Testing	$20,000			
Insert Row Here				
Sub TOTAL	**$228,371**	**1.1165**	**$254,977**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$53,807			
Other				
Insert Row Here				
Sub TOTAL	**$53,807**	**1.1165**	**$60,076**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$1,129,939**		**$1,217,835**	

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Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$106,393			
G20 - Site Improvements	$49,896			
G30 - Site Mechanical Utilities	$189,842			
G40 - Site Electrical Utilities	$29,700			
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	**$375,831**	**1.0910**	**$410,032**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0910**	**$0**	
3) Facility Construction				
A10 - Foundations	$166,320			
A20 - Basement Construction				
B10 - Superstructure	$149,688			
B20 - Exterior Closure	$693,370			
B30 - Roofing	$190,080			
C10 - Interior Construction	$1,798,826			
C20 - Stairs				
C30 - Interior Finishes	$188,542			
D10 - Conveying				
D20 - Plumbing Systems	$583,308			
D30 - HVAC Systems	$660,528			
D40 - Fire Protection Systems	$76,626			
D50 - Electrical Systems	$883,991			
F10 - Special Construction				
F20 - Selective Demolition				
General Conditions	$297,000			
Other				
Insert Row Here				
Sub TOTAL	**$5,688,278**	**1.1165**	**$6,350,963**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$6,064,109**		**$6,760,995**	

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7) Construction Contingency				
Allowance for Change Orders	$303,205			
Other				
Insert Row Here				
Sub TOTAL	**$303,205**	**1.1165**	**$338,529**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1165**	**$0**	
Sales Tax				
Sub TOTAL	**$643,099**		**$717,052**	
CONSTRUCTION CONTRACTS TOTAL	**$7,010,413**		**$7,816,576**	

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Cost Estimate Details

Equipment				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
E10 - Equipment	$35,000			
E20 - Furnishings	$35,000			
F10 - Special Construction				
IT Equip/computers/printers	$21,000			
Insert Row Here				
Sub TOTAL	**$91,000**	**1.1165**	**$101,602**	
1) Non Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1165**	**$0**	
Sales Tax				
Sub TOTAL	**$9,191**		**$10,262**	
EQUIPMENT TOTAL	**$100,191**		**$111,864**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Project Artwork	$33,805				0.5% of Escalated MACC for new construction
Higher Ed Artwork	$0				0.5% of Escalated MACC for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$33,805**		**NA**	**$33,805**	

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Cost Estimate Details

Project Management				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
Agency Project Management	$341,438			
Additional Services				
Additional Management/Administration	$50,000			
Insert Row Here				
PROJECT MANAGEMENT TOTAL	**$391,438**	**1.1165**	**$437,041**	

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Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal	$15,000				
Historic and Archeological Mitigation					
Permit and Plan Review Fees	$25,000				
Insert Row Here					
OTHER COSTS TOTAL	**$40,000**		**1.0910**	**$43,640**	

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Life Cycle Cost Analysis - Project Summary

Agency	
Project Title	

Existing Description	

Lease Option 1 Description	

Lease Option 2 Description	

Ownership Option 1 Description	Fircrest Laundry

Ownership Option 2 Description	

Ownership Option 3 Description	

Lease Options Information	**Existing Lease**	**Lease Option 1**	**Lease Option 2**
Total Rentable Square Feet	-	-	-
Annual Lease Cost (Initial Term of Lease)	$ -	$ -	$ -
Full Service Cost/SF (Initial Term of Lease)	$ -	1/15/2023	$ -
Occupancy Date	n/a		
Project Initial Costs	n/a	$ -	$ -
Persons Relocating	-	-	-
RSF/Person Calculated			

Ownership Information	**Ownership 1**	**Ownership 2**	**Ownership 3**
Total Gross Square Feet	7,000	-	-
Total Rentable Square Feet	6,850	-	-
Occupancy Date	1/15/2023	3/15/2022	3/15/2022
Initial Project Costs	$ -	$ -	$ -
Est Construction TPC ($/GSF)	$ 1,406	$ -	$ -
RSF/Person Calculated	-	-	-

Financial Analysis of Options

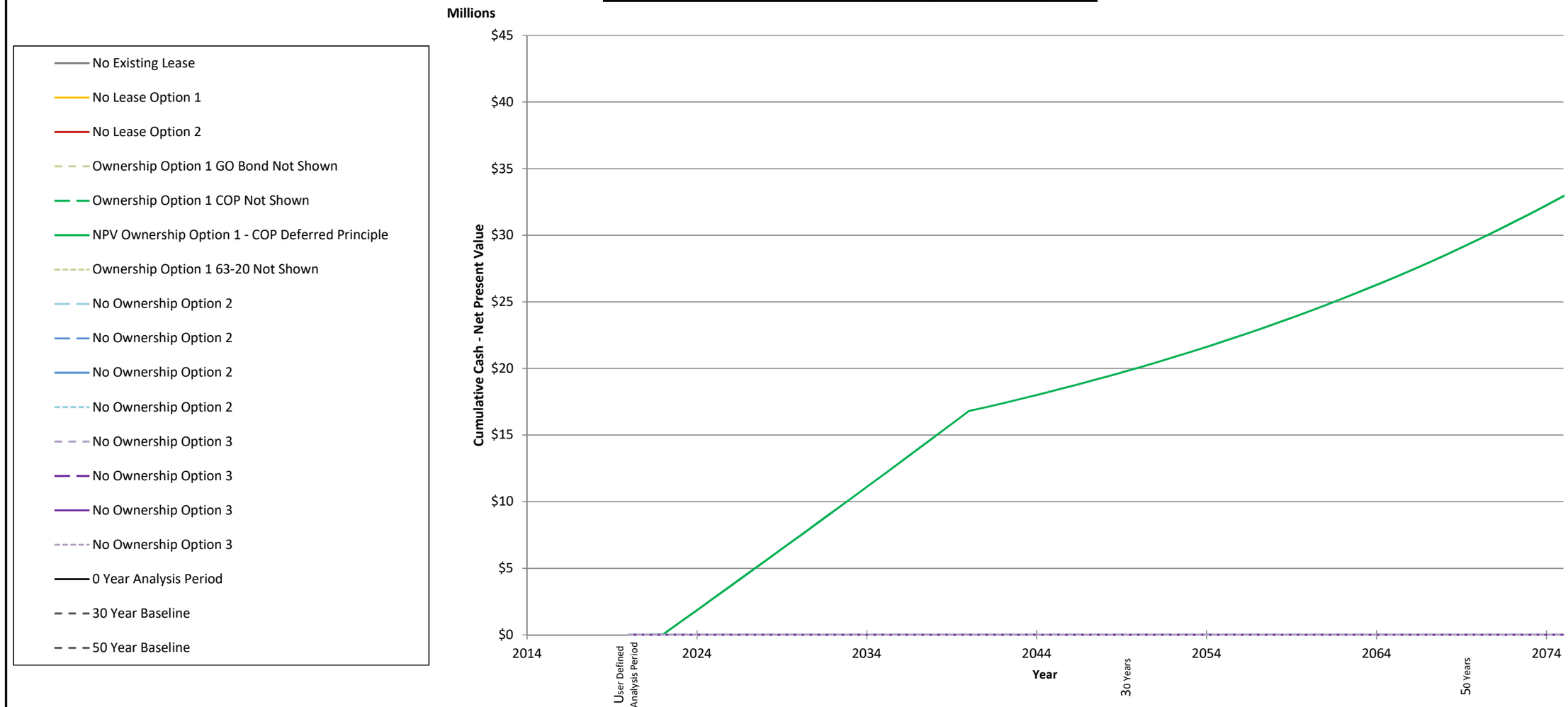
	Display Option?	Yes	Yes	Yes	No	No	Yes	No	No	No	Yes	No	No	No	Yes	No
	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
0	0 Year Cumulative Cash	$ -	$ -	$ -			$ -				$ -				$ -	
	0 Year Net Present Value	$ -	$ -	$ -			$ -				$ -				$ -	
	Lowest Cost Option (Analysis Period)															

	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
30	30 Year Cumulative Cash	$ -	$ -	$ -			$ 20,973,563				$ -				$ -	
	30 Year Net Present Value	$ -	#VALUE!	#VALUE!			$ 19,704,984				$ -				$ -	
	Lowest Cost Option (30 Years)															

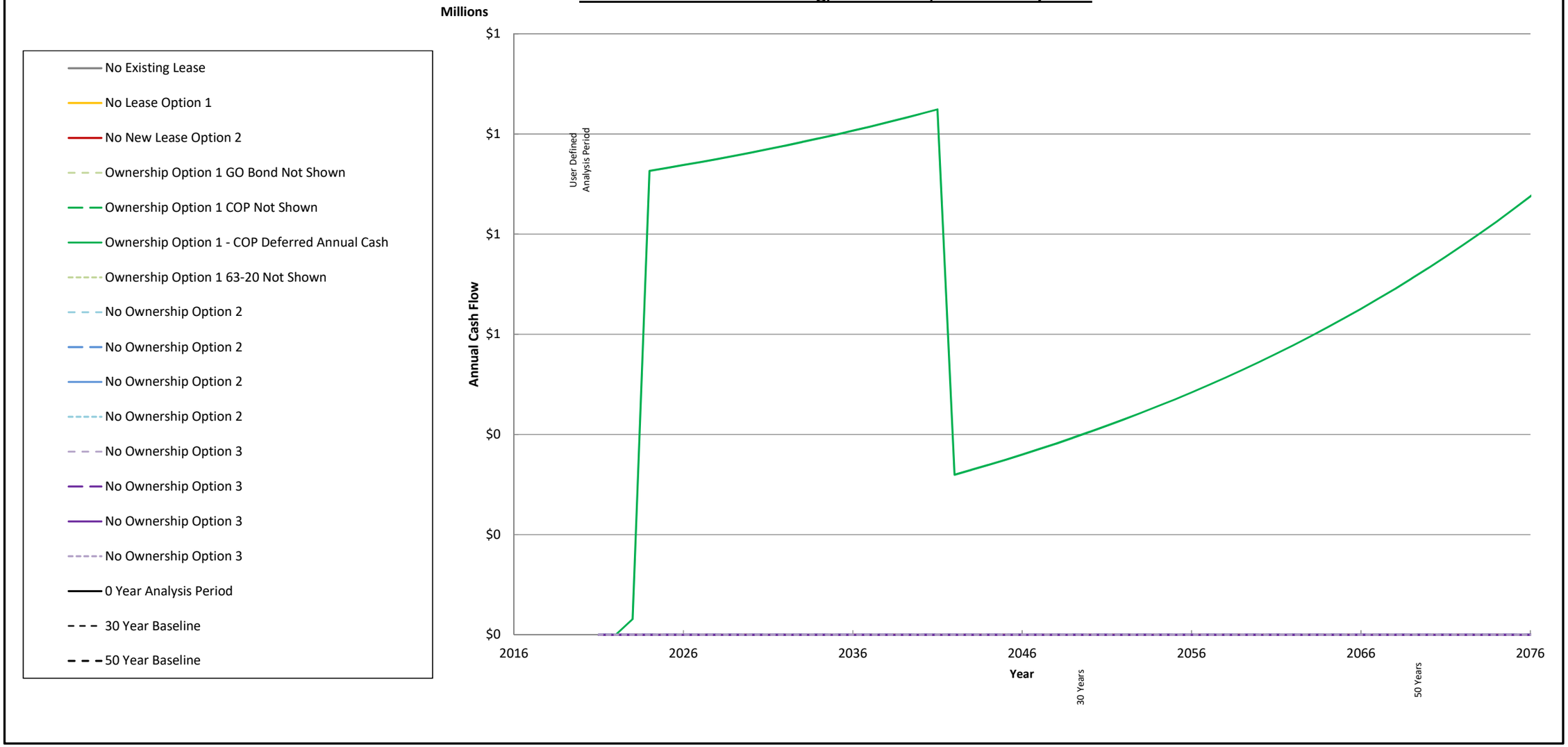
	Financial Comparisons	**Existing Lease**	**Lease 1**	**Lease 2**	**Ownership 1**				**Ownership 2**				**Ownership 3**			
Years	**Financing Means**	**Current**	**Current**	**Current**	**GO Bond**	**COP**	**COP Deferred ***	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**	**GO Bond**	**COP**	**COP Deferred**	**63-20**
50	50 Year Cumulative Cash	$ -	$ -	$ -			$ 32,197,946				$ -				$ -	
	50 Year Net Present Value	$ -	#VALUE!	#VALUE!			$ 29,079,387				$ -				$ -	
	Lowest Cost Option (50 Years)															

** - Defers payment on principle for 2 years while the building is being constructed. See instructions on Capitalized Interest.*

Cumulative Cash - NPV of Exist, Lease, and Own Options



Annual Cash Flow of Existing, New Lease, and Own Options



Financial Assumptions

Date of Life Cycle Cost Analysis:	
Analysis Period Start Date	3/15/2020
User Input Years of Analysis	0

All assumptions subject to change to reflect updated costs and conditions.

	Lease Options			Ownership Option 1			Ownership Option 2			Ownership Option 3		
	Existing Lease	**Lease Option 1**	**Lease Option 2**	**GO Bond**	**COP**	**63-20**	**GO Bond**	**COP**	**63-20**	**GO Bond**	**COP**	**63-20**
Inflation / Interest Rate	3.006%	3.006%	3.006%	3.160%	3.510%	3.710%	3.160%	3.510%	3.710%	3.160%	3.510%	3.710%
Discount Rate	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%	0.441%
Length of Financing	N/A	N/A	N/A	20	20	20	20	20	20	20	20	20

See Financial Assumptions tab for more detailed information

COP Deferred and 63-20 Financing defer the payment on principle until construction completion.

New Lease Assumptions

Real Estate Transaction fees are 2.5% of the lease for the first 5 years and 1.25% for each year thereafter in the initial term of the lease.

Tenant Improvements are typically estimated at $15 per rentable square foot.

IT infrastructure is typically estimated at $350 per person.

Furniture costs are typically estimated at $500 per person and do not include new workstations.

Moving Vendor and Supplies are typically estimated at $205 per person.

Default Ownership Options Assumptions

Assumes a 2 month lease to move-in overlap period for outfitting building and relocation.

Assumes surface parking.

The floor plate of the construction option office building is 25,000 gross square feet.

The estimated total project cost for construction is $420.00 per square foot.

See the Capital Construction Defaults tab for more construction assumptions.

Ownership Option 1 Information Sheet

*	***Requires a user input***	*Green Cell*	*= Value can be entered by user.*	*Yellow Cell*	*= Calculated value.*

*	**Project Description**	Fircrest Laundry
*	**Construction or Purchase/Remodel**	Construction
*	**Project Location**	Shoreline — Market Area = King-North

	Statistics	
*	Gross Sq Ft	7,000
*	Usable Sq Ft	6,850
	Space Efficiency	98%
	Estimated Acres Needed	1.00
	MACC Cost per Sq Ft	$866.30
	Estimated Total Project Costs per Sq Ft	$1,212.82
	Escalated MACC Cost per Sq Ft	$1,004.57
	Escalated Total Project Costs per Sq Ft	$1,406.40

*	**Move In Date**	1/15/2023

Interim Lease Information	**Start Date**
Lease Start Date	
Length of Lease (in months)	
Square Feet (holdover/temp lease)	
Lease Rate- Full Serviced ($/SF/Year)	
One Time Costs (if double move)	

	Construction Cost Estimates (See Capital Budget System For Detail)			
		Known Costs	Estimated Costs	Cost to Use
	Acquisition Costs Total		$ 250,000	$ 250,000
A & E	**Consultant Services**			
	A & E Fee Percentage (if services not specified)		8.4% Std	8.40%
	Pre-Schematic Design services			
	Construction Documents	$ 374,761		
	Extra Services	$ 473,000		
	Other Services	$ 228,371		
	Design Services Contingency	$ 53,807		
	Consultant Services Total	$ 1,129,939	$ 758,014	$ 1,129,939
MACC	**Construction Contracts**			
	Site Work	$ 375,831		
	Related Project Costs			
	Facility Construction	$ 5,688,278		
	MACC SubTotal	$ 6,064,109	$ 2,100,000	$ 6,064,109
	Construction Contingency (5% default)	$ 303,205	$ 303,205	$ 303,205
	Non Taxable Items			$ -
	Sales Tax	$ 643,099		$ 643,099
	Construction Additional Items Total	$ 946,304	$ 303,205	$ 946,304
	Equipment			
	Equipment	$ 91,000		
	Non Taxable Items			
	Sales Tax	$ 9,191		
	Equipment Total	$ 100,191		$ 100,191
	Art Work Total	$ 33,076	$ 30,321	$ 33,076
	Other Costs			
	Hazardous Material Removal	$ 15,000		
	Permit/Plan Review/Misc.	$ 25,000		
	Other Costs Total	$ 40,000		$ 40,000
	Project Management Total	$ 391,438		$ 391,438
	Grand Total Project Cost	**$ 8,705,057**	**$ 3,441,540**	**$ 8,955,057**

Construction One Time Project Costs			
One Time Costs	Estimate	Calculated	
Moving Vendor and Supplies		$ -	*$205 / Person in FY09*
Other (not covered in construction)			
Total	$ -	$ -	

	Ongoing Building Costs				
Added Services	New Building Operating Costs	Known Cost /GSF/ 2023	Estimated Cost /GSF/ 2023	Total Cost / Year	Cost / Month
☑	Energy (Electricity. Natural Gas)	$ 15.37	$ 1.25	$ 107,590	$ 8,966
☑	Janitorial Services	$ -	$ 1.56	$ 10,912	$ 909
☑	Utilities (Water, Sewer, & Garbage)	$ -	$ 1.66	$ 11,622	$ 968
☑	Grounds	$ -	$ 0.16	$ 1,153	$ 96
☐	Pest Control	$ -	$0.00	$ -	$ -
☑	Security	$ -	$ 0.13	$ 887	$ 74
☑	Maintenance and Repair	$ -	$ 6.60	$ 46,221	$ 3,852
☑	Management	$ -	$ 0.77	$ 5,412	$ 451
☐	Road Clearance	$ -	$0.00	$ -	$ -
☑	Telecom	$ 0.35	$ -	$ 2,450	$ 204
	Additional Parking	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -
	Total Operating Costs	**$ 15.72**	**$ 12.14**	**$ 186,246**	**$ 15,521**