Insurance Commissioner Office Building Predesign

PHASE 1 - PROBLEM STATEMENT & ALTERNATIVES ANALYSIS

STATE OF WASHINGTON
DEPARTMENT OF ENTERPRISE SERVICES
PROJECT NO. 2020-070

2.27.2020

PRELIMINARY

MITHŪN

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1 EXECUTIVE SUMMARY

PROJECT GOALS

The goals for the Insurance Commissioner Office Building Predesign are defined by the provisions of SHB 1102, Section 1092. The appropriation in Section 1092 is provided solely for a predesign study that…

> *determine[s] space needs and cost estimates to construct a building on the capitol campus, to house the office of the Insurance Commissioner.*

In determining the program space required, the predesign must consider:

> *(a) The necessary program space required to support the office of the insurance commissioner, to include detail on current space usage by facility compared to proposed space usage.*
>
> *(b) Parking impacts of new office space construction.*

The study must consider, at a minimum:

> *(a) The potential to fund design and construction of the building from sources other than state general obligation bonds.*
>
> *(b) The financial cost analysis of current facility leases compared to the cost of a financial contract for the new building, to include operating budget cost impacts by fund source by fiscal year.*
>
> *(c) The following opportunity sites for the building, detailed in the 2017 state capitol development site study: Site 1, the General Administration Building; Site 12, the Professional Arts Building; Site 7, the Old IBM building; Site 6, the Visitor Center.*

Per the provisions of SHB 1102, Section 1092 the building must be a:

> *(a) High performance building and meet net-zero-ready standards, with an energy use intensity of no greater than thirty-five.*
>
> *(b) Building construction that must be procured using a performance-based method such as design build and must include an energy performance guarantee comparing actual performance data with the energy design target.*
>
> *(c) Design that includes cross-laminated timber products.*

PREDESIGN STUDY PHASE 1: PROGRAM & ALTERNATIVES ANALYSIS

The *Insurance Commissioner Office Building Predesign* is delivered in two phases. The primary goal of Phase 1 is to complete a comparative analysis of the four opportunity sites within SHB 1102, Section 1092. The findings within the first phase of this study will be the basis for phase two which will commence following the selection of a preferred alternative and will include a detailed scope and budget. Phase one findings include:

(1) Space program and parking impacts,

(2) Site Alternative Analysis including budgets, and

(3) Initial technical considerations for high-performance, net-zero ready buildings procured using a performance based delivery method, such as design-build.

Phase 2 will address all other requirements of the proviso not completed in Phase 1, including a detailed analysis of the preferred site alternative.

FUNCTIONAL PROGRAM

PROGRAM ALTERNATIVES, PARTNER AGENCY

The Provisions of SHB 1102, Section 1092 authorize a predesign study for the Office of the Insurance Commissioner (OIC). The OIC has determined there are potential efficiencies to space use, initial cost, and life cycle cost by co-locating programs with a second state agency. As a result, the problem statement and the alternative analysis of Phase 1 consider a standalone building for the OIC, as well as a combined facility with another state agency. The Department of Children, Youth, and Families (DCYF), has been identified as a potential partner whose

addition to the project may offer increased benefit. As such,this predesign has included an analysis of a combined OIC+DCYF facility as one of the potential project alternatives.

FUNCTIONAL PROGRAM

Initial space requirements for OIC and DCYF were developed in consultation with both agencies. The process included meetings with key stakeholders and an analysis of existing spaces. A density of 230GSF/person was established by both agencies as a preliminary target density; this figure was used only for the initial sizing of projected space requirements. A potential increase in density will be studied in phase 2 of the predesign. Staff growth estimates were provided by both agencies to the year 2030. Total space requirements as shown in Figure 1.1 are a combination of the target density and staffing growth projections.

[FIGURE 1.1] SPACE REQUIREMENTS

AGENCY	STAFF (2030)	TARGET DENSITY	BUILDING AREA
OIC	275	230 FTE/GSF	**63,250 GSF**
OIC + DCYF	1,125	230 FTE/GSF	**258,750 GSF**

TECHNICAL PROGRAM

BUILDING PERFORMANCE

The proposed buildings are targeted to meet LEED V.4 Silver certification requirements, be net-zero-ready and have an Energy Use Intensity (EUI) of 35 kBTU or less per square foot annually. These targets will reduce energy consumption by twenty to fifty percent compared with the code required baseline and reduce carbon emissions.

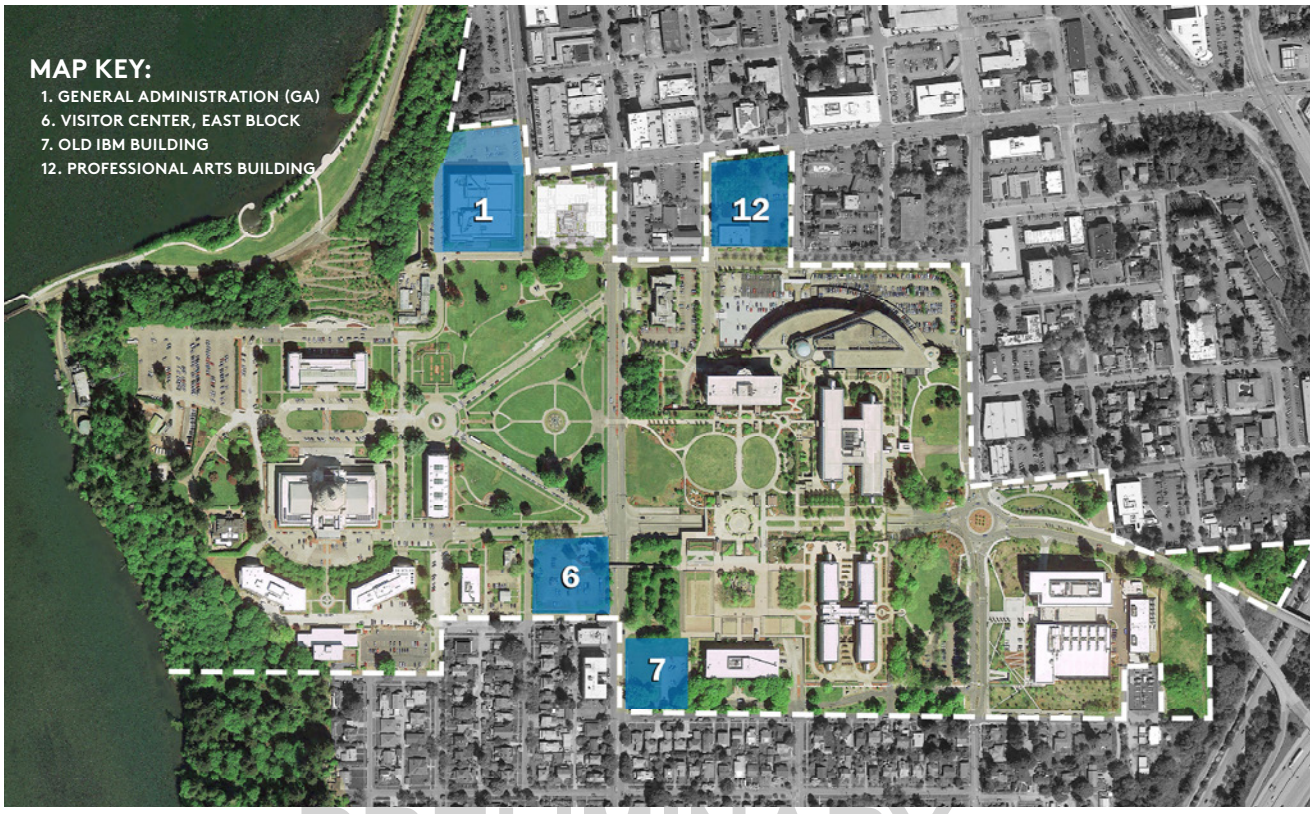
SECURITY

Through coordination with the Department of Enterprise Services Capitol Security & Visitor Services (DES CSVS) Division, it has been determined that facility security level (FSL) rating for this proposed facility is a level III. New construction projects on the Capitol Campus, with few exceptions, are fully expected to meet the necessary level of protection (LOP). Preliminary cost for a FSL III have been included within the predesign alternative analysis.

PARKING

Parking requirements on campus are determined by the State and not by City of Olympia standards. Determining a finalized parking strategy will be a significant project driver. Preliminary parking estimates

[FIGURE 1.3] ALTERNATIVE SITES LOCATIONS



within this predeisgn are calculated by referencing the most recent commute trip reduction (CTR) plan from 2011. As parking demand and alternative transportation methods have dramatically evolved, an updated campus parking strategy could reduce parking stall totals and total development cost.

[FIGURE 1.2] PRELIM. PARKING REQUIREMENTS

AGENCY	STAFF STALLS*	VISITOR STALLS*	TOTAL STALLS
OIC	152	15	**168**
OIC + DCYF	616	62	**678**

*See pg. 26 for parking calculation details

PROJECT DELIVERY

Building procured with an energy performance-based method such as design-build and includes a performance guarantee.

	COMPLETE
PREDESIGN STUDY	
PHASE 1	**02/20**
FINAL PREDESIGN	**06/20**
FUNDING*	**07/21**
PRELIMINARY DESIGN/GMP	**01/22**
DESIGN/PRECONSTRUCTION	**01/23**
MID-POINT OF CONSTRUCTION	**10/23**
CONSTRUCTION	**07/24**
OCCUPANCY	**09/24**

*Based on alternative financing model

MATERIALS

Exterior and interior materials will be comparable to the recent Helen Sommers and 1500 Jefferson buildings, except for the use of cross-laminated timber (CLT), as directed within the provisions of SHB 1102.

OPPORTUNITY SITES AND PREDESIGN ALTERNATIVES

The following section compares the project target budget and conditions of an OIC facility on the four individual opportunity sites, as well as a second alternative for Opportunity Site 01 (OS 1) that illustrates a combined OIC and DCYF facility. Only OS 1 has the development capacity to accommodate a combined OIC and DCYF facility. A standalone OIC facility will fit on any of the four opportunity sites.

Historical data indicates a multiplier of forty percent times the construction cost provides a reasonable estimate of the soft costs to account for fees (10%), agency contingency (5%), taxes (10%), furniture, fixtures and equipment (5%), permits and mitigation fees (5%) project management (1%) and other costs (4%). Construction estimates are based on a preliminary quantity survey for each option. Demolition cost are included. Escalation is calculated to the mid-point of construction in July, 2023.

Figure 1.4 illustrates that costs are generally comparable between opportunity sites. Although the target budget for OS 1 appears to be significantly higher than the other sites, it includes more surface parking

[FIGURE 1.4] OPPORTUNITY SITE COST COMPARISONS

	OS 1, ALT 1	**OS 1, ALT 2**	**OS 6**	**OS 7**	**OS 12**
Sitework	$13,263,522	$12,419,091	$3,759,358	$1,289,873	$2,775,435
OIC Facility Construction, 63,250 GSF	$51,471,099	$51,471,099	$51,471,099	$51,471,099	$51,471,099
DCYF Facility Const., 195,000 GSF		$172,209,562			
Construction Target Budget	**$64,734,621**	**$236,099,752**	**$55,230,457**	**$52,760,972**	**$54,246,534**
Multiplier @ 40%	$25,893,848	$68,546,052	$22,092,183	$21,104,389	$21,698,614
ICOB Target Project Budget	**$90,628,469**		**$77,322,640**	**$73,865,361**	**$75,945,148**
ICOB + DCYF Target Project Budget		**$330,539,653**			
Off-site Parking Impact (additional stalls / cost in millions)	118 stalls / $14-16.5	728 stalls / $67-80	185 stalls / $22-26	162 stalls / $19.5-22.5	198 stalls / $24-28
Total Project Budget including off-site parking*	**$107,128,469**	**$410,539,653**	**$103,322,640**	**$96,365,361**	**103,945,148**

*Uses highest figure within the estimated range for off-site parking impact cost

and has reduced off-site parking impacts. The OS 1 cost do not include the current cost to maintain the vacated GA building which amount to $315,000 annually.

Per the provisions of the SHB 1102, Section 1092, the predesign cost estimates in Figure 1.4 include requirements for net zero ready (NZR), an energy use intensity (EUI) of no more than 35, and a CLT structure. Costs associated with DES security requirements, facility security level III (FSL III), are also included within the estimates. Approximate share of the facility target budget attributable to these requirements is summarized:

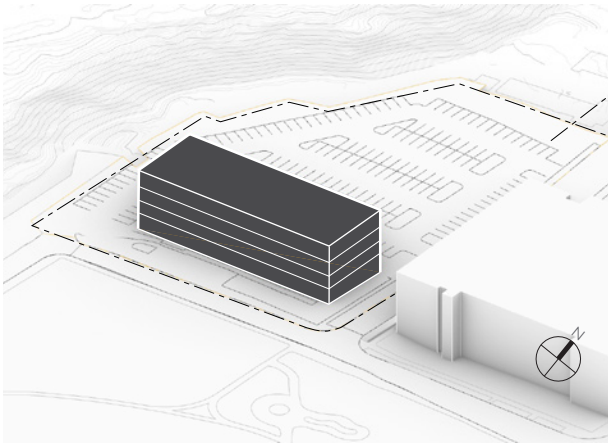
	NZR & EUI < 35	CLT	FSL III
ICOB	22%	4%	2%
ICOB + DCYF	30%	4%	1%

The calculation of percentages above excludes site development costs, which vary depending on the site, as well as the potential cost of off-site parking.

OPPORTUNITY SITE 1, GA BUILDING _ ALT. 1

- 4 story OIC Building on South edge of site
- 63,250 total gross square feet
- Existing GA building to be demolished
- Sitework includes 170 surface parking stalls
- Steep slope reinforcement needed
- Additional cost for off-site, above grade parking for 118 vehicles is $14 - 16.5 million

	CONSTRUCTION COST $	PROJECT COST $
SITEWORK	$13,263,522	
FACILITY CONST.	$51,471,022	
	$64,734,621	**$90,628,469**

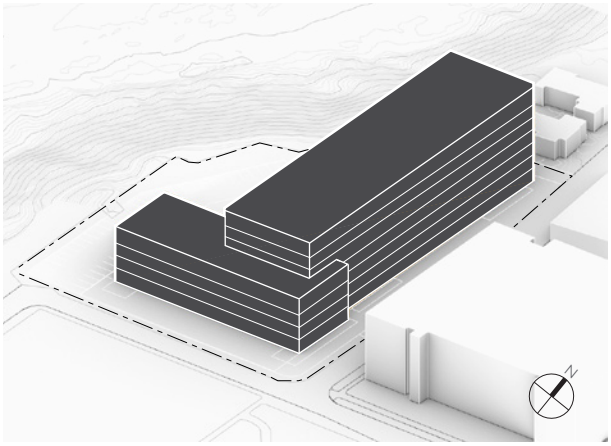


[FIGURE 1.4] OPPORTUNITY SITE 01, GA BUILDING, PREDESIGN ALTERNTIVE 01

OPPORTUNITY SITE 1, GA BUILDING _ ALT. 2

- 7 story building housing both OIC and DCYF
- 4 story wing facing the capitol lawn
- Existing GA building to be demolished
- 258,750 total gross square feet
- Sitework includes 70 surface parking stalls
- Additional cost for off-site, above grade structured parking for 728 vehicles is $67 - 80 million

	CONSTRUCTION COST $	PROJECT COST $
SITEWORK	$12,419,091	
OIC + DCYF FACILITY CONST.	223,680,661	
	236,099,752	**330,539,653**

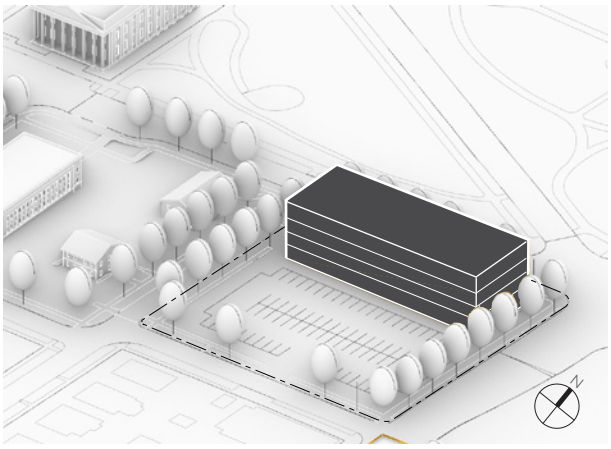


[FIGURE 1.5] OPPORTUNITY SITE 01, GA BUILDING, PREDESIGN ALTERNTIVE 02

OPPORTUNITY SITE 6, VISITOR CENTER

- 4 story OIC Building on North edge of site
- 63,250 total gross square feet
- Existing visitor center demolished
- Sitework includes 65 surface stalls'
- Existing pedestrian bridge may req. modification
- Additional cost for off-site, above grade structured parking for 185 vehicles is $22 – 26 million.

	CONSTRUCTION COST $	PROJECT COST $
SITEWORK	$3,759,358	
FACILITY CONSTRUCTION	$51,471,099	
	$55,230,457	**$77,322,640**

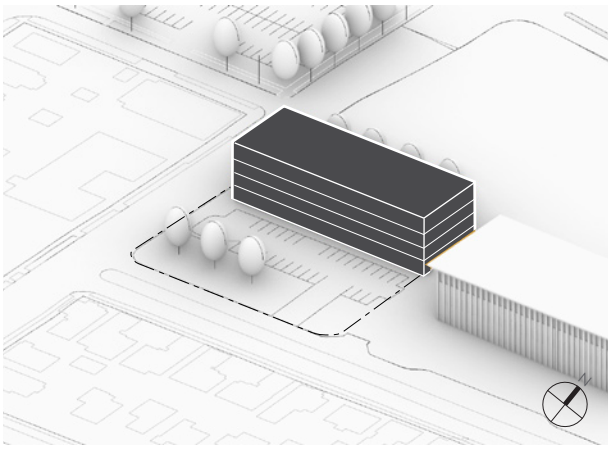


[FIGURE 1.6] OPPORTUNITY SITE 06, VISITOR CENTER

OPPORTUNITY SITE 7, OLD IBM

- 4 story OIC Building
- 63,250 total gross square feet
- Minimal space for on-site parking available
- Sitework includes 25 surface stalls
- Additional cost for off-site, above grade structured parking for 162 vehicles is $19.5 - 22.5 mill
- This site is currently under development for Capitol Campus Childcare Center use

	CONSTRUCTION COST $	PROJECT COST $
SITEWORK	$1,289,873	
FACILITY CONSTRUCTION	$51,471,099	
	$52,760,972	**$73,865,361**

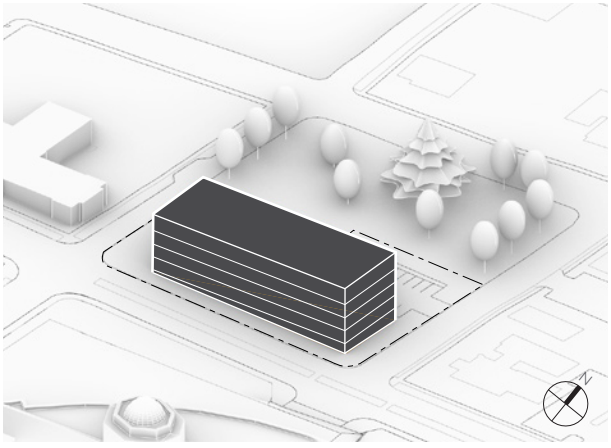


[FIGURE 1.7] OPPORTUNITY SITE 07, IBM SITE

OPPORTUNITY SITE 12, PROARTS

- 4 story OIC Building on south edge of site
- 63,250 total gross square feet
- North half of block preserved for Centennial Park
- Sitework includes 50 surface stalls
- Additional cost for off-site, above grade structured parking for 198 vehicles is $24 – 28 million

	CONSTRUCTION COST $	PROJECT COST $
SITEWORK	$2,775,435	
FACILITY CONSTRUCTION	$51,471,099	
	$54,246,534	**$75,945,148**



[FIGURE 1.8] OPPORTUNITY SITE 12, PROARTS

ISSUE	OPPORTUNITY SITE 1, ALT. 1	OPPORTUNITY SITE 1, ALT. 2
ADJACENCIES	• ICOB adjacent to West Campus and historic campus core • ICOB adjacent to 116 Union Ave Parking Garage	• ICOB and DCYF adjacent to West Campus and historic campus core • ICOB and DCYF adjacent to 116 Union Ave Parking Garage
DEVELOPMENT OPPORTUNITIES* *Comparison to the 2017 State Capitol Development Study	• Realizes 23% of maximum building development capacity of Opportunity Site 1. • Allows for additional development on the North portion the site.	• Realizes 94% of maximum building development capacity of Opportunity Site 1.
HISTORIC RESOURCES	• The General Administration Building, which is listed on the National Register of Historic Places, would be demolished.	• The General Administration Building, which is listed on the National Register of Historic Places, would be demolished.
CAMPUS AND URBAN CONTEXT	• Front door of ICOB integrates with historic capitol group. Volume relates to adjacent four-story buildings. • Building has views to Capitol Lake and Legislative Building.	• Front door of ICOB integrates with historic capitol group. Volume relates to adjacent four-story buildings. • DCYF entry integrates with surrounding downtown commercial district and fronts Columbia St SW. Building, aligning with Union Ave. • Building has views to Capitol Lake and Legislative Building.
PARKING	• 170 on-site surface parking stalls. • 118 additional off-site parking stalls needed	• 70 on-site surface parking stalls. • 728 additional parking stalls needed off-site.
SECURITY/ACCESS	• Combining three OIC offices into one secure building limits uncontrolled access and increases overall agency security.	• Combining three OIC offices and five DCYF offices into one secure building, limits uncontrolled access and increases overall agency security.

OPPORTUNITY SITE 6	OPPORTUNITY SITE 7	OPPORTUNITY SITE 12
• ICOB adjacent to West Campus and historic campus core • ICOB adjacent to the East Plaza Garage	• ICOB adjacent to West Campus and historic campus core • ICOB adjacent to the East Plaza Garage	• ICOB centrally located within the Capitol Campus • ICOB adjacent to the East Plaza Garage • Adjacent to Centennial Park
• Realizes 47% of maximum building development capacity of Opportunity Site 6.	• Realizes 87% of maximum building development capacity of Opportunity Site 7.	• Realizes 43% of maximum building development capacity of Opportunity Site 12.
• The Visitor Center, which does not have any historic designation, would be demolished.	• This site does not have any historical resources	• The 1,500 GSF State Farm Building, built in 1953, has no historic designation, and would be demolished • The 11,000 GSF Professional Arts Building, built in 1959, has no historic designation, and would be demolished • Centennial Park has no official historic designation, but will remain in this development alterative
• Front door of ICOB integrates with historic capitol group. Volume relates to adjacent four-story buildings. Massing reinforces the edge along Sid Snyder Ave and extends historic core to Capitol Way South.	• Front door of ICOB accessed from Maple Park Ave and integrates with residential neighborhood on south side of campus. The building also fronts Capitol Way South and acts as South entrance 'gateway' building. Volume relates to adjacent four-story buildings.	• Front door of ICOB integrates with historic capitol group. Volume relates to adjacent four-story buildings. • Building sits adjacent to Centennial Park and Urban neighborhood buildings.
• 65 on-site surface parking stalls. • 185 additional parking stalls needed off-site.	• 25 on-site surface parking stalls available. • 162 additional parking stalls needed off-site.	• 50 on-site surface parking stalls. • 198 additional parking stalls needed off-site.
• Combining three OIC offices into one secure building limits uncontrolled access and increases overall agency security.	• Combining three OIC offices into one secure building limits uncontrolled access and increases overall agency security.	• Combining three OIC offices into one secure building limits uncontrolled access and increases overall agency security.

ISSUE	OPPORTUNITY SITE 1, ALT. 1	OPPORTUNITY SITE 1, ALT. 2
INITIAL COST	• Total Project cost = $90,628,469 • Off-site parking cost = $14-16.5 million (not included in project cost) • Vacant GA building requiring annual maintenance cost of $315,000 will be demolished • No Impact fees for this site	• Total Project cost = $330,539,653 • Off-site parking cost = $67-80 million(not included in project cost) • Vacant GA building requiring annual maintenance cost of $315,000 will be demolished • No Impact fees for this site
LIFE CYCLE COST	• Because the same building size, height, and orientation is used for all sites (except OS1-Alt 2), life cycle cost are relatively neutral across all opportunity sites (except OS1-Alt 2).	• Life Cycle Cost are estimated to be higher for this alternative, but are not directly comparable to the other opportunity sites because OS1-Alt 2 has a significantly larger program.
NET-ZERO	• Good solar access. • Photovoltaic array over surface parking would contribute to energy production and carbon footprint reduction on capitol campus. Additional site must be identified for photovoltaic array to offset energy use	• The wing with long axis oriented North/South has limited solar access. • Photovoltaic array over surface parking would be limited. Additional site must be identified for photovoltaic array to offset energy use
ADAPTABILITY	• The size and scale of the site allows future building expansion to the North if needed to accommodate new or changing space needs.	• The size of the site does not allow for much growth or adaptability regarding the building size.

OPPORTUNITY SITE 6	OPPORTUNITY SITE 7	OPPORTUNITY SITE 12
• Total Project cost =$77,322,640 • Off-site parking cost = $22-26 million (not included in project cost) • $700k Impact fees for this site	• Total Project cost = $73,865,361 • Off-site parking cost = $19.5-22.5 million (not included in project cost) • $725k Impact fees for this site	• Total Project cost = $75,945,148 • Off-site parking cost = $24-28 million(not included in project cost) • $400k Impact fees for this site
• Because the same building size, height, and orientation is used for all sites (except OS1-Alt 2), life cycle cost are relatively neutral across all opportunity sites (except OS1-Alt 2).	• Because the same building size, height, and orientation is used for all sites (except OS1-Alt 2), life cycle cost are relatively neutral across all opportunity sites (except OS1-Alt 2).	• Because the same building size, height, and orientation is used for all sites (except OS1-Alt 2), life cycle cost are relatively neutral across all opportunity sites (except OS1-Alt 2).
• Good solar access on roof. Low solar access on grade level due to trees to the South. • Photovoltaic array over surface parking would contribute to energy production and carbon footprint reduction on capitol campus. Additional site must be identified for photovoltaic array to offset energy use	• Good solar access on roof. Low solar access on grade level due to trees to the South. • Photovoltaic array over surface parking would contribute to energy production and carbon footprint reduction on capitol campus. Additional site must be identified for photovoltaic array to offset energy use	• Good solar access. • Photovoltaic array over surface parking would contribute to energy production and carbon footprint reduction on capitol campus. Additional site must be identified for photovoltaic array to offset energy use
• The size and scale of the site allows future building expansion to the South if needed to accom-modate new or changing space needs.	• The size of the site does not allow for much growth or adaptability regarding the building size.	• The size and scale of the site allows future building expansion to the South if needed to accom-modate new or changing space needs.

2 PROBLEM STATEMENT

As part of the Predesign, a functional program study as stated mandated by the *Proviso Sec. 1092* for the Department of Enterprise Service, must consider:

> *The necessary program space required to support the office of the insurance commissioner, to include detail of current space usage by facility compared to proposed space usage.*

In addition the functional program study should outline, "*The parking impacts of new office space construction...*". Both a functional and technical program are developed to serve as a basis for the predesign assumptions and a financial cost analysis.

FUNCTIONAL PROGRAM

PROGRAM GOALS

The space needs for new building strategies that would house the OIC are based on an analysis of existing spaces and work meetings with representatives of the agency.

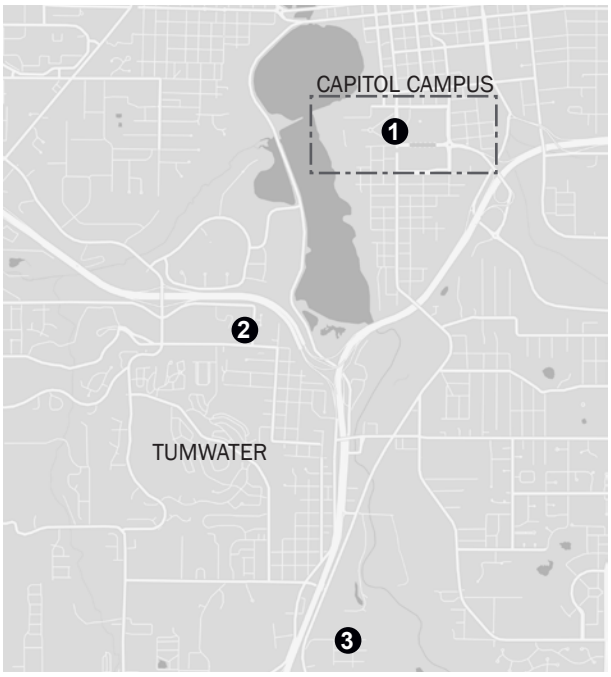
The key findings from this outreach are:

- 3 separate office locations reduce the operational efficiency and communication between dispersed departments. Consolidating 3 buildings into one will combine all agency functions and increase efficiency of operations by reducing travel and leasing costs.
- Existing spaces can not accommodate the predicted agency growth of 17% in the next 10 years. A new building would allow for growth while increasing programmatic flexibility for evolving workplace needs.
- Existing spaces are not in alignment with the 2017 Workplace Strategies and Space Use Guidelines or the 2016 Executive order 16-07, Building a Modern Work Environment. A new building design utilizing the Modern Work Environment strategies will enhance staff retention, recruitment and wellbeing
- 2 separate leased offices would be consolidated into 1 state-owned building. While 1 state-owned spaces would be made available for other use.
- A new high performance building would be more energy and cost efficient than current spaces.

EXISTING CONDITIONS

The OIC currently occupies a portion of the historic Insurance Building on the capitol campus and two leased spaces in Tumwater. The intent of the OIC is to bring the agency staff together in one central location—increasing connectivity, efficiency and communication within the department. This will also enable space utilization and efficiency with shared common spaces.

[FIGURE 2.1] OIC OFFICE LOCATIONS



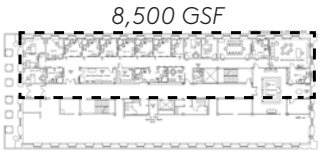
MAP KEY
1.INSURANCE BUILDING, LVL 02
2.INSURANCE 5000 BUILDING, LVL 01 & 02
3.IRVING STREET BUILDING. LVL 01

[FIGURE 2.2] OIC EXISTING OFFICE SPACES

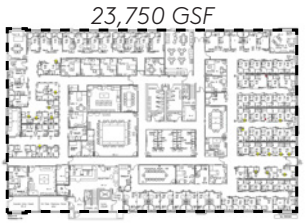
	OWNERSHIP	GROSS AREA
INSURANCE BUILDING	OWNED (STATE)	8,500 GSF
INSURANCE 5000 BUILDING	LEASED SPACE	47,500 GSF
IRVING STREET BUILDING	LEASED SPACE	4,500 GSF
		60,500 GSF

[FIGURE 2.2] OIC EXISTING LOCATIONS, SCALE 1":128'

INSURANCE 5000 BUILDING
LVL 02



INSURANCE BUILDING
LVL 02



INSURANCE 5000 BUILDING
LVL 01

IRVING STREET BUILDING
LVL 01

PROGRAM OVERVIEW

OIC's function is primarily administrative with many of the staff engaged in communications, paperwork and meetings. Sharing information between teams is important, and consolidation can support that through adjacency of teams.

About 30% of staff telecommute twice a week and an 8:00 am to 5:00 PM schedule is typical. Consolidation would also reduce duplication and help connect groups like Public Affairs and Executive. Spaces for collaborative work are more important than immediate adjacency. The objective is to reduce fragmentation and enhance span of control.

The department went through a space consolidation effort 3 years ago. Workstations were reduced from a maximum size of 12'x10' to 8'x8', with staff adjustments required. Current workstations range from a minimum of 8'x8' to larger layouts to accommodate existing spaces. There are currently some standing desks in use, and that is anticipated to grow. Certain teams like IT are in a bullpen configuration.

ADJACENCIES AND SPACE ALLOCATION

For the purposes of the Predesign, space allocation will be summarized both in gross square footage (GSF) and net square footage (NSF). GSF is used to calculate overall building dimensions and is measured to the outside of the building exterior walls. GSF includes all programs areas, walls and structure, as well as all circulation and service areas. In general, NSF is measured to the inside of interior walls, and is used when dimensioning interior usable space and program areas.

Current space utilization for OIC averages to 257 GSF per staff member. Some of the current space sizes are due to required sub-optimal workstation spacing due to large historic building spaces, not designed for workstation modules. Increased space efficiency commensurate with industry standards could reduce GSF/FTE to below 250. Reducing enclosed offices and replacing with open office workstations would also increase efficiency.

GROWTH

OIC projects a 17% staff growth of the agency by 2030 to a total of 275 employees.

[FIGURE 2.3] OIC STAFF GROWTH PROJECTIONS

2020 STAFF	2025 STAFF	2030 STAFF
235	255 (+8.5%)	275 (+17%)

TARGET USE DENSITY

Figure 2.6 describes the current use density of OIC as well as a target use density. A target density of 230

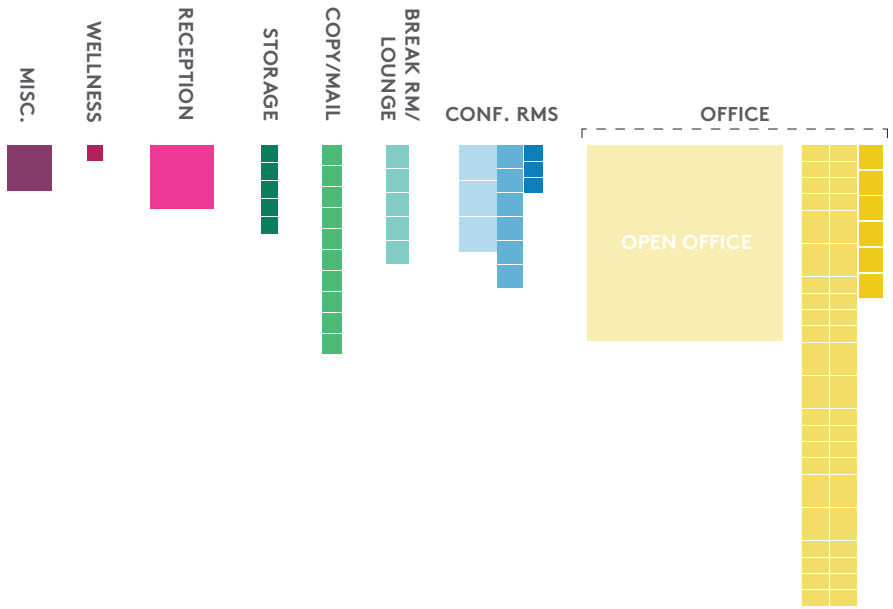
[FIGURE 2.4] EXISTING SPACE USE SUMMARY

	USE	COUNT	NET SF	SF/UNITS	STAFF
1	PRIVATE OFFICE	56	10,405	176	56
4	OPEN OFFICE*	-	16,270	-	165
3	SHARED OFFICE	6	1,297	254	12
2	CONFERENCE ROOMS	12	3,574	298	-
5	BREAKROOM/LOUNGE	6	1,079	216	-
6	COPY / MAIL	10	1,627	163	1
7	STORAGE	5	590	118	-
8	RECEPTION	5	1,766	353	1
9		1	100	100	-
10	MISC.**	-	872	-	-
			36,537		**235**

* Open office includes all individual workstations not within a private office or shared office

** Misc. are those programs which do not fall within categories 1-9 including ancillary service areas

[FIGURE 2.5] EXISTING OIC NET AREAS, SCALE 1":128'



FTE/GSF was agreed upon by OIC after study and review of the existing spaces and comparing these spaces to the OFM guidelines for a modern work environment. This target is a preliminary figure used for initial building sizing. Increased efficiencies from current conditions are anticipated by the consolidation of disparate offices, as well as an updating of the workspace environment to meet current industry standards.A further increase in density was discussed in Phase 1 and will be addressed in Phase 2 of the Predesign.

[FIGURE 2.6] EXISTING AND TARGET DENSITY

OIC EXISTING USE DENSITY

STAFF	DENSITY	BUILDING AREA
235 (2020)	255 FTE/GSF	60,500 GSF

OIC TARGET USE DENSITY

STAFF	DENSITY (TARGET)	BUILDING AREA
275 (2030)	**230 FTE/GSF**	**63,250 GSF**

PROGRAM ALTERNATIVE, COMBINED BUILDING WITH PARTNER AGENCY

MULTI-AGENCY BUILDING BENEFITS

In addition to the mandate of the Proviso to study the programmatic needs of the OIC, this predesign includes a study of potential agency partnerships that could expand the possibilities for consolidation through combined funding and effort. Increased efficiencies through a shared, inter-agency building is a subject of study through this predesign. An initial search by OIC of potential partners, has identified the Department of Children Youth and Families (DCYF) as a viable partner agency. Between the two agencies, eight offices (approximately 925 employees) would be combined into one building, eliminating a combined leasing cost of approximately $4.4 million annually

DCYF Mission: *Protect children and strengthen families so they flourish*.

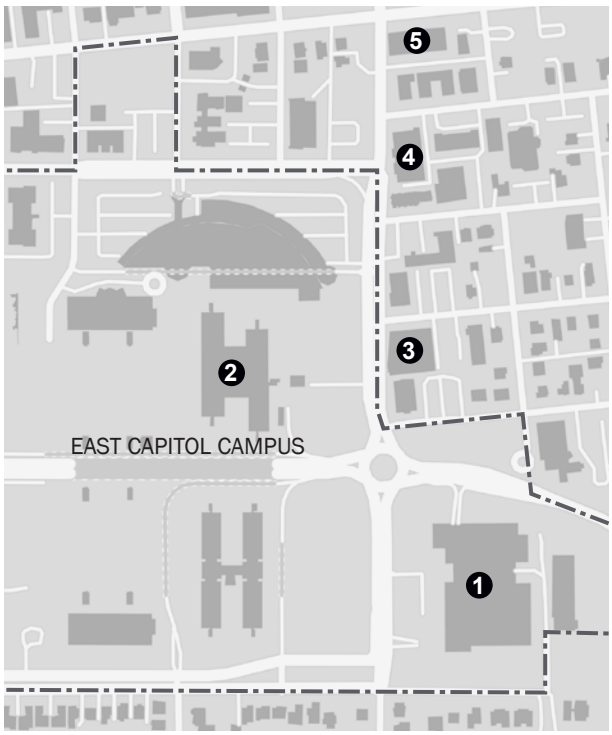
DCYF FUNCTIONAL PROGRAM

The space needs for new building strategies that would house the DCYF are based on an analysis of existing spaces and work meetings with agency representatives.

The key findings from this outreach are:

- 5 separate office locations reduce the operational efficiency and communication between dispersed departments. One location would consolidate all headquarter administrative functions
- Existing spaces can not accommodate the predicted agency growth. A new building would allow for agency growth while increasing programmatic flexibility for evolving workplace needs.
- Existing spaces are not in alignment with the guidelines of the 2017 Workplace Strategies and Space Use Guidelines developed by the Office of Financial Management (OFM) or the 2016 Executive order 16-07, Building a Modern Work Environment. A new workplace environments utilizing the Modern Work Environment strategies will enhance staff retention, recruitment and wellbeing
- 3 separate leased offices would be consolidated into 1 state-owned building. While 2 state owned spaces would be made available for other use.
- A new high performance building would be more energy and cost efficient than current spaces

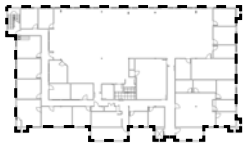
[FIGURE 2.7] DCYF OFFICE LOCATIONS



MAP KEY

1.1500 JEFFERSON ST., LVL 01 & 02
2.1115 WASHINGTON ST., LVL 02,03 & SERVICE LVL
3.1310 JEFFERSON ST. LVL 01,02
4. 1110 JEFFERSON ST. LVL 01 & 02
5.505 UNION AVE, LVL 02 & 03

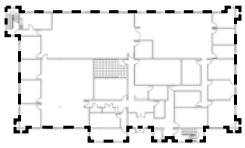
[FIGURE 2.8] DCYF EXISTING LOCATIONS CONT., SCALE 1":128'



1110 JEFFERSON
LVL 02

505 UNION
LVL 02

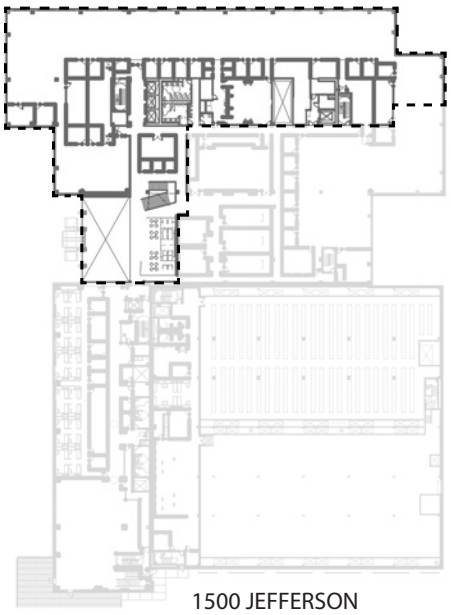
1310 JEFFERSON
LVL 02



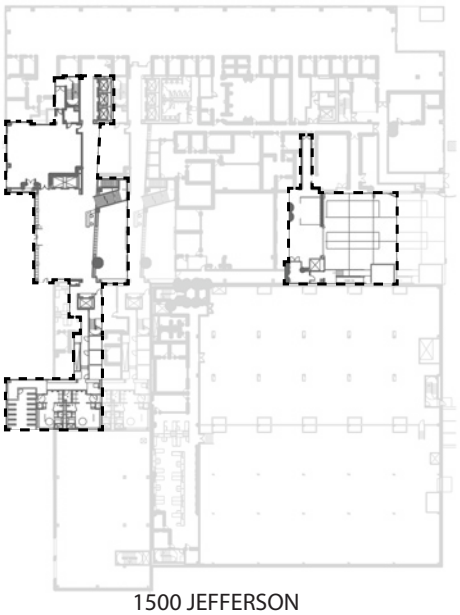
1110 JEFFERSON
LVL 01

505 UNION
LVL 03

1310 JEFFERSON
LVL 01

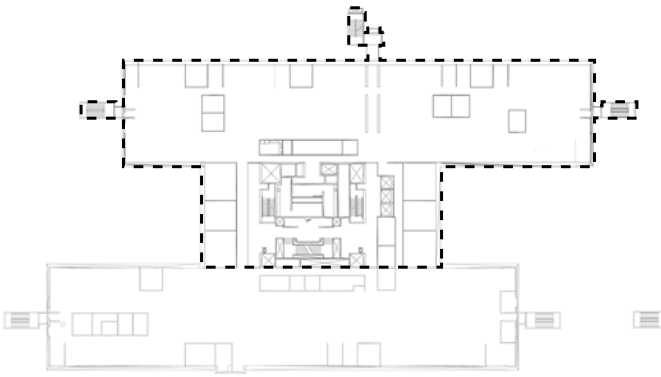


1500 JEFFERSON
LVL 02

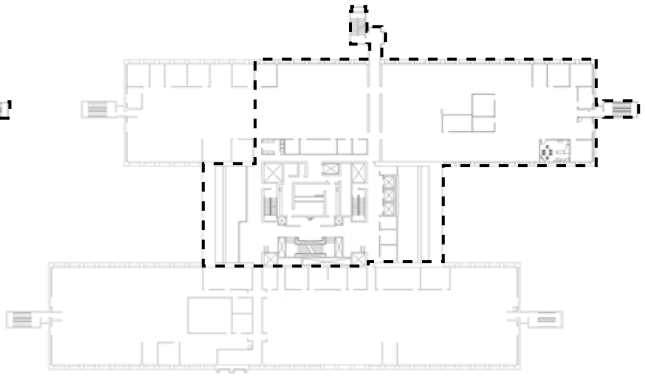


1500 JEFFERSON
LVL 01

[FIGURE 2.9] DCYF EXISTING LOCATIONS CONT., SCALE 1":128'



1115 WASHINGTON
LVL 02



1115 WASHINGTON
LVL 03

EXISTING CONDITIONS

The Department of Children Youth and Families was created following the 2016 Washington State Blue Ribbon Commission Report. The report advocated a new department combining multiple agencies to optimize the delivery of services, and a goal to provide better outcomes for Children, Youth and Families in Washington State. These agencies are currently dispersed in 5 separate locations on and adjacent to the Capitol campus. DCYF projects a staff growth of 19% by the year 2030 to 850 employees.

[FIGURE 2.10] DCYF EXISTING OFFICE SPACES

	OWNERSHIP	GROSS AREA
1500 JEFFERSON	LEASED TO OWN (STATE)	46,000 GSF
1115 WASHINGTON	OWNED (STATE)	76,000 GSF
1310 JEFFERSON	LEASED SPACE	25,000 GSF
1110 JEFFERSON	LEASED SPACE	24,500 GSF
505 UNION	LEASED SPACE	18,500 GSF
		190,000 GSF

DCYF PROGRAM OVERVIEW

DCYF in Olympia is engaged in primarily administrative functions with very limited public outreach or face-to-face services. Because of the sensitive nature of the agency oversight a secure reception and entry sequence is required. DCYF focuses on youth and families and on service agencies, including juvenile rehabilitation. The new agency structure is evolving with multiple programs under the DCYF umbrella.

Currently the department service areas include:

- Adolescent Programs - Youth
- Child Welfare Programs – Children and Families
- Early Learning Programs - Children
- Juvenile Rehabilitation - Youth
- Field Operations
- Family Support Programs

These departments will be supported by common spaces for back office support, office of communications and government.

Limited numbers of staff have telecommuted, and reliance on telecommuting is likely to evolve. Informal collaboration spaces are popular and well used for joint work sessions. Workspace allocation will need to consider open and private offices, as well as, hoteling, touch-down and off-site work spaces.

Current ratio of 1 conference room per 16 employees is considered too low by staff, and shared spaces will need to be updated to current OFM standards. At the programming meeting with DCYF there was an expressed desire for: spaces with access to all groups, spaces for informal interaction, efficient and supportive space for interaction across all groups.

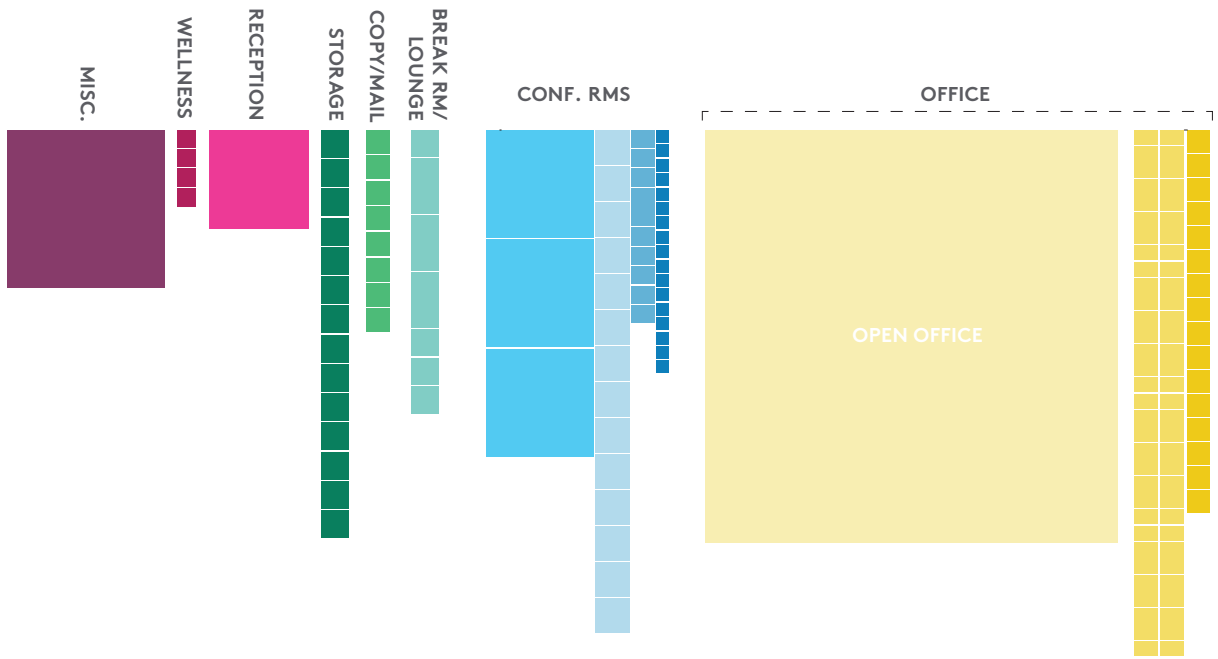
[FIGURE 2.12] CURRENT SPACE USE ALLOCATION DCYF

	USE	COUNT	NET SF	SF/UNITS	STAFF
1	PRIVATE OFFICE	66	10,126	153	66
2	CONFERENCE ROOMS	44	26,225	596	-
3	SHARED OFFICE	13	2,976	229	37
4	OPEN OFFICE*	-	75,888	4,216	611
5	BREAKROOM/LOUNGE	10	3,362	336	-
6	COPY / MAIL	8	2,090	261	-
7	STORAGE	14	4,539	324	-
8	RECEPTION	4	4,348	-	1
9	WELLNESS	4	547	137	-
10	MISC.**	-	10,908	-	-
			141,009		**715**

* Open office includes all individual workstations not within a private office or shared office

** Misc. are those programs which do not fall within categories 1-9 including ancillary service areas

[FIGURE 2.13] EXISTING DCYF NET AREAS, SCALE 1":128'



DCYF, GROWTH

DCYF projects a 17% staff growth of the agency by 2030 to a total of 275 employees.

[FIGURE 2.11] OIC STAFF GROWTH PROJECTIONS

2020 STAFF	2025 STAFF	2030 STAFF
715	800 (+12%)	850 (+19%)

DCYF, SPACE ALLOCATION

DCYF doesn't currently have defined adjacency needs, but these would be developed as the second phase of programming evolves.

Current space utilization for DCYF is 265 GSF per person. Current spaces are low on meeting spaces, as well as, secure reception and arrival spaces.

TARGET USE DENSITY AND SPACE REQUIREMENTS

Figure 2.14 describes the current use density of DCYF as well as the target use density. A target density of 230 FTE/GSF was agreed upon by DCYF after study and review of the existing spaces and comparing these spaces to the OFM guidelines for a modern work environment. Increased efficiencies from current conditions are anticipated by the consolidation of disparate offices, as well as an updating of the workspace environment to meet current industry standards. A further increase in density will be explored in phase 2 of the Predesign.

[FIGURE 2.14] EXISTING AND TARGET DENSITY

EXISTING USE DENSITY

STAFF	DENSITY	BUILDING AREA
715 (2020)	265 FTE/GSF	**190,000 GSF**

TARGET USE DENSITY

STAFF	DENSITY	BUILDING AREA
850 (2030)	**230 FTE/GSF**	**195,500 GSF**

[FIGURE 2.15] COMBINED SPACE REQUIREMENTS

AGENCY	STAFF (2030)	TARGET DENSITY	BUILDING AREA
OIC	275	230 FTE/GSF	**63,250 GSF**
OIC + DCYF	1,125	230 FTE/GSF	**258,750 GSF**

TECHNICAL PROGRAM

Detailed consultant narratives related to the technical program for the project are included in the Appendix

BUILDING PERFORMANCE

The project is targeted to several energy performance and conservation resource requirements.

- ESSB 6095 Section 1035 defines specific requirements for this project that include high performance buildings and net zero-ready standards; energy use intensity (EUI) no greater than 35; a performance-based procurement method such as design build and an energy performance guarantee that compares actual performance data with the energy design target.
- RCW 39.35D.030 defines requirements for projects receiving state funding that include at minimum LEED Silver certification. The current United States Green Building Council (USGBC) LEED standard is V.4 Silver certification requirements.
- Executive Order 18-01 which requires that newly constructed state-owned (including lease-purchase) buildings be designed to be zero energy or zero energy capable and include consideration of net-embodied carbon.

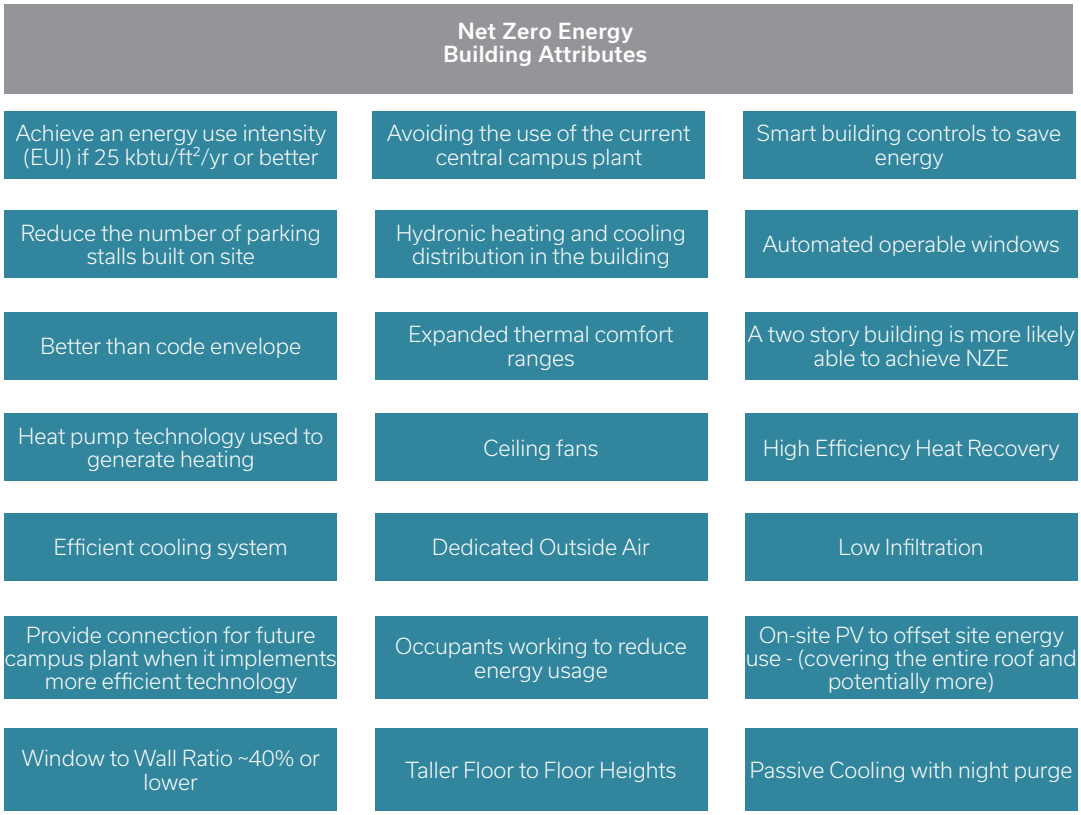
These targets will reduce energy consumption by twenty to fifty percent compared with the code required baseline and reduce carbon emissions.

STRUCTURE AND MATERIALS

The building superstructure is assumed to be steel as a baseline cost scenario. A structural alternative of cross laminated timber (CLT) following the provisions of SHB 1102, Section 1092 is also studied within this Predesign.

The exterior and interior materials palette is assumed to be comparable to the newest buildings on the capitol campus, the Helen Sommers Building and 1500 Jefferson. Exteriors will consist of stone veneer, precast concrete, metal panels and aluminum curtainwall assemblies. Interior public spaces will feature wood paneling, stone floors, glass guardrails, wood doors and acoustic plaster.

[FIGURE 2.16] NET ZERO ENERGY BUILDING ATTRIBUTES



SECURITY

The Washington State Capitol Campus follows the US Department of Homeland Security Interagency Security Committee (DHS ISC) Risk Management Process Standard that defines the criteria and processes that those responsible for facility security should use in determining its security level. This standard provides an integrated, single source of physical security countermeasures and guidance on countermeasure customization for all Capitol Campus facilities. Through coordination with the Department of Enterprise Services Capitol Security & Visitor Services (DES CSVS) Division, it has been determined the facility security level (FSL) rating for this proposed facility is a level III. New construction projects on the Capitol Campus, with few exceptions, are fully expected to meet the necessary level of protection (LOP). Any request for deviation to the FSL shall be approved by DES CSVS. Non-compliance to the appropriate LOP has the potential to leave the facility exposed to risks in protecting their workforce, visitors and the facility itself. High-level components of countermeasures include:

- Site Security/Crime Prevention Through Environmental Design (CPTED)–CPTED is a multi-disciplinary approach for reducing crime through urban and environment design. CPTED aims to reduce victimization, deter criminal acts and build a sense of community so they can gain territorial control of areas and reduce opportunities for crime and fear of crime. Components of CPTED cover: Lighting, Landscaping, and Signage.
- Security Technologies–use of security technologies build upon the structure makeup of the facility and use of CPTED for security of the facility and adjacent grounds. Components of security technologies include: Electronic access control incorporating electric strikes, card readers, and door position switches; High definition internet protocol (IP) video surveillance camera; Duress

alarm buttons; Intrusion detection systems; and Structure Security

- Vehicle barriers and vehicle access control–additional enhancements to a facility that has adjacencies to roads and parking lots in which vehicle barriers are deployed to prevent a vehicle borne attach and vehicle access control measures that only allow authorized parkers.
- Facility Critical Infrastructure Protection–includes the security of air intakes, filtration levels, security of power and auxiliary power locations, and water supply.
- Blast resistance for façade, windows and progressive collapse prevention.

PARKING

Parking and transportation access is an important component to any new development on the capitol campus. Two recent studies evaluate the existing parking on capitol campus:

2009 Washington State Capitol Campus Parking Study

2014 State of Washington Capitol Campus Transportation and Parking Study.

Both studies stress the need for Transportation Management Plans to meet the intent of the State Capitol Master Plan (2006) as well as the Commute Trip Reduction Law (1991) to reduce the number of single occupancy vehicles on campus. Additionally, Executive order 16-07 mandates a 9% participation in telework from state agencies by 2017.

Current capitol campus parking, in particular during legislative session, has reached a point of practical capacity. As described in the 2014 State of Washington Capitol Campus Transportation and Parking Study:

"New parking demands generated by future employee growth or new developments could adversely affect circulation to and within the campus unless mitigation measures are implemented."

Construction of a OIC building or a combined OIC and DCYF building would further increase the parking demand on campus and could not be reasonably absorbed within the limited parking available. Additional parking would need to be added in conjunction with any project construction. New parking could be constructed on the project site, within proximity of campus, or a mixture of both.

PARKING COST

Parking facilities are expensive and have a significant impact on development costs. Reducing demand through required Transportation Demand Management and Commute Trip Reduction measures is the most cost-effective solution to parking demand.

Below-grade parking is typically the most expensive solution since it requires excavation, hauling, pile and shoring as well as waterproofing, ventilation,stairs and elevators. Access ramps to below-grade parking typically reduce the usable area on the ground floor of a building, which can impact public use facilities. Cost efficiency for structured parking typically increases with the footprint and number of levels of the facility due to the expense of ramps, stairs and elevators.

Surface parking is much less expensive and may be more flexible, allowing for future development of the site for other uses.

PARKING DEMAND CALCULATION

The CTR plan proposes a limit for drive-alone parking capacity of 63.8% of employees and provides carpool and vanpool parking for 18.6% of employees. This criteria along with the 9% teleworking mandate from EO 16-07 forms a basis for calculating the parking demand for new construction.

Summarized in the alternatives analysis in Chapter 3, none of the opportunity sites would be able to accommodate on-site all of the parking demand required from a newly constructed OIC building, unless below grade parking is constructed. However, because below-grade parking is often cost prohibitive, off-site alternatives in the form of surface parking or an above-grade parking garage, could be a more financially feasible solution. Off-site parking solutions would be considered as part of a broader TMP for the campus.

All parking calculations included in this phase 1 report are preliminary a will be refined in phase two with the selected preferred alternative. Parking demand figures are extrapolated from the latest TMP that is over 5 years old. Parking demand is expected to be reduced as transportation needs

evolve and with the State's continued initiative to minimize single occupancy vehicles and maximize public transportation.

Each of the four opportunity sites contain existing parking used by the campus. The existing parking that will be displaced with a newly constructed facility has been considered with each predesign scheme and is included in the preliminary demand figures and budgets.

It is anticipated that portions of parking facilities assigned to existing on-campus OIC and DCYF offices will be reassigned to new users who will move into vacated OIC and DCYF spaces after these agencies relocate to the new facility. Therefore, existing parking used by OIC and DCYF on-campus is excluded from parking demand estimates associated with the new facility.

RENOVATION OF EXISTING STRUCTURES

Opportunity sites 12 and 01 have existing buildings which would be demolished for the construction of the ICOB. Previous predesigns considering the GA site have outlined the cost and parameters for the renovation and reuse of the existing 283,865GSF building. A renovation option has not been included within this predesign due to the following reasons:

1) The existing GA building does not have a floor plate conducive to natural daylighting requirements for a net-zero project. Cost to modify the floor plate to meet net-zero would be prohibitive.

2) Increased seismic requirements of the current building code would increase cost of renovation substantially.

3) The renovation would not use CLT and thus not meet the requirements of the Proviso.

4) The existing structural grid would decrease the flexibility for workspace layout and reduce overall interior efficiency.

The two existing structures located on the Proarts Site are too small (11,000GSF, and 1,500GSF) for the program needs of OIC. Renovation and reuse of the two structures would limit the development capacity of the site and be prohibitive to constructing a large enough building on the rest of the site. Therefor, a renovation option for the Proarts site has not been included.

[FIGURE 2.17] PARKING DEMAND PER OPPORTUNITY SITE

OPPORTUNITY SITE	**EXISTING PARKING QUANTITY***	**ESTIMATED DEMAND** (DEMAND FOR NEW BUILDING + DISPLACED PARKING)**	**ESTIMATED ON-SITE SURFACE PARKING QUANTITY**	**ESTIMATED PARKING QUANTITY TO BE ACCOMMODATED OFF-SITE**	**OFF-SITE PARKING COST** (IN MILLIONS)
01, GA Site	120	288	170	118	$14-16.5
06, Visitor Center Site	82	250	65	185	$22-26
07, IBM Site	19	187	25	162	$19.5-22.5
12, ProArts Site	80	248	50	198	$24-28
01/ALT. 02 GA Site (with combined OIC and DCYF building)	120	798	70	728	$67-80

*Indicates the existing parking on-site that would be displaced with the construction of a new building
** As outlined within Figure 1.2, Estimated OIC demand = 168 stalls. DCYF + OIC demand = 678 stalls.

3 ALTERNATIVES ANALYSIS

ALTERNATIVES IDENTIFICATION

The provisions of SHB 1102 section 1092 require an evaluation of four opportunity sites on the state capitol campus.

(1) General Administration Building (GA) Site

(6) Visitor Center Site (East Block Only)

(7) IBM Site

(12) Professional Arts (ProArts) Site

As outlined in Chapter 2, Figure 2.6, the estimated gross area required for a new building to house OIC is 63,250 GSF. This required gross area is evaluated for each of the four sites in order to select a preferred alternative. A combined DCYF and OIC program (258,750 GSF) has also been evaluated as a modification to the preferred alternative. Due to its size, a combined DCYF and OIC project is only viable for Opportunity Site 1.

COMPARISON TO THE 2017 STATE CAPITOL DEVELPMENT STUDY

The 2017 State capitol development study outlines the "highest and best" use for Sites 1, 6, and 12. Within the study, the developmental capacity for each site is determined and criteria for future development is detailed. Figure 3.1 compares the required gross area for a new ICOB to the development capacity defined within the 2017 study. This figure finds the 63,250GSF program required for OIC is smaller than the development capacity of each of the four sites.

Similarly, figure 3.02 compares a combined OIC and DCYF program to the development capacity of each opportunity site. The figure illustrates only the Opportunity Site 1 is large enough to accommodate a combined OIC and DCYF program.

Although the "highest-and-best" use for opportunity Site 7, is not studied in the 2017 State Capitol Development Study, a development capacity of 73,000 GSF can be determined by using the same typological criteria defined within the study. Following the common cornice elevation of the West campus buildings, a maximum four story building on this site is consistent within the campus context.

[FIGURE 3.01] OIC AREA VS SITE CAPACITY

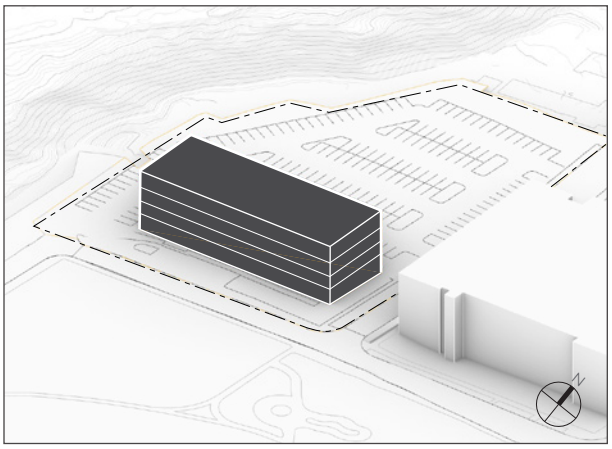
SITE	SITE CAPACITY	OIC GROSS AREA	FITS ON SITE
01, GA	274,750 GSF	63,250 GSF	**YES**
06, Visitor Center	132,500 GSF	63,250 GSF	**YES**
07, IBM	73,000 GSF	63,250 GSF	**YES**
12, ProArts	148,000 GSF	63,250 GSF	**YES**

[FIGURE 3.02] OIC+DCYF AREA VS SITE CAPACITY

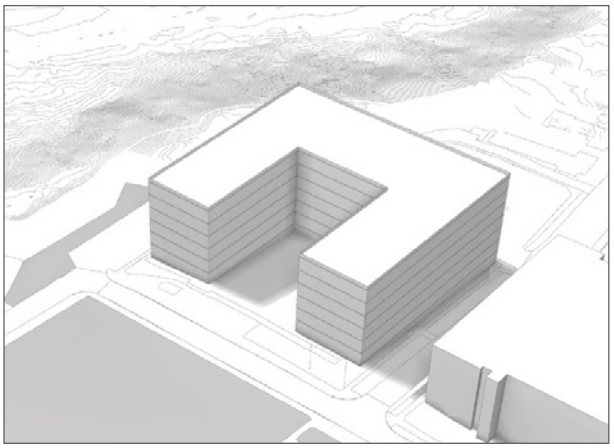
SITE	SITE CAPACITY	OIC+DCYF GROSS AREA	FITS ON SITE
01, GA	274,750 GSF	258,750 GSF	**YES**
06, Visitor Center	132,500 GSF	258,750 GSF	**NO**
07, IBM	73,000 GSF	258,750 GSF	**NO**
12, ProArts	148,000 GSF	258,750 GSF	**NO**

OPPORTUNITY SITE 01, GENERAL ADMINISTRATION BUILDING, ALT. 1

- Four-story office building on South edge of Opportunity Site 01 to house the Office of The Insurance Commissioner.
- Development on this opportunity site activates a very visible portion of the west campus and reinforces the line of new development on 11th Ave SE.
- The building requires a total 63,250GSF of program space for 275 full-time staff and 168 parking stalls.
- Vacant GA building requiring annual maintenance cost of $315,000 will be demolished.
- Existing 150-stall surface parking will be replaced with new, reconfigured for approximately 170 surface stalls. The project requires an additional 118 stalls off-site.
- According to preliminary information provided by City of Olympia, there will be no impact fees due to credit for demolition of GA building, assuming construction commences within 6 years of the demolition.



[FIGURE 3.04] PREDESIGN STUDY - OS 01



[FIGURE 3.03] CAPACITY MODEL FROM THE 2017 STATE CAPITOL DEVELOPMENT STUDY

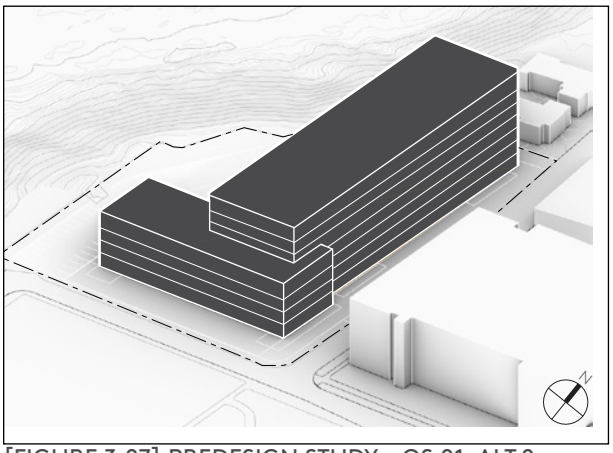
[FIGURE 3.05] OPPORTUNITY SITE 01 BUDGET

	DESCRIPTION	COST
Sitework		$13,263,522
Facility Construction, OIC	63,250 GSF, four stories	$51,471,099
Construction Target Budget		**$64,734,621**
Multiplier @ 40%		$25,893,848
ICOB Target Project Budget		**$90,628,469**
Additional Considerations:		
Required Off-Site Parking	118 Stalls above-grade	$14 - 16.5 million

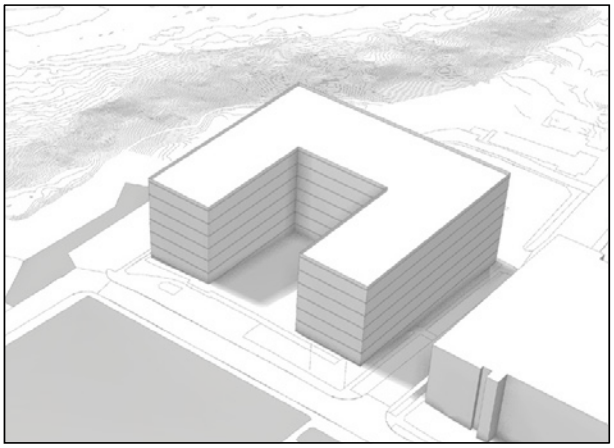
[FIGURE 3.06] PREDESIGN STUDY - OS 01

OPPORTUNITY SITE 01, GENERAL ADMINISTRATION BUILDING, ALT. 2

- Seven-story office building on Opportunity Site 01 to house the OIC and DCYF
- Development on this opportunity site activates a very visible portion of the west campus and reinforces the line of new development on 11th Ave SE.
- The building requires a total 258,750 GSF of program space for 1,125 full-time staff and 678 parking stalls.
- Vacant GA building requiring annual maintenance cost of $315,000 will be demolished.
- Project includes an estimated 70 surface parking stalls and requires an additional 728 stalls off-site.
- According to preliminary information provided by City of Olympia, there will be no impact fees due to credit for demolition of GA building, assuming construction commences within 6 years of the demolition.



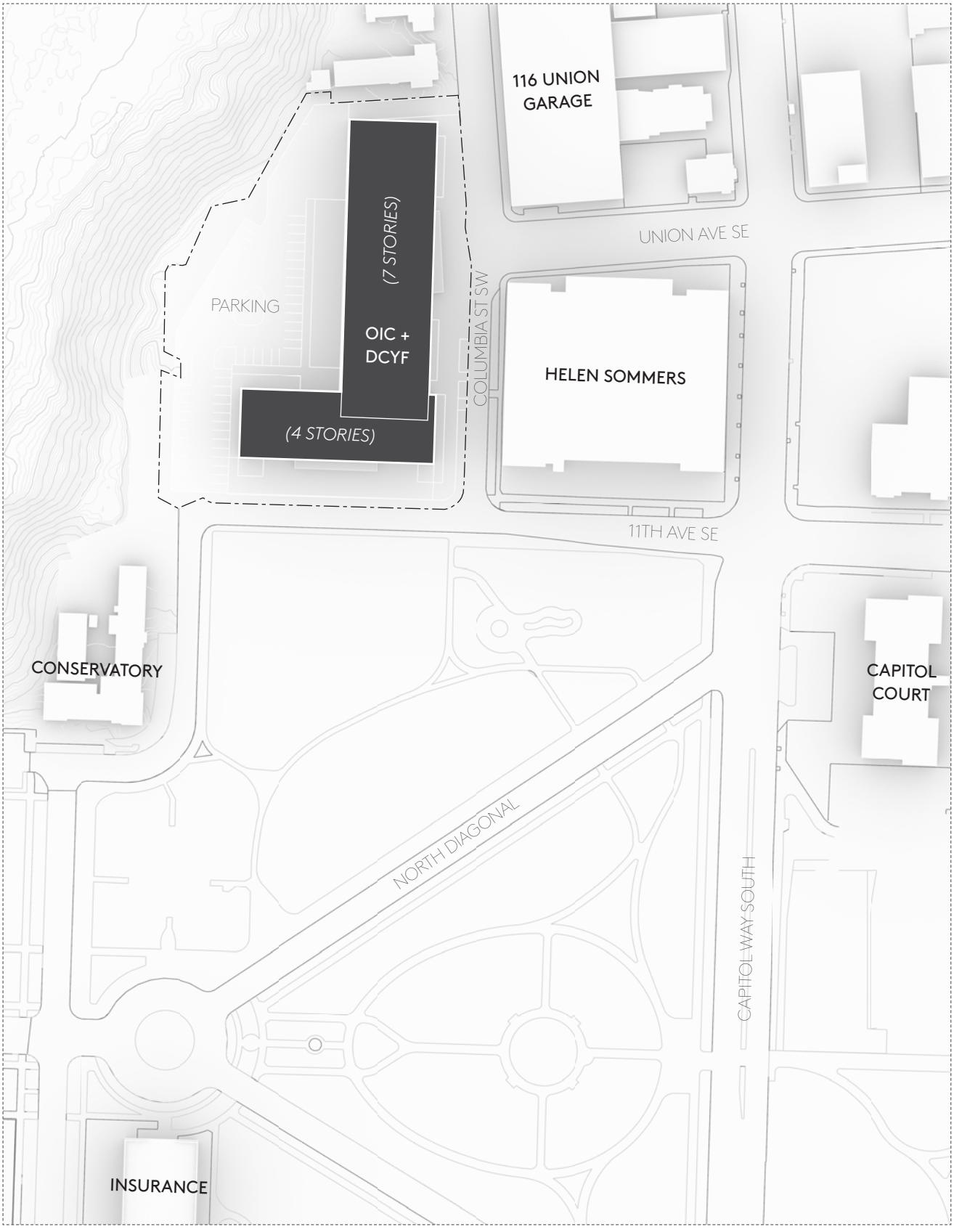
[FIGURE 3.07] PREDESIGN STUDY - OS 01, ALT 2



[FIGURE 3.08] CAPACITY MODEL FROM THE 2017 STATE CAPITOL DEVELOPMENT STUDY

[FIGURE 3.09] OPPORTUNITY SITE 01, ALT. 02 BUDGET

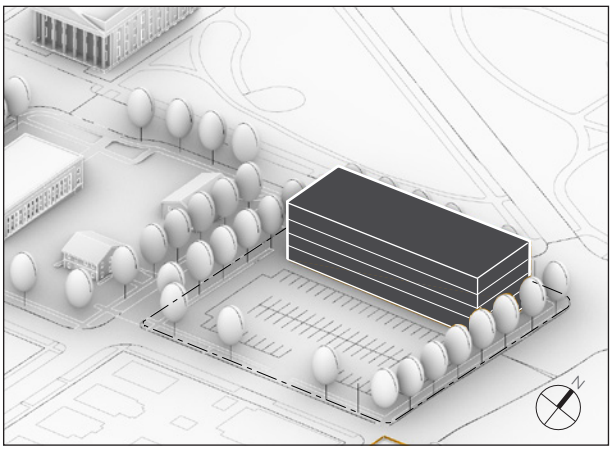
	DESCRIPTION	COST
Sitework		$12,419,091
Facility Construction, OIC	63,250 GSF, four stories	$51,471,099
Facility Construction, DCYF	195,000 GSF, seven stories	$172,209,562
Construction Target Budget		**$236,009,752**
Multiplier @ 40%		$68,546,052
ICOB + DCYF Target Project Budget		**$330,539,653**
Additional Considerations:		
Required Off-Site Parking	728 Stalls above-grade	$67 - 80 million



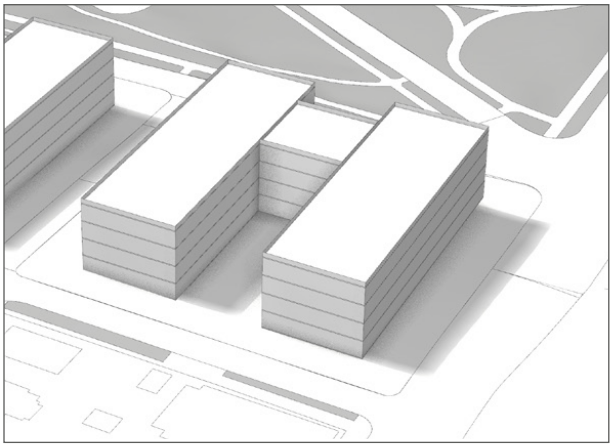
[FIGURE 3.11] PREDESIGN STUDY - OS 01

OPPORTUNITY SITE 06, VISITOR CENTER (EAST BLOCK)

- Four-story office building on North edge of Opportunity Site 06 to house the Office of The Insurance Commissioner.
- Development on this opportunity site activates a very visible entry location to the west campus and reinforces the campus edge along Sid Snyder Ave SW.
- The building requires a total 63,250GSF of program space for 275 full-time staff and 168 parking stalls.
- The existing Visitor Center building, currently vacated, to be demolished as well as 82 existing surface parking stalls.
- Project includes an estimated 65 surface parking stalls and requires an additional 185 stalls off-site.
- The existing pedestrian bridge over Capitol Way S. may or may not need to be relocated depending on final building design. Bridge modification cost area not included within the budget estimates.
- According to preliminary information provided by City of Olympia, approximately $700,000 will be assessed in transportation impact fees. These fees are covered in the 40% multiplier.



[FIGURE 3.12] PREDESIGN STUDY - OS 06



[FIGURE 3.13] CAPACITY MODEL FROM THE 2017 STATE CAPITOL DEVELOPMENT STUDY

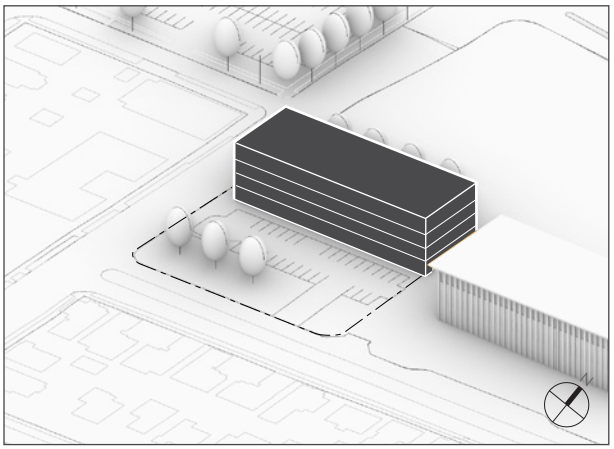
[FIGURE 3.14] OPPORTUNITY SITE 06 BUDGET

	DESCRIPTION	COST
Sitework		$3,759,358
Facility Construction, OIC	63,250 GSF, four stories	$51,471,099
Construction Target Budget		**$55,230,457**
Multiplier @ 40%		$22,092,183
ICOB Target Project Budget		**$77,322,640**
Additional Considerations:		
Required Off-Site Parking	185 Stalls above-grade	$22- 26 million

[FIGURE 3.15] PREDESIGN STUDY - OS 06

OPPORTUNITY SITE 07, OLD IBM

- Four-story office building on North edge of Opportunity Site 07 to house the Office of The Insurance Commissioner.
- Development on this opportunity site activates a campus entry point along Capitol Way South and is in close proximity to the East Plaza garage.
- The building requires a total 63,250 GSF of program space for 275 full-time staff and 168 parking stalls.
- The project requires the demolition of 19 existing parking stalls.
- Parking on site is limited due to the small site area. The project scale allows for an estimated 25 on-site parking stalls, and requires an additional 162 off-site stalls to account for new building demand and existing displaced stalls.
- According to preliminary information provided by City of Olympia, approximately $726,000 will be assessed in transportation impact fees. These fees are covered in the 40% multiplier.



[FIGURE 3.16] PREDESIGN STUDY - OS 07

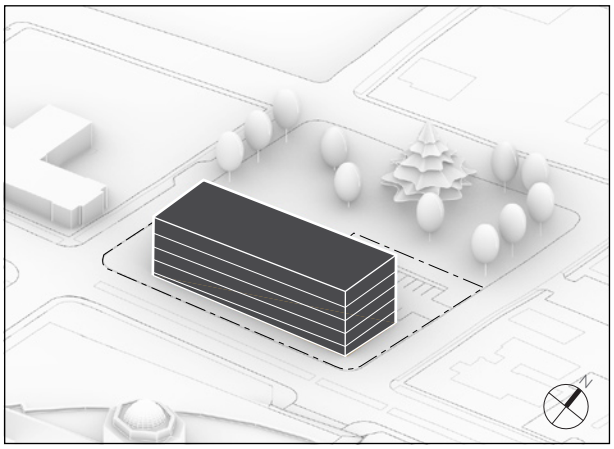
[FIGURE 3.17] OPPORTUNITY SITE 07 BUDGET

	DESCRIPTION	COST
Sitework		$1,289,873
Facility Construction, OIC	63,250 GSF, four stories	$51,471,099
Construction Target Budget		**$52,760,972**
Multiplier @ 40%		$21,104,389
ICOB Target Project Budget		**$73,865,361**
Additional Considerations:		
Required Off-Site Parking	162 Stalls above-grade	$19.5-22.5 million

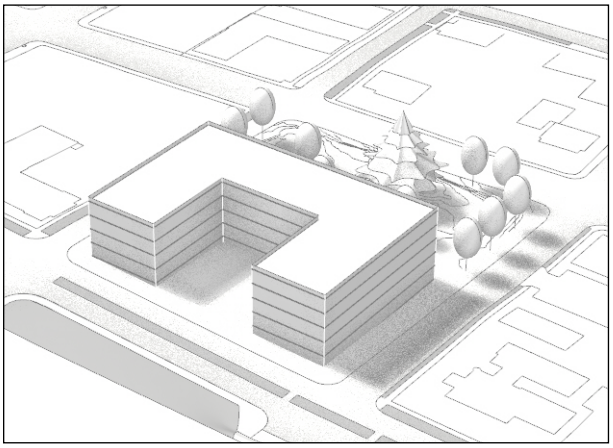
[FIGURE 3.18] PREDESIGN STUDY - OS 07

OPPORTUNITY SITE 12, PROARTS

- Four-story office building on South edge of Opportunity Site 12 to house the Office of The Insurance Commissioner.
- Development on this opportunity site is visible along Capitol Way South and fronts Centennial Park to the north.
- The building requires a total 63,250GSF of program space for 275 full-time staff and 168 parking stalls.
- The project requires the demolition of the Professional Arts building (11,000GSF) and the State Farm Building (1,500GSF), as well as 80 existing parking stalls.
- The project scale allows for an estimated 50 on-site parking stalls, and requires an additional 198 off-site stalls to account for new building demand and displaced existing stalls.
- According to preliminary information provided by City of Olympia, approximately $403,000 will be assessed in transportation impact fees. These fees are covered in the 40% multiplier.



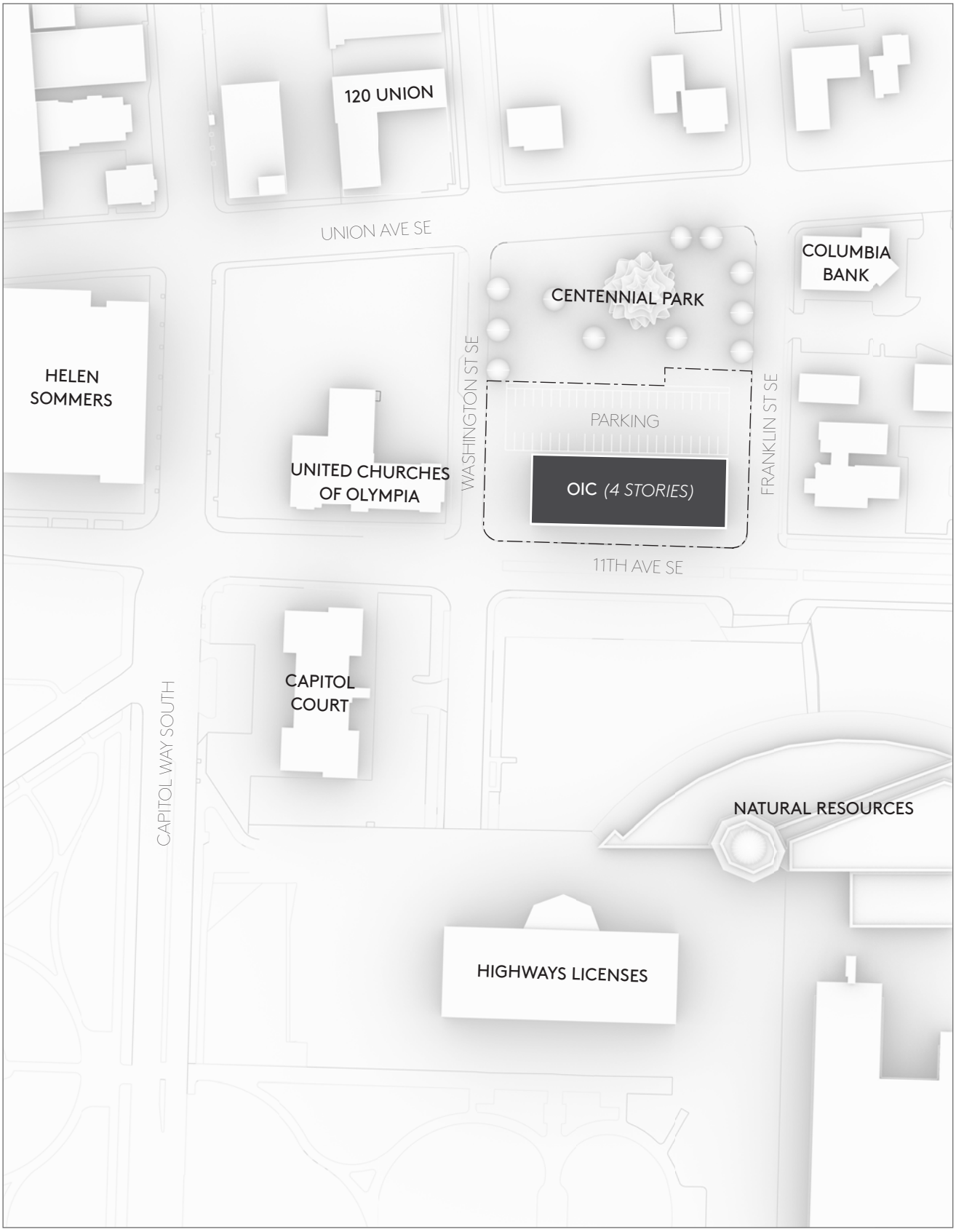
[FIGURE 3.11] REDESIGN STUDY - OS 12



[FIGURE 3.12] CAPACITY MODEL FROM THE 2017 STATE CAPITOL DEVELOPMENT STUDY

[FIGURE 3.19] OPPORTUNITY SITE 12 BUDGET

	DESCRIPTION	COST
Sitework		$2,775,435
Facility Construction, OIC	63,250 GSF, four stories	$51,471,099
Construction Target Budget		**$54,246,534**
Multiplier @ 40%		$21,698,614
ICOB Target Project Budget		**$75,945,148**
Additional Considerations:		
Required Off-Site Parking	107 Stalls above-grade	$24-28 million



[FIGURE 3.20] PREDESIGN STUDY - OS 12

APPENDIX

APPENDIX CONTENTS

SHB 1102, SECTION 1092

NEW SECTION. **Sec. 1092. FOR THE DEPARTMENT OF ENTERPRISE SERVICES**

Insurance Commissioner Office Building Predesign (92000029)

The appropriation in this section is subject to the following conditions and limitations: The appropriation in this section is provided solely for a predesign study to determine space needs and cost estimates to construct a building on the capitol campus to house the office of the insurance commissioner.

(1) In determining the program space required, the predesign must consider:

(a) The necessary program space required to support the office of the insurance commissioner, to include detail on current space usage by facility compared to proposed space usage; and

(b) Parking impacts of new office space construction.

(2) The study must consider, at a minimum:

(a) The potential to fund design and construction of the building from sources other than state general obligation bonds;

(b) The financial cost analysis of current facility leases compared to the cost of a financial contract for the new building, to include operating budget cost impacts by fund source by fiscal year; and

(c) The following opportunity sites for the building, detailed in the 2017 state capitol development site study:

(i) Site 1, the general administration building;

(ii) Site 12, the professional arts building;

(iii) Site 7, the old IBM building; and

(iv) Site 6B, the visitor center;

(3) The building must be a:

(a) High performance building and meet net-zero-ready standards, with an energy use intensity of no greater than thirty-five;

(b) Building construction that must be procured using a performance-based method such as design-build and must include an energy performance guarantee comparing actual performance data with the energy design target; and

(c) Design that includes cross-laminated timber products.

(4) The predesign study must result in:

(a) A preliminary report being submitted to the fiscal committees of the legislature by February 28, 2020; and

(b) A final report being submitted to the fiscal committees of the legislature by June 30, 2020.

Appropriation:

Insurance Commissioners Regulatory Account—State. . . . $300,000

Prior Biennia (Expenditures). $0

Future Biennia (Projected Costs). $0

TOTAL. $300,000

OIC PROGRAM SUMMARY TABLES

OFFICE OF INSURANCE COMMISIONER - EXISTING SPACE SUMMARY AND PROJECTIONS								
FLOOR	ROOM NUMBER	ROOM NAME	DEPARTMENT	ROOM USE	NUMBER OF OCCUPANTS	OCCUPANT TOTALS	NET SF (room/space size)	NOTES
Insurance 5000 Building								
		Agency Shared						
1	101	Reception/Lobby	Shared	Reception/Lobby			675	Seating for 4
1	109	Copy Room	Shared	Copy/Print			102	
1	110	Mail Room	Shared	Mail				Dedicated/secured with a card key
1	115	Supply Room	Shared	Office Supplies			153	
1	118	Copy/Print Room	Shared	Copy/Print			376	
1	119	Conference Room	Shared	Conference Room			190	Seating for 8
1	120	Training Room	Shared	Large meeting room			880	Seating for 40
1	121	Interview Room	Shared	Meeting room with consumers			100	
1	122	Wellness Room	Shared	Wellness program room			100	
1	138	Conference Room	Shared	Conference Room			292	Seats 14
1	148	Lunchroom	Shared	Lunch/Break Room			531	Sink, refrigerators, cabinets, seats 21
1	151	Conference Room	Shared	Conference Room			292	Seats 14
1	1018 & 156	(2) Storage Room	Shared	Storage			179	
1	193	Electrical Room	Shared	Electrical Room			193	
1	239	Demarcation Room	Shared	Telephone & Computer			189	
1	Area 06	Copy/Print Area	Shared	Copy/Print			59	
2	200	Lobby	Shared	2nd Floor Lobby			502	
2	206	Storage	Shared	Storage			56	
2	206	Conference Room	Shared	Conference Room			227	Seating for 8
2	215	Media Room	Shared	Training			175	
2	220	Copy/Print Room	Shared	Copy/Print			285	
2	221	Conference Room - Executive	Shared	Executive meetings			532	Seating for 20
2	230	Conference Room	Shared	Conference Room			236	Seating fo 10
2	232	Copy/Print Room	Shared	Copy/Pring			131	
2	239	Telephone Room	Shared	Telephone Room			86	
2	240	Computer Rom	Shared	Computer Room			366	Dedicated/secured with a card key
2		(4) Coffiee Bar	Shared	Coffee Bar			257	Sink and cabinets
2	Area 11	Executive Lobby	Shared	Executive waiting area			270	
2	Area 14	Copy/Print	Shared	Copy/Print			74	
2	Area 15	Copy/Print	Shared	Copy/Print			112	
							7,620	
1st Floor		**Company Supervision**						
		Company Licensing						
1		Company Licensing Manager	Company Supervision	Private office	1		120	1 Staff + seating for 3
1	WS3,4,7-10	Open Office Area	Company Supervision	Workstation	5		413	(6) cubicles in workstations
		Consumer Protection						
1	144	Deputy Consumer Protection	Consumer Protection	Private Office	1		238	1 Staff + seating for 5
1	WS37	Executive Assistant	Consumer Protection	Workstation	1		106	
		Producer Licensing & Outreach						
1	140	PL&O Manager	Producer Licensing & Outreach	Private office	1		149	1 Staff + seating for 3
1	WS82-91	Open Office Area	Producer Licensing & Outreach	Workstation	10		1,075	(10) cubicles in workstations
1		*SHIBA*						
1		SHIBA Manager	SHIBA	Private office	1		142	
1	152	SHIBA Customer Service	SHIBA	Call Center	2		143	
1	WS63, 71-81	Open Office Area	SHIBA	Workstation	12			(12) cubicles in workstations
		Consumer Advocacy						
1	150	Consumer Advocacy Manager	Consumer Advocacy	Private office	1			1 Staff + seating for 3
1	WS33-62	Open Office Area	Consumer Advocacy	Workstation	26		2,729	(30) cubicles in workstations
		Legal Affairs						
1	124	Deputy Legal Affairs	Legal Affairs	Private Office	1		225	1 Staff + seating for 5
1	WS22	Executive Assistant	Legal Affairs	Workstation	1		106	
1	125	Manager	Legal Affairs	Private Office	1		143	1 Staff + seating for 2
1	126	Investigator	Legal Affairs	Private Office	1		143	1 Staff + seating for 2
1	127	Investigator	Legal Affairs	Private Office	1		126	1 Staff + seating for 2
1	128	Attorney	Legal Affairs	Private Office	1		144	1 Staff + seating for 2
1	129	Attorney	Legal Affairs	Private Office	1		145	1 Staff + seating for 2
1	WS11-19, 23-31	Open Office Area	Legal Affairs	Workstation	17		1,873	(21) cubicles in workstations
		Operations						
		Office Support						
1	110A	Office Support Manager	Operations	Private Office	1		250	Document scanning equipment included
1	102	Receptionists	Operations	Workstation	3		90	
		Public Records						
1	116	Public Records Manager	Operations	Private Office	1		156	1 Staff + seating for 3
1	WS5 & 6	Records Staff	Operations	Workstation	2		122	
		Rates & Forms						
		Health Network Benefits Program						
1	149	Health Network Benefits Manager	Rates & Forms	Private office	1		136	1 Staff + seating for 3
1	137	Enclosed Office Area	Rates & Forms	Workstation	4		572	(10) cubicles in workstations
1	WS64-70	Open Office Area	Rates & Forms	Workstation	0		652	(7) cubicles in workstations
2nd Floor		**Executive**						
2	224	Commission Kreidler	Executive	Private Office	1		495	Commissioner+seating for 10
	225	Executive Assistant	Executive	Private Office	1		136	1 Staff + seating for 3
	226	Chief Deputy	Executive	Private Office	1		291	1 Staff + seating for 8
	227	Executive Assistant	Executive	Private Office	1		136	1 Staff + seating for 3
		Company Supervision						
	248	Deputy Commssioner Operations	Company Supervision	Private Office	1		237	1 Staff + seating for 6
	WS155	Executive Assistant	Company Supervision	Workstation	1		90	
	212	Market Conduct Manager	Company Supervision	Private Office	1		125	
	213	Chief Financial Examiner	Company Supervision	Private Office	1		113	
	214	Scanning station	Company Supervision	Workstation	1		167	(2) cubicles in enclosed room
	216	Chief Market Analyst	Company Supervision	Private Office	1		121	
	WS149-154	Open Office Area	Company Supervision	Workstation	5		593	(6) cubicles in workstations
	WS156-163	Open Office Area	Company Supervision	Workstation	9		880	(9) cubicles in workstations
		Operations						
	244	Deputy Commssioner Operations	Operations	Private Office	1		262	
	132	Executive Assistant	Operations	Workstation	1		107	
		Hearings Unit						
	217	Hearings Officer	Operations	Private Office	1		113	
	WS148	Executive Assistant	Operations	Workstation	1		58	
		OIC Project Section						
	218	Project Manager	Operations	Private Office	1		138	
	WS136	Special Projects Coordinator	Operations	Workstation	1		90	
	WS146&147	Application Project Coordinator	Operations	Workstation	1		134	(2) cubicles in workstations
		Fiscal						
	228	Chief Financial Officer	Operations	Private Office	1		131	
	229	Fiscal Manager	Operations	Private Office	1		131	
	WS138-142	Open Office Area	Operations	Workstation	5		399	(5) cubicles in workstations
		Human resources						
	231	Human Resources Manager	Operations	Private Office	1		148	1 Staff + seating for 3
	242A	Human Resouces Consultant	Operations	Private Office	1		112	
	242B	Human Resouces Consultant	Operations	Private Office	1		76	
	243	Human Resouces Consultant	Operations	Workstation	1		239	
		Facilities & Emergency Management						

OFFICE OF INSURANCE COMMISIONER - EXISTING SPACE SUMMARY AND PROJECTIONS								
FLOOR	ROOM NUMBER	ROOM NAME	DEPARTMENT	ROOM USE	NUMBER OF OCCUPANTS	OCCUPANT TOTALS	NET SF (room/space size)	NOTES
	233	Facilities Manager	Operations	Private Office	1		144	
	WS137	Emergency Management Specialist	Operations	Workstation	1		77	
		Information Technology						
	234	Chief Information Officer	Operations	Private Office	1		144	1 Staff + seating for 3
	235	IT Network Manager	Operations	Private Office	1		153	1 Staff + seating for 3
	236	IT Architecture Manager	Operations	Private Office	1		155	1 Staff + seating for 3
	WS118-131, 133-136	Open Office Area	Operations	Workstation	19		1,631	(19) cubicles in workstations
		Public Affairs						
2	223	Deputy Public Affairs	Public Affairs	Private Office	1		204	1 Staff + seating for 3
2	222	Public Information Officer	Public Affairs	Private Office	1		207	1 Staff + seating for 3
2	219	Web Manager	Public Affairs	Private Office	1		134	1 Staff + seating for 3
2	WS143-145	Open Office Area	Public Affairs	Workstation	3		232	(3) cubicles in workstations
		Rates & Forms						
2	246	Deputy Commssioner Rates & Forms	Rates & Forms	Private Office	1		253	1 Staff + seating for 4
2	WS103	Executive Assistant	Rates & Forms	Workstation	1		109	
2	207	Actuary	Rates & Forms	Private Office	1		120	
2	208	Actuary	Rates & Forms	Private Office	1		120	
2	209	Actuary	Rates & Forms	Private Office	1		120	
2	210	Actuary	Rates & Forms	Private Office	1		161	1 Staff + seating for 3
2	211	Actuary	Rates & Forms	Private Office	1		122	
2	218	Technician Unit	Rates & Forms	Workstation	4		254	(4) workstations in enclosed room
2	237	Life & PC Manager	Rates & Forms	Private Office	1		147	1 Staff + seating for 3
2	238	Health Manager	Rates & Forms	Private Office	1		158	1 Staff + seating for 3
2	WS94-102	Open Office Area	Rates & Forms	Workstation	9		792	(9) cubicles in workstations
2	WS104-115	Open Office Area	Rates & Forms	Workstation	11		1,132	(12) cubicles in workstations
Subtotal						**202**	**22,089**	
Insurance Building - 2nd Floor West Side								
2	200	Lobby	Shared	Entry Lobby	1			1 Receptionist + seating for 3 visitors
2	220	Commissioner	Executive	Private Office	1		525	Commissioner + seating for 10
2	220A	Executive Assistant	Executive	Private Office	1		161	
2	221	Chief Deputy Commissioner	Policy & Legislative Affairs	Private Office	1		136	1 Chief Deputy + seating for 4
2	222	Conference Room	Shared	Conference Room			284	Seating for 14 visitors
2	223	Deputy Policy & Legislative Affaris	Policy & Legislative Affairs	Private Office	1		132	1 Deputy + seating for 4
2	224	Policy Staff	Policy & Legislative Affairs	Private Office	1		144	1 Staff + seating for 3
2	225	Policy Staff	Policy & Legislative Affairs	Private Office	1		143	1 Staff + seating for 3
2	226	Policy Staff	Policy & Legislative Affairs	Private Office	1		141	1 Staff + seating for 3
2	227	Policy Staff	Policy & Legislative Affairs	Private Office	1		102	
2	228	Policy Staff	Policy & Legislative Affairs	Private Office	1		148	1 Staff + seating for 3
2	WS01-10	Open Office Area	Policy & Legislative Affairs	Workstation	10		1,248	(10) cubicles in workstations
2	Area 1	Entry	Shared	Back office entry			180	
2	Area 2	Electrical Room	Shared	Computer Network Equipment			51	Computer Network Equipment
2	Area 3	Mail/Copy Room	Shared	Mail/Copy Room			237	Copier, shelving and tables
2	Area 4	Storage Vault	Shared	Storage			106	Shelving for office supplies
2	Area 5	Lunch/Break Area	Shared	Lunch/Break Area			111	Sink, dishwasher, cabinets
2	Area 6	Coffee Bar	Shared	Coffee Bar			36	Sink, dishwasher, cabinets
Subtotal						**20**	**3,885**	
Irving Street Building - Suite C								
1	100	Conference Room	Criminal Investigations Unit	Meetings & presentations			280	Seating for 10
1	100A	Lobby	Criminal Investigations Unit	Front lobby			139	Seating for 5
1	101	Detective Office	Criminal Investigations Unit	Private Office	2		270	
1	101A	Computer/Electrical Room	Criminal Investigations Unit	Utility Room			73	Telephone, computer network, security hardware
1	102	Evididence Room	Criminal Investigations Unit	Case Evidence storage			96	Secured with keycard access
1	103	Breakroom	Criminal Investigations Unit	Breakroom			144	Sink, dishwasher, cabinets, seating for 4
1	104	Detective Office	Criminal Investigations Unit	Private Office	2		260	
1	105	Detective Office	Criminal Investigations Unit	Private Office	1		181	
1	106	Director's Office	Criminal Investigations Unit	Private Office	1		325	1 Staff+seating for 5
1	107	Detective Office	Criminal Investigations Unit	Private Office	2		241	
1	108	Evidence Manager	Criminal Investigations Unit	Private Office	2		272	
1	WS01	Executive Assistant Workstation	Criminal Investigations Unit	Workstation	1		192	1 staff+seating for 2
1	WS2-4	Staff Workstation	Criminal Investigations Unit	Workstation	1		245	(3) cubicles in workstations
1	WS07	Staff Workstation	Criminal Investigations Unit	Workstation	1		141	
1	Area 1	Copier/Fax/Supply	Criminal Investigations Unit	Copier/Fax/Supply			84	
Subtotal						**13**	**2,943**	**36,537**
					Total existing staff	**235**		

DCYF PROGRAM SUMMARY TABLES

DEPARTMENT OF CHILDREN, YOUTH AND FAMILIES - EXISTING SPACE SUMMARY AND PROJECTIONS								
FLOOR	ROOM NUMBER	ROOM NAME	DEPARTMENT	ROOM USE	NUMBER OF OCCUPANTS	OCCUPANT TOTALS	NET SF (room/space size)	NOTES
1500 Jefferson								
1		Entry Lobby	Shared	Entry Lobby			4,000	Approx SF
1		Loading Dock and Service	Shared	Loading Dock and Service			1,000	Approx SF - Not used often at this location, See dwg
1		Presentation Room	Shared	Presentation Room			2,301	For entire building
1		Bike and Locker Rooms	Shared	Bike and Locker Rooms			1,518	For entire building
1		Telephone Rooms	Shared	Telephone Rooms			300	For entire building
Subtotal						**0**	**9,119**	
2		Food Service Vendor	Vendor	Food Service Vendor			2,400	Vendor services entire building
2		Conference Center	Shared	Conference Center			7,500	Conf Ctr for entire building
2	2226		DCYF	Secretary's Office	1	1	245	
2	2224		DCYF	Deputy Secretary	1	1	190	
2	2260		DCYF	Assistant Secretary	1	1	170	
2		Std Private Office	DCYF	Private Office	11	11	1,265	11 private offices at 115 SF each
2	2216	Conference Room	DCYF	Small Conf Room			170	
2	2063	Conference Room	DCYF	Medium Conf Room			220	
2	2229	Conference Room	DCYF	Large Conf Room			435	
2	2263	Copy Center	DCYF	Supply / Copy Center			483	
2		Open Office Area	DCYF	Open office area	90	90	10,500	90 workstations incl circulation
2		Open Office Area	DCYF	Open office area	12	12	1,650	12 workstations incl circulation
2		Phone Rooms	Shared	Phone Rooms			144	4 phone rooms at 36 SF each
2	2026	Social Hub / Breakroom	Shared	Social Hub / Breakroom			1,250	
Subtotal						**116**	**26,622**	
1115 Washington - Office Building 2 (Capital Campus) - Shared with DSHS								
SL		Storage	DCYF	Storage			2,750	Previously used for scan operations
SL		Food Service Vendor	Shared	Food Service Vendor			5,500	Vendor services entire building - Approx SF
SL		Auditorium	Shared	Auditorium			5,700	Approx SF - Not used often at this location
Subtotal						**0**	**13,950**	
2	2SE-102	Asst Secretary	DCYF	Asst Secretary	1	1	286	
2	2SE-104,8,9	Large Private Office	DCYF	Large Private Office	3	3	645	3 PO's at 215 SF each
2		Copy Center	DCYF	Copy Center			325	
2		Mail Room	Shared	Mail Room			240	
2		Conf Room	DCYF	Conf Room			290	2 at 145 SF each
2		Storage	DCYF	Storage			145	
2		Open Office area	DCYF	Open Office area	50	50	7,150	50 workstations incl circulation, will be increased to 68 workstations
2		Break Area	DCYF	Break Area			120	
2		File / Support area	DCYF	File / Support area			200	
2		Open Office area	DCYF	Open Office area	33	33	3,500	33 workstations incl circulation
2		Small Private Office	DCYF	Small Private Office	1	1	100	
2		Scan Storage Room	DCYF	Scan Storage Room			100	
2		Small Conf Room	Shared	Small Conf Room			300	3 conf rooms at 100 SF each
2		Break Room	Shared	Break Room			145	
Subtotal						**88**	**13,546**	
3		Conference Rooms	Shared	Conference Rooms			3,000	Multiple Conf rooms in center of bldg
3		Break Room	DCYF	Break Room			145	
3		Mail Room	DCYF	Mail / Copy Center			325	
3		Scan Storage Room	DCYF	Storage Room			100	
3		Conf Room	DCYF	Conf Room			340	2 at 170 SF each
3		Large Private Office	DCYF	Large Private Office	2	2	430	2 PO's at 215 SF each
3		Large Private Office	DCYF	Large Private Office	1	1	167	
3		Open Office area	DCYF	Open Office area	134	134	18,500	134 workstations incl circulation
3		File / Support area	DCYF	File / Support area			200	
Subtotal						**137**	**23,207**	
1310 Jefferson								
1		copy supply mail	DCYF				128	
1		open office total 1	DCYF	open office total 1	22	22	1,660	IT staff
1		open office total 2	DCYF	open office total 1	14	14	2,140	IT staff
1		conf / collab room	DCYF	conf / collab room			390	2 at 195 each
1		conf / collab room	DCYF	conf / collab room			320	2 at 160 each
1		lan room	DCYF	lan room			92	
1		break area	DCYF	break area			235	
1		large conf / collaboration	DCYF	large conf / collaboration			850	couches, tables, bars, chairs, etc
Subtotal						**36**	**5,815**	
2		Wellness Room 1	DCYF	Wellness Room 1			120	
2		Wellness Room 2	DCYF	Wellness Room 2			165	
2		large conf/training	DCYF	large conf/training			660	accordian wall in middle
2		Storage	DCYF	Storage			348	
2		Storage	DCYF	Storage			116	
2		Storage	DCYF	Storage			42	
2		copy supply mail	DCYF	copy supply mail			260	
2		lunch room	DCYF	lunch room			347	
2		personal property storage	DCYF	personal property storage			40	lockers

DEPARTMENT OF CHILDREN, YOUTH AND FAMILIES - EXISTING SPACE SUMMARY AND PROJECTIONS								
FLOOR	ROOM NUMBER	ROOM NAME	DEPARTMENT	ROOM USE	NUMBER OF OCCUPANTS	OCCUPANT TOTALS	NET SF (room/space size)	NOTES
2		private offices	DCYF	private offices	7	7	840	7 at 120 SF each, public disclosure and background checks
2		open office total 1	DCYF	open office total 1	5	5	650	IT staff
2		open office total 2	DCYF	open office total 2	28	28	2,260	IT staff
2		open office total 3	DCYF	open office total 3	65	65	7,600	Public Disclosure and background checks
2		lan room	DCYF	lan room			175	
2		shared office	DCYF	shared office	3	3	400	IT staff
2		large offices	DCYF	large offices	2	2	340	2 at 170 each - IT
Subtotal						**110**	**14,363**	
1110 Jefferson								
1		lunch room	DCYF	lunch room			232	
1		reception	DCYF	reception	1	1	94	adjacent lobby area of around 300 sf
1		small conf room	DCYF	small conf room			120	
1		med conf room	DCYF	med conf room			180	
1		large conf/training	DCYF	large conf/training			317	
1		large conf/training	DCYF	large conf/training			530	
1		storage	DCYF	Storage			76	
1		Facilities Storage	DCYF	Facilities Storage			286	moving to warehouse
1		mail / supply room	DCYF	mail / supply room			144	
1		open office total 1	DCYF	open office total 1	12	12	1,375	includes print and filing area
1		open office total 2	DCYF	open office total 2	15	15	1,812	includes print, mail area
1		open office total 3	DCYF	open office total 3	13	13	1,495	
1		shared office	DCYF	shared office	2	2	167	
1		shared office	DCYF	shared office	3	3	214	
1		shared office	DCYF	shared office	3	3	230	
1		shared office	DCYF	shared office	4	4	316	
1		shared office	DCYF	shared office	3	3	173	
1		shared office	DCYF	shared office	3	3	206	
1		Private office	DCYF	Private office	1	1	162	
1		Private office	DCYF	Private office	1	1	130	
1		Private office	DCYF	Private office	1	1	240	
1		Private office	DCYF	Private office	1	1	186	
1		Private office	DCYF	Private office	1	1	215	
1		Private office	DCYF	Private office	1	1	220	
Subtotal						**65**	**9,120**	
2		lunch room	DCYF	lunch room			234	
2		small conf room	DCYF	small conf room			116	
2		med conf room	DCYF	med conf room			210	
2		large conf/training	DCYF	large conf/training			582	
2		Collaboration space	DCYF	Collaboration space			126	set up like living room
2		Wellness Room	DCYF	Wellness Room			123	
2		Storage	DCYF	Storage			80	
2		open office total 1	DCYF	open office total 1	6	6	590	3 facilities staff (moving to warehouse), 3 emergency management staff, includes print, mail area
2		open office total 2	DCYF	open office total 2	36	36	4,316	open office area with 36 workstations, includes print, mail areas
2		shared office	DCYF	shared office	4	4	405	
2		shared office	DCYF	shared office	2	2	124	
2		shared office	DCYF	shared office	2	2	163	
2		shared office	DCYF	shared office	2	2	137	
2		shared office	DCYF	shared office	3	3	173	
2		shared office	DCYF	shared office	3	3	268	includes print area
2		Private office	DCYF	Private office	1	1	177	
2		Private office	DCYF	Private office	1	1	177	
2		Private office	DCYF	Private office	1	1	128	
2		Private office	DCYF	Private office	1	1	140	
2		Private office	DCYF	Private office	1	1	95	
2		Private office	DCYF	Private office	1	1	173	
2		Private office	DCYF	Private office	1	1	159	
2		Private office	DCYF	Private office	1	1	288	
2		Private office	DCYF	Private office	1	1	213	
2		Private office	DCYF	Private office	1	1	152	
2		Private office	DCYF	Private office	1	1	136	
2		Private office	DCYF	Private office	1	1	147	
2		Filming room	DCYF	Filming room			155	Used by communications for filming videos
Subtotal						**70**	**9,787**	
505 Union								
2	ste 200	lunch room	DCYF	lunch room			319	
2	ste 200	reception	DCYF	reception			118	
2	ste 200	large conf/training	DCYF	large conf/training			393	
2	ste 200	storage	DCYF	Storage			56	
2	ste 200	mail / supply room	DCYF	mail / supply room			144	
2	ste 200	open office total 1	DCYF	open office total 1	19	19	3,111	includes file area
2	ste 200	Private office	DCYF	Private office	1	1	138	
2	ste 200	Private office	DCYF	Private office	1	1	123	
2	ste 200	Private office	DCYF	Private office	1	1	141	
2	ste 200	Private office	DCYF	Private office	1	1	134	
2		lan room	DCYF	lan room			68	
Subtotal						**23**	**4,745**	
2	ste 250	lunch room	DCYF	lunch room			160	

DEPARTMENT OF CHILDREN, YOUTH AND FAMILIES - EXISTING SPACE SUMMARY AND PROJECTIONS								
FLOOR	ROOM NUMBER	ROOM NAME	DEPARTMENT	ROOM USE	NUMBER OF OCCUPANTS	OCCUPANT TOTALS	NET SF (room/space size)	NOTES
2	ste 250	reception	DCYF	reception			136	
2	ste 250	large conf/training	DCYF	large conf/training			483	
2	ste 250	copier area	DCYF	copier area			41	
2	ste 250	open office total 1	DCYF	open office total 1	25	25	3,479	includes file area
2	ste 250	Private office	DCYF	Private office	1	1	156	
2	ste 250	Private office	DCYF	Private office	1	1	134	
2	ste 250	Private office	DCYF	Private office	1	1	86	
2	ste 250	Private office	DCYF	Private office	1	1	82	
2	ste 250	Private office	DCYF	Private office	1	1	79	
2	ste 250	Private office	DCYF	Private office	1	1	98	
2	ste 250	Private office	DCYF	Private office	1	1	107	
2	ste 250	Wellness Room	DCYF	Wellness Room			139	
Subtotal						**32**	**5,180**	
3	STE 300	lunch room	DCYF	lunch room			175	
3	STE 300	Private office	DCYF	Private office	1	1	156	
3	STE 300	Private office	DCYF	Private office	1	1	157	
3	STE 300	Private office	DCYF	Private office	1	1	226	
3	STE 300	Private office	DCYF	Private office	1	1	136	
3	STE 300	Private office	DCYF	Private office	1	1	136	
3	STE 300	Private office	DCYF	Private office	1	1	221	
3	STE 300	med conf room	DCYF	med conf room			248	
3	STE 300	open office total 1	DCYF	open office total 1	32	32	4100	Includes mail / copy/ print areas
Subtotal						**38**	**5,555**	**141,009**
					Total existing staff	**715**	**141,009**	

PRELIMINARY STRUCTURAL NARRATIVE

STRUCTURAL SUMMARY

Following is a summary of the structural design criteria for the project and the considerations for each of the proposed sites.

DESIGN CONSIDERATIONS

1. The selection of the individual members of the structural system shall consider the overall structure depth of each floor level and the effect on ceiling cavity and other systems. Height limits on the various sites may influence the selection of the structural system.
2. The building is expected to be designed to the 2018 International Building Code (IBC) with City of Olympia Amendments and the 2018 Washington State Energy Code. Both codes, effective July 1, 2020, shall be considered in the selection of structural system.
3. The roof will likely be designed for a combination of photovoltaic systems, green roofs, and mechanical systems.
4. The lateral force-resisting system location shall have the least interference with the openness of the office floor plate. Walls around elevator lobbies, stairs and utility rooms are likely to be shear walls or braced frames.
5. The lateral force-resisting system is expected to be designed for standard office occupancy and is not considered to be an immediate occupancy structure. This needs to be reviewed with the State to be clear that there are no emergency services housed in the building. If the building needs to be operational immediately after a major earthquake for emergency services, this will require an increase in structural resiliency.
6. Floor flatness shall meet industry standards for office floors.
7. Floor vibration control shall meet relatively tight standards so there is minimal perceptibility by occupants.
8. The selection of the structural systems and materials may be influenced by the security and blast protection requirements as directed by the State. This may include structural hardening, progressive collapse design, interior systems blast resistance, and increased strength in the exterior envelope. Site provisions will also determine the structural system requirements, for instance, adequate standoff distances and high-speed vehicle barriers may reduce the costs of the internal building system strengthening.
9. The 2018 IBC will require higher seismic design forces, heavier structure, and more stringent soil investigation requirements. Washington State structural engineers are still evaluating the cost effects of the building code changes. An increase of 1% in structural cost has been included in the cost estimate.
10. Geotechnical investigations have not been made at the specific sites that have been studied in the predesign phase. The soil conditions throughout the state capitol campus are difficult to predict and there are deep foundations adjacent to most of the proposed locations. A site-specific geotechnical investigation should be conducted prior to the schematic design phase of the project so that the foundation costs can be evaluated carefully.

OPPORTUNITY SITE 1: GA BUILDING LOCATION

STRUCTURE

A four-story office building on this site could be constructed of structural steel, concrete, or mass timber materials. The selection of structural system will be controlled by the design considerations mentioned above, the configuration of the building, and the height limits on the site. Regardless of the selected materials, the building will be designed as Class A office construction. The following systems shall be considered:

STEEL: A structural steel building consists of concrete fill on composite metal deck supported by steel beams and columns The steel will be fire-proofed with spray-on fireproofing. Structural floor system depth may be in the range of 24" to 36" depending on span lengths and floor layout. The most cost-effective lateral force-resisting system for a building of this size is a special concentric braced frame system with braced frames located on all four sides of the building.

CONCRETE: Post-tensioned cast-in-place concrete slab construction is a common construction type for multi-story office buildings in this region. This would be a system similar to the Helen Summers Building completed in 2017. This system is expected to be a higher cost than the other system choices for the size of the ICOB due to the lack of reuse of forming and shoring materials. It may be more cost competitive for the multi building, ICOB + DCYF, concept. Structural floor system thickness would range between 8" to 24" depending on the spans and floor layout. The lateral force-resisting system would be concrete walls around core areas such as elevators, stairs and shafts.

MASS TIMBER: In 2018 the state legislature passed a bill to encourage the use of innovative mass timber systems in commercial and residential construction. Mass timber is covered by the building code in construction Type IV A, B, or C. Each of these construction type designations has different requirements for the fire rating of the material, minimum thickness of wood, and fire protective, non-combustible materials.

One type of mass timber construction that is being encouraged for state office buildings is cross-laminated timber (CLT) planks. CLT planks used as floor systems are often covered with an acoustic mat and concrete topping slab to control sound transmissions and vibrations. The planks can span up to 40 feet and the floor thickness would be between 12" to 18". Supports for the CLT planks would be columns at a close spacing or beams. Support beams could be glue-laminated wood or steel with sizes ranging16" to 27" deep depending on the span length and spacing. The ICOB building would be a good size for a CLT structure. We recommend combining it with a glu-lam beam system with wood shear walls or a hybrid CLT and steel frame system with braced frames.

FOUNDATIONS

For cost estimating we assume the foundations at this location will be concrete augercast piles. Pile lengths are guessed to average 50 feet and will be reinforced with rebar cages for half the length. We estimate there would be roughly one pile for every 300 to 500 SF of total building floor area.

The soils in the vicinity of the GA Building on the north side of the Capitol Campus are not appropriate for spread footing foundations. This was mentioned in the 2016 Pre-design Report for the Office of the Secretary of State Library/Archives study of the GA Building site. That report indicated a possible foundation support on compacted aggregate pier (CAP) ground improvement soils similar to the foundation support system that was used under the Helen Sommers Building adjacent to the GA Building site. The reason we are not recommending the CAP system for the cost estimate is due to the highly likely potential for uncontrolled fill soils in the area that may not work well with this method of soil improvement. We are also concerned about the potential that tieback anchors from the shoring wall, west of the building, extend below the building. These tiebacks could interfere with the placement of the CAP installation.

This recommendation is based on predesign reports for various projects from 1992 to 2016. We do not have geotechnical investigation or recommendations from any of those projects to review so we are relying on commentary from other structural summaries. Geotechnical recommendations and seismic hazard mapping have changed dramatically over the years and current investigation is recommended.

WEST SHORING WALL STRENGTHENING AND REPAIR

The GA Building site is on the northwest of the main state capitol campus and is very close to a steep slope. The slope has had slides in the past and a retaining wall was constructed in 1988 to protect the slope. Settlements behind the retaining wall have plagued the parking area adjacent to the GA Building and are thought to be caused by lack of compaction of the backfill materials during the construction of the wall.

Commentary in the various reports written about the slope and retaining wall indicate that in the early 1900s fill materials were dumped in a ravine in the area of the GA Building and nearby Greenhouse. These fill soils contained building materials and other organics that had settled and caused voids over the years. The Greenhouse has had significant settlement and is considered to be too damaged to be repaired.

It is not known whether the earlier slides occurred only in the manmade fill soils or due to ground water in the steep slope. The shoring wall was constructed of steel soldier piles with multiple rows of tie backs and pressure-treated wood lagging.

Golder Engineers prepared an extensive investigation of the shoring wall in 2010. This investigation located deteriorated lagging and voids behind the wall. The report recommended replacement of lagging, filling the voids behind the wall with well-draining material, and a program of on-going monitoring of the wall. These recommended repairs were not performed. The report did not address or investigate the conditions of the soldier piles and tiebacks, but they did recommend monitoring movement of the wall that would indicate deterioration of these main systems.

The cost estimate carries a full upgrade to the shoring wall to the west. This upgrade is an investigation of the soldier piles and tiebacks with an estimate of 25% replacement. It also includes installation of a drainage system on the wood lagging and a shotcrete wall face on the entire wall. New pile foundations will be added at the base of the new shotcrete wall to carry the added weight. The wall is estimated to be 230 feet long and roughly 34 feet high.

OPPORTUNITY SITE 6: VISITOR CENTER LOCATION

STRUCTURE

A four-story office building on this site could be constructed of structural steel, concrete, or mass timber materials. The selection of structural system will be controlled by the design considerations mentioned above, the configuration of the building and the height limits on the site. Description of the possible systems is the same as Opportunity Site 1.

FOUNDATIONS

The soils conditions on the Visitor Center site are unknown at this time. There are several locations on campus that have poor soils and the buildings are supported on pile foundations or ground improvement systems like the Helen Sommers Building. Ground improvement such as compacted aggregate piers below spread footings are assumed for the cost estimate.

OPPORTUNITY SITE 7: OLD IBM LOCATION

STRUCTURE

A four-story office building on this site could be constructed of structural steel, concrete, or mass timber materials. The selection of structural system will be controlled by the design considerations mentioned above, the configuration of the building and the height limits on the site. Description of the possible systems is the same as Opportunity Site 1.

FOUNDATIONS

The soils conditions on the old IBM site are expected to be poor. Both adjacent buildings, the 14th Street Garage and the Employment Security Department Building, are on pile foundations. Construction documents for the Employment Security Department Building indicate clay soils for at least 30 feet deep and it is assumed that the compressibility of the clay led to the decision to use piles under the building. Ground water was noted as 20 to 30 feet deep.

Deep pile foundations or ground improvement systems are expected for the ICOB on this site. Compacted aggregate piers have been assumed for the cost estimate.

OPPORTUNITY SITE 12: PRO ARTS LOCATION

STRUCTURE

A four-story office building on this site could be constructed of structural steel, concrete, or mass timber materials. The selection of structural system will be controlled by the design considerations mentioned above, the configuration of the building and the height limits on the site. Description of the possible systems is the same as Opportunity Site 1.

FOUNDATIONS

The soils conditions on the Pro Arts site are unknown at this time. There are several locations on campus that have poor soils and the buildings are supported on pile foundations or ground improvement systems like the Helen Sommers Building two blocks to the west. Ground improvement such as compacted aggregate piers below spread footings are assumed for the cost estimate.

Ground topography on this site will create a need for retaining walls to accommodate the difference in ground level from one side of the building to the other. The grade slopes approximately one story in height, requiring a concrete basement wall on the north side

PRELIMINARY MEP NARRATIVE

Insurance Commissioner Office Building

Phase 1 Predesign MEP Technical Report

January 10, 2020

pae-engineers.com

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Project Directory

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1.0 Project Description

1.1 Executive Summary

There are currently four sites being considered for the new Insurance Commissioner Office Building (ICOB). Additionally, there is an alternate to include a building for the Department of Children, Youth and Families (DCYF) on the same site. The options all need to consider how to achieve net zero energy (NZE) based on the Executive Order 18-01. The Department of Enterprise Services (DES) has stated that they will exclude the efficiency of the current central plant for the net zero calculations (but include the efficiency of the new planned central plant). In this way the inefficiencies of the existing plant can be excluded from the design (current steam plant operates at 34% efficiency). DES is exploring improving the performance of the central plant at a future date.

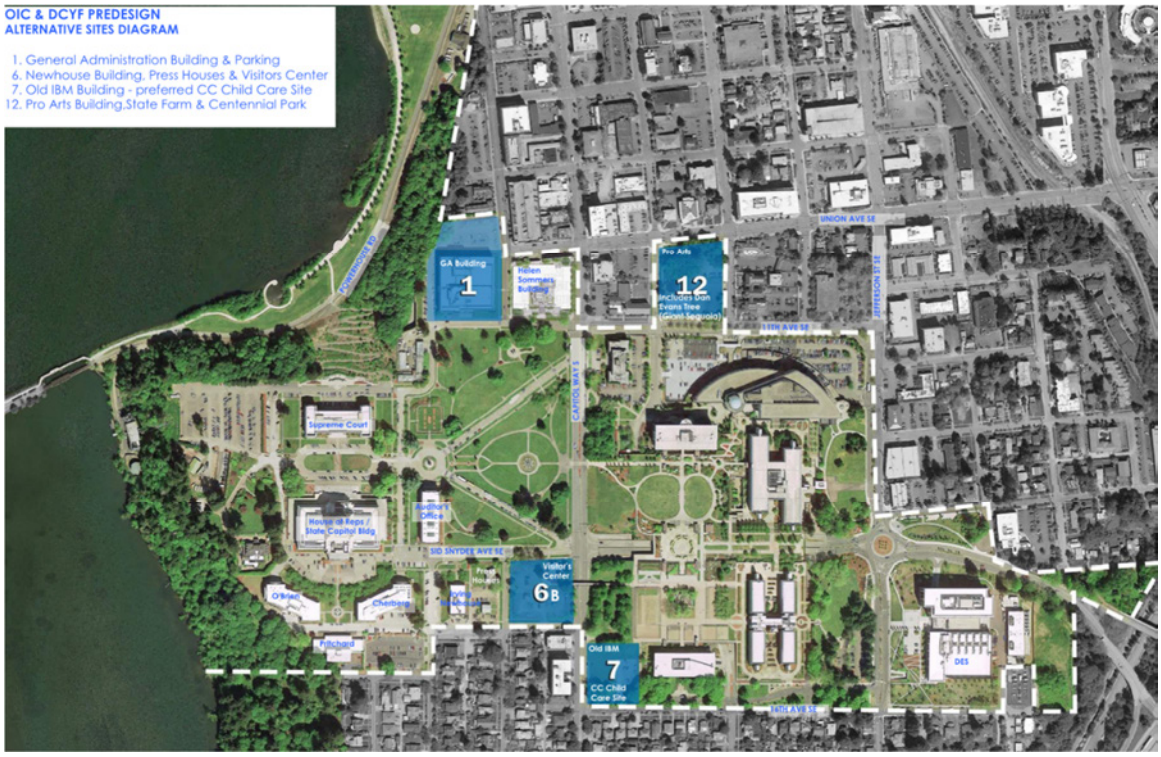

Figure 1: Predesign Alternative Sites

1.2 General Building Description

There are currently four options being considered for the ICOB. Option 1 is also considered with an alternative for the DCYF building to be included on the same site. All the options consider construction of a new building with varying amounts of surface level parking and off-site parking. The project sites all have access to the Capitol Campus utilities including electricity, steam and chilled water.

The project currently includes the following options:

OPPORTUNITY SITE 1 – OPTION A, ICOB ONLY

1. 1 Building – 63,250 gsf
2. 170 surface lot parking stalls

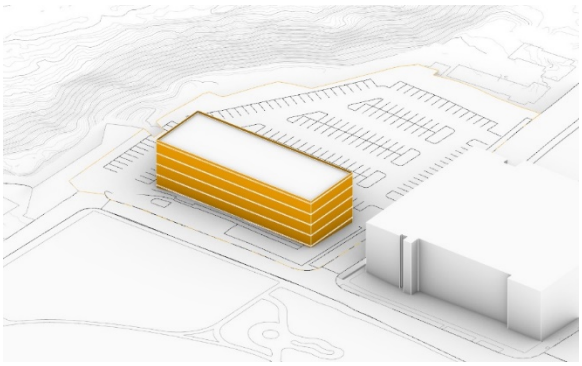

Figure 2: Opportunity Site 1 - Option A, ICOB Only

OPPORTUNITY SITE 1 – OPTION B, ICOB AND DCYF

1. 2 Buildings – 63,250 gsf (ICOB) and 195,500 gsf (DCYF)
2. 70 surface lot parking stalls
3. 567 off-site parking stalls

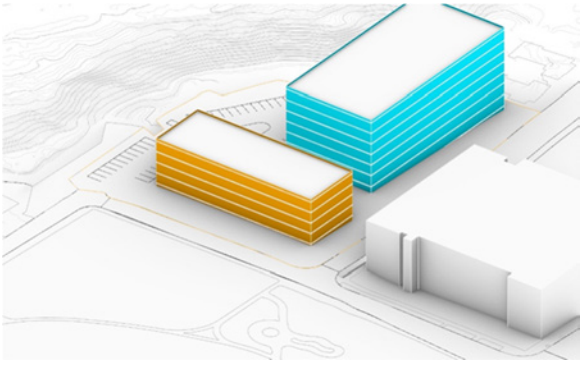

Figure 3: Opportunity Site 1 - Option B, ICOB and DCYF

OPPORTUNITY SITE 12 – OPTION A, ICOB ONLY

1. 1 Building – 63,250 gsf
2. 50 surface lot parking stalls
3. 107 off-site parking stalls

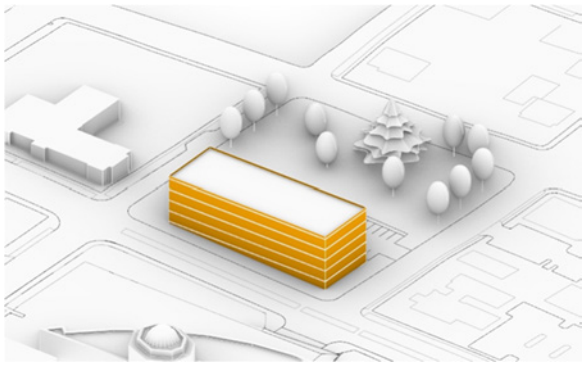

Figure 4: Opportunity Site 12 - Option A, ICOB Only

OPPORTUNITY SITE 6 (EAST BLOCK) - OPTION A, ICOB ONLY

1. 1 Building – 63,250 gsf
2. 65 surface lot parking stalls
3. 92 off-site parking stalls

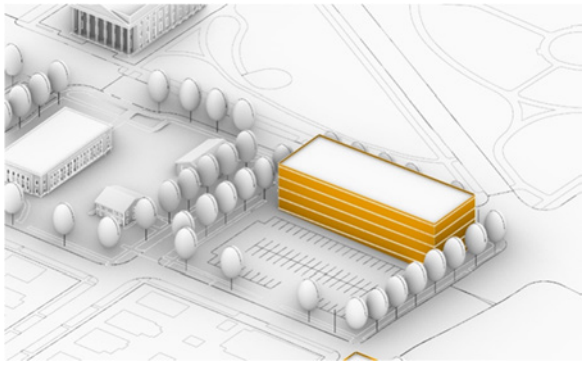

Figure 5: Opportunity Site 6 (East Block) - Option A, ICOB Only

OPPORTUNITY SITE 7 - OPTION A, ICOB ONLY

1. 1 Building – 63,250 gsf
2. 25 surface lot parking stalls
3. 132 off-site parking stalls

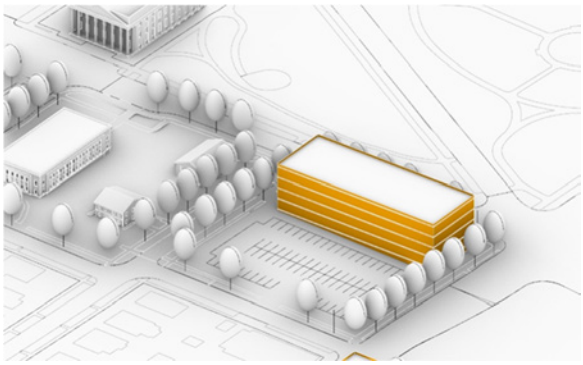

Figure 6: Opportunity Site 7 - Option A, ICOB Only

1.3 Sustainability Goals

The building will be designed to meet the minimum requirements for a USGBC LEED Silver certification. A platinum certification will be evaluated as the design progresses to see if it can be achieved within the project budget.

The project must also meet the Executive Order 18-01 which states:

"New Facility Construction: For a growing number of facilities, the cost of constructing a zero energy or zero energy-capable building is now comparable to that of a conventional building, promising decades of reduced energy costs. Therefore, Directors shall ensure that all newly constructed state-owned (including lease-purchase) 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."

To achieve the NZE goal, it is recommended that office buildings such as ICOB and DCYF achieve an annual limit Energy Use Intensity (EUI) of 35 kBtu/ft^2/year or less.

WHAT IS SUSTAINABILITY?

Sustainable design is often referred to as green design or high performance. Traditionally, decisions are made based on the economic bottom line approach, which is generally only concerned with short term cash flows. A sustainable approach looks at the triple bottom line – economy, ecology, and equity. Decisions are made with concern for the balance between profitability, preserving our natural systems, and benefiting the needs of society.

THE PATH TOWARDS SUSTAINABILITY

There are 6 main steps to take in designing and maintaining a sustainable building.

— Set aggressive project goals.
— Understand the local micro-climate.
— Reduce energy and water use.
— Design highly efficient mechanical and electrical systems.
— Utilize on-site renewable energy sources.
— Commission the building and meter everything.

WATER BUDGET

A highly sustainable building would use no more water than the amount of rainfall that falls on its roof annually. All rainwater that falls on the site would be used or retained on the site. Finally, all wastewater generated in the building would be treated on the site.

Olympia, Washington, receives approximately 50 inches of rainfall annually. By reclaiming this rainwater and designing building and landscape water systems to reduce consumption as much as possible, we hope to live within this natural water budget.

For current economic reasons, we don't anticipate being able to treat the wastewater on-site.

The proposed Water Use Intensity (WUI) for the building is: 6 gallons/ft^2/year.

ENERGY BUDGET

Sustainable design requires a careful analysis of the building's energy use and the source of that energy. Ideally, a sustainable building would produce its own power without generating any pollution or purchase its power from a renewable source (i.e. fish friendly hydro, bird friendly wind, photovoltaics, etc.). In addition, it would use no fossil fuels.

A highly sustainable building would use no more energy than the amount present on the site, which may include solar, wind, geothermal, tidal, etc. The solar energy that hits the roof of our building is the most directly harvested renewable energy source. Current photovoltaic technology allows only approximately 15 percent of total solar energy to be harnessed for use in this building.

Designing a building that uses significantly less energy will require focusing on many elements; envelope, lighting, mechanical and electrical equipment, and equipment used by the occupants. By implementing some of the systems described in this narrative, the energy consumption can be reduced by 20-50 percent compared with a baseline code building.

The proposed Energy Use Intensity (EUI) for the building is: 35 kBtu/ft^2/year.

The following table shows the proposed renewable energy systems for the potential ICOB and DCYF building footprints:

Table 1: ICOB Building

Gross Area (ft^2)	63300
Roof Area (ft^2)	15750
Estimated EUI Target (kBtu/ft^2)	35.0
Estimated PV Size (kW)	144
PV Generation EUI (kBtu/ft^2)	8.0

Table 2: DCYF Building

Gross Area (ft^2)	195000
Roof Area (ft^2)	27900
Estimated EUI Target (kBtu/ft^2)	35.0
Estimated PV Size (kW)	256
PV Generation EUI (kBtu/ft^2)	3.5

Rooftop PV systems can be optimized during design by eliminating the need for clearance between rows. This can be achieved by sloping the roof slightly (5-10 degree) to allow for the panels to lay flat on the surface.

Figure 7: Rooftop Solar with Minimal Spacing

Solar PV panels can also be provided as canopies for surface parking. In addition to generating energy, these canopy systems can provide shading for vehicles and shield pedestrians from rain. For the purposes of this analysis, PAE evaluated solar canopies with single row structural supports installed only over parking spaces, leaving thoroughfares and entryways exposed.

Figure 8: Single Structural Row Solar Canopies

Table 3: Parking Lot PV Capacity

Site Options	1A	1B	12	6	7
Parking Gross Area (ft^2)	66000	35000	17000	26000	13000
Parking Spaces	170	70	50	65	25
Estimated PV Size (kW)	318	131	94	122	47

Total PV capacity at each site is listed below. Note that all the currently considered options would need additional offsite renewable energy production capacity to achieve NZE at an EUI of 35 kBtu/ft^2/year due to the density of floors compared to the available roof area. The additional offsite energy capacity would need to be sourced in a way the DES has deemed acceptable towards meeting the intent of NZE for Executive Order 18-01.

The need for additional offsite renewable energy capacity could be reduced by targeting a more aggressive energy efficiency target. As the Helen Sommers building demonstrates, it is possible to target an EUI of 25-30 kBtu/ft^2/year with a newly constructed building on the Capitol Campus. The MEP system options described in this report support high performance building design goals.

Table 4: Capacity Requirements for Net Zero

Site	Option	OIC Rooftop (kW)	DCYF Rooftop (kW)	Parking Canopies (kW)	Additional Capacity Need for Net Zero @ 35 EUI (kW)	Total System Size @ 35 EUI (kW)
1	A	144	-	318	378	840
1	B	144	256	131	3996	4271
12	A	144	-	94	602	840
6	A	144	-	122	574	840
7	A	144	-	47	649	840

*Capacity requirements for Net Zero include deration factors to account for shading and other anticipated solar obstructions.

1.4 Codes and Standards

Include all applicable codes, guidelines, regulations and other references that will be put into practice.

- 2015 International Building Code with Washington State Amendments
- 2015 International Mechanical Code with Washington State Amendments
- 2015 Uniform Plumbing Code with Washington State Amendments
- 2015 International Fuel Gas Code with Washington State Amendments
- 2017 National Electrical Code with Washington State Amendments
- 2015 International Fire Code with Washington State Amendments
- 2015 Washington State Energy Code
- ASHRAE Standard 62.1-2013 – Ventilation
- ASHRAE Standard 55-2013 – Thermal Comfort
- ASHRAE Standard 90.1-2013 – Energy Standard for Buildings except Low-Rise Residential Buildings
- ASHRAE Standard 135-2012 – BACnet, A Data Communication Protocol for Building Automation and Control Networks
- AMCA – Standard 99 (Air Movement and Control Association International, Inc.)
- NEBB – TAB Standards
- SMACNA – Fire and Smoke Damper Installation Guide.
- SMACNA – Guidelines for Seismic Restraints of Mechanical Systems.
- SMACNA – Standards for Duct Construction.
- NFPA - National Fire Protection Association.
- NFPA 13 – Standard for the Installation of Sprinkler Systems.
- NFPA 90A – Air Conditioning and Ventilating Systems.
- NFPA 101 – Life Safety Code.
- ADA or Uniform Federal Accessibility Standards.
- UL – Underwriters Laboratories.
- EPA – Environmental Protection Agency.
- OSHA Part 1910.1450 – General Environmental Controls

2.0 Mechanical Systems

2.1 Scope of HVAC Systems

The following outlines the electrical systems for the ICOB options and DCYF alternate.

HVAC SYSTEMS

When looking at mechanical system options there can be myriad variations as shown in the diagram below. The key to help narrow the options is to establish clear, measurable goals early for the project.

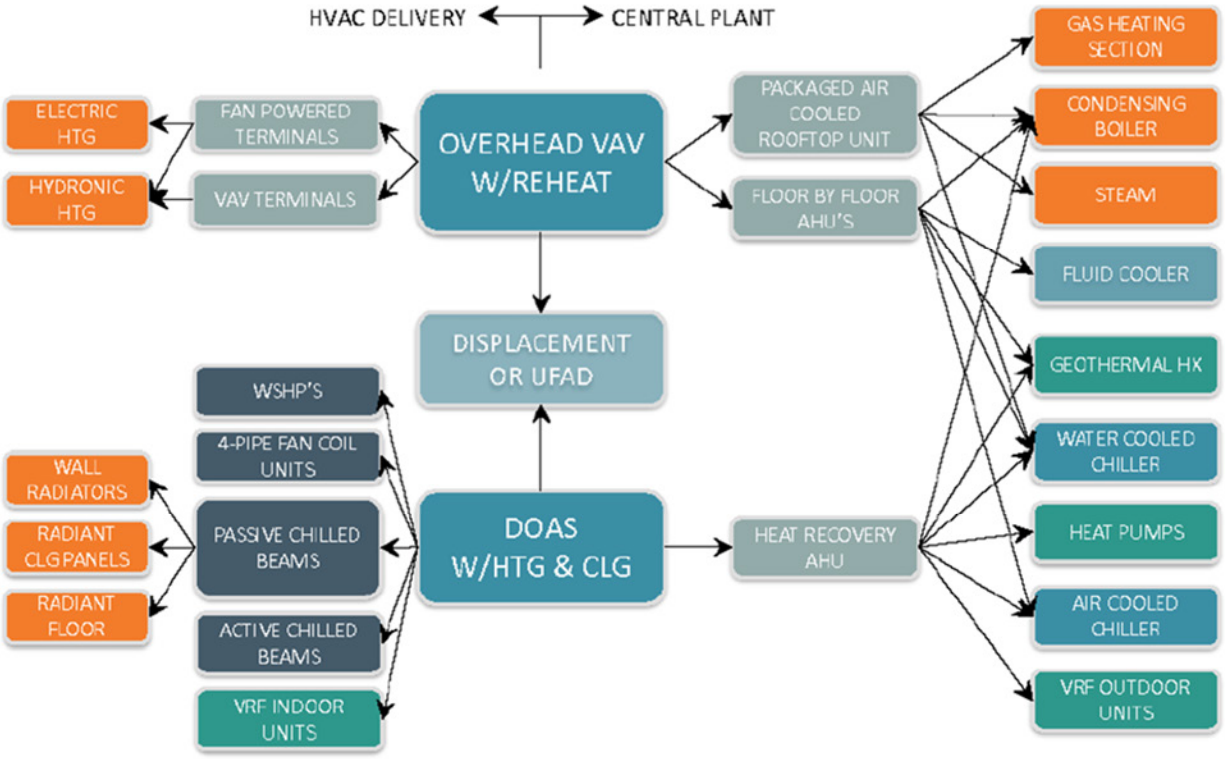

Figure 9: HVAC System Variations

During the predesign phase the key is to identify a system or systems that can meet the goals of the project and provide reasonable pricing to be moved forward for funding. The following options show pathways forward including using campus steam and chilled water while also exploring on-site heating and cooling equipment.

2.2 Heating, Ventilating and Air Conditioning (HVAC)

It is anticipated all normally occupied interior portions of the building will be heated to between 68 to 70°F, cooled to 74 to 76°F, and provided with ventilation to prevent buildup of CO2 and control odors. All spaces with adequate ventilation capability via operable windows will have extended upper limit cooling setpoints. No active humidity control is included.

CAMPUS SYSTEM CONNECTION

The proposed sites have the following campus utilities available nearby:

— Campus cooling water (CCW)
— Campus Steam

The team will need to confirm any other existing campus utilities that serve the sites.

Utilities run from the campus power plant underground and pass near or below the sites. Multiple access "nodes'' are in the vicinity. The design shall identify the appropriate node at which to locate campus connections based on available capacity, physical space to make connections, and length of utility branch routing.

AIR HANDLING UNIT - DEDICATED OUTSIDE AIR SYSTEM (DOAS)

Ventilation would be provided by a dedicated outside air system (DOAS). A DOAS system offers a number of benefits in that it will help meet and exceed the Washington State Energy Code (WSEC) requirements while also helping to ensure excellent air quality in the building.

Each DOAS AHU will be provided with the following components along with the standard access sections:

— Outside air damper
— MERV 8 pre-filter
— MERV 13 final filter
— Heat recovery coil
— Heating coil
— Cooling coil
— Fan array (assume 6 fans with one redundant)

The AHU's will modulate airflow as required to maintain the duct static pressure setpoint and will provide outside air make-up.

Custom heat recovery air handling units (HRU's) will be located inside the mechanical room on the roof. Each will have the following components along with the standard access sections:

— MERV 10 filter
— Heat recovery coil
— Outside air damper

Ductwork, where used, for environmental systems will be galvanized steel. Medium pressure duct mains for VAV HVAC systems with terminal control devices will be double walled galvanized steel (solid outer duct, perforated liner, with fiberglass insulation in between). Other ductwork requiring insulation (inside the building) will be wrapped. Fiberglass duct liner will be used in limited quantities for sound attenuation and combination sound attenuation/thermal performance where appropriate. Flexible ductwork will be limited to short runs (six feet, or less) for final connections at diffusers and grilles. Diffusers and grilles, where used, will be selected with consideration for required space NC levels as directed by the acoustical consultant.

DISTRIBUTION BY SPACE TYPE

Meeting Rooms – Each will be provided with a variable air volume (VAV) terminal, which will be controlled to maintain a CO2 level setpoint 700 PPM above the outdoor condition. The VAV terminal boxes will include hydronic reheat coils to help maintain the space temperature setpoint. Supplemental heating and cooling will be provided by chilled sails or other radiant technology with local zone control valve and thermostat.

For rooms with operable windows, window indicator lights (amber and green) will advise when outdoor conditions are optimal, and the HVAC system will shut down for those areas.

Offices - Each group of offices will be provided with a constant volume (CV) air terminal, which will be controlled to maintain a specified airflow at all times. The CV terminal boxes will include hydronic reheat coils to help maintain the space temperature setpoint. Supplemental heating and cooling will be provided by radiant units with local zone control valve and thermostat.

For rooms with operable windows, window indicator lights (amber and green) will advise when outdoor conditions are optimal, and the HVAC system will shut down for those areas.

Toilet rooms, Janitor’s closets, and other areas requiring 100% exhaust – These spaces will be provided with constant volume exhaust air dampers. The system will be sized to provide 10 air changes per hour in the toilet rooms and janitor’s closets and will be balanced to maintain a slight negative pressure in these spaces relative to the rest of the building for odor control.

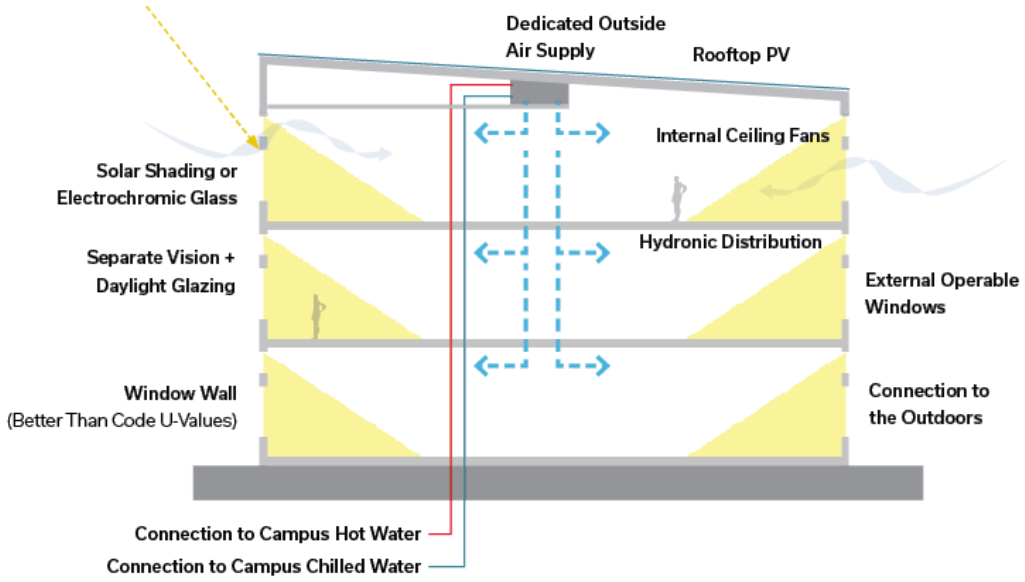

Figure 10: Mechanical Design Concept with Central Plant Connections

Campus Steam (Future Hot Water) and Chilled Water

Steam will be utilized from the Campus Distribution system as the heat source for this building. The steam and condensate pipes will connect to the mains in the service tunnel adjacent to the site. The steam heat exchangers and pumps will be sized to serve the entire heating loads for the building. Steam heat exchangers will be located in the building.

The steam connection, condensate pump and condensate return pipe will be provided including condensate return piping routed to the campus return. Drip legs and steam traps to be provided at intervals dictated by the final steam routing strategy.

The project will be designed to accommodate a future heat exchanger for campus hot water (which is planned to replace the steam). The planned system is an onsite natural gas boiler that would operate around an 85% efficiency (per the 6/29/2017 District Energy Renewal Project). Utilizing a central plant with heat pump technology would greatly improve the campus efficiency and help the project achieve net zero energy.

The campus facilities team has indicated this building will be fed (at least initially) by the Campus Central Plant. The Campus Chilled Water (CCW) system is not available at all times of the year since the chillers are de-activated in the winter and portions of the shoulder seasons and the plant only circulates water through the system. The campus chiller plant is operational (April through October) but it is not operational from November through March. Localized cooling for IT closets or other annual high load spaces will be provided with split systems.

STAND ALONE BUILDING OPTION 1:

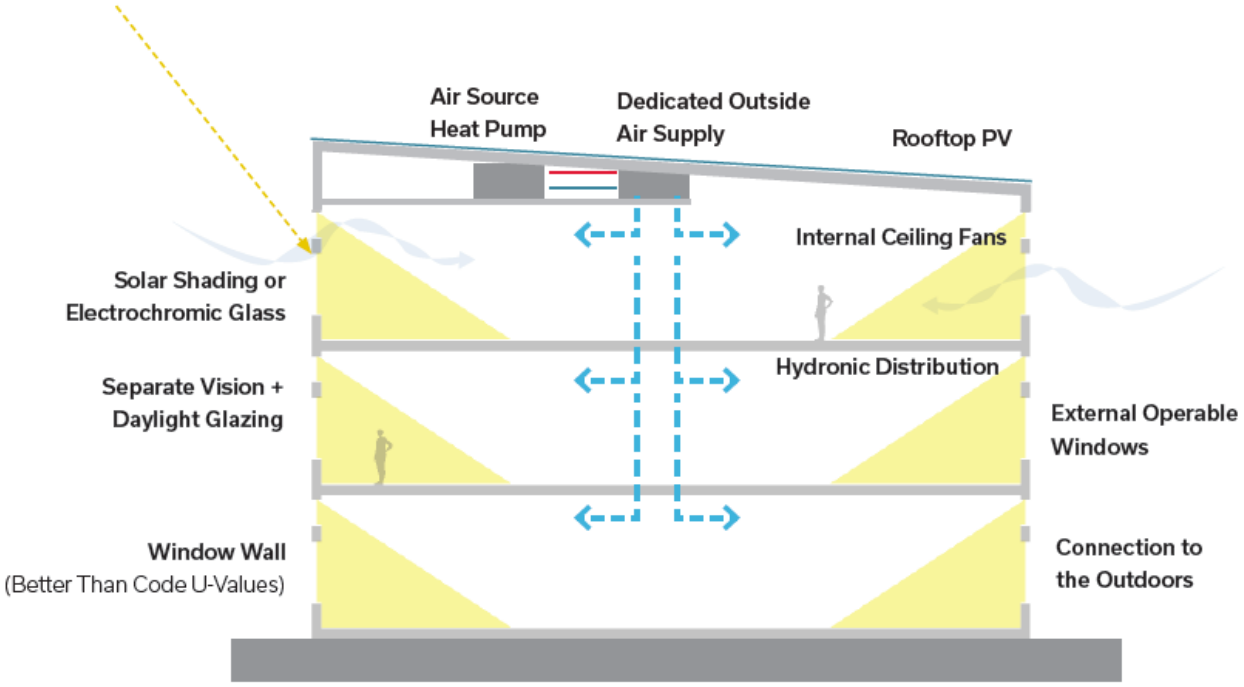

Figure 11: Stand Alone Building Option 1

Air Source Heat Pumps with Hydronic Distribution

There are a number of central plant options for the project and the main drivers on design direction are the first costs, the project's performance goals, the WSEC, long-term planning for a campus condenser water loop, refrigerant management and greenhouse gas reductions. PAE recommends the project consider using centralized heat pump technologies to provide the majority of heating and cooling for the building with hydronic distribution. Heat pumps with hydronic distribution offer many advantages including eliminating the need for burning fossil fuels on-site and the need for large quantities of refrigerants with high global warming potentials. Peak loads could then be met with campus steam and chilled water to optimize the design to both reduce first cost and improve annual energy performance and reduce annual operating greenhouse gas emissions.

AIR SOURCE HEAT PUMP

Modular Air Source Heat Pumps (ASHP) offer an excellent solution to reduce energy use and greenhouse gas emissions. They distribute heating and cooling with hydronic piping that can be used with many different equipment in zones to meet loads. They can also facilitate net zero energy performance when including the efficiency of how heating and cooling is generated.

HEAT GENERATION

The primary heating hot water source for the building will be a modular air source heat pump (assume Airstack by Multistack model VME060, or equal). One module will be redundant. The heat pumps will first transfer energy from the chilled water loop to the heating water loop whenever possible. Only when there is an imbalance will the units use the air as a heat source or sink.

Campus steam will be available onsite and will pass through a heat exchanger to generate hot water in the building. The steam will only be used for peak conditions with the majority of annual operating hours being met by the air source heat pump.

Heating water will be distributed throughout the building using four end-suction pumps and controlled by VFD's. The heating water loop will be set up as a primary water flow arrangement with the pumps controlled to maintain minimum flow through the modular heat pump sections and a by-pass valve controlled to maintain a specific pressure setpoint in the heating hot water loop.

The system will be designed for low temperature heating with a supply temperature of 110°F and a return of 90°F.

Distribution piping for heating and chilled water will be either schedule 40 black steel, Type L copper or PEXa (bid option to achieve best pricing). Hydronic pipe insulation will be fiberglass with vapor barrier jacket. PVC jacketing will be provided where pipe insulation is subject to damage or the elements.

BUILDING COOLING

Chilled water will be provided by the modular air source heat pump and will be circulated to the cooling coils (42 degrees F supply / 54 degrees F return) in building air handling equipment and other terminal devices via end-suction chilled water pumps. Peak conditions will be met with the campus chilled water loop which will be available on site.

Separate distribution loops will also be provided, and controlled to deliver higher supply water temperature, to serve the radiant cooling systems (i.e. chilled sails) throughout the building. Each loop will have an in-line zone pump (ZP) with 4 open/closed valves and a three-way mixing valve.

HYDRONIC ZONE DELIVERY

The decisions on hydronic zone delivery should be made during the future design process. There are many options on how to meet loads in spaces with hydronic heating and cooling including radiant floors, active chilled beams, fan coil units, passive chilled beams, radiant panels, radiators and more. This choice will need to be made based on the project budget and design strategies that are implemented.

MECHANICAL PENTHOUSE

The building should include pricing for a rooftop penthouse to protect equipment from weathering and allow for easier maintenance access. The penthouse would be similar to other buildings on campus with weather enclosures for rooftop mechanical equipment.

HVAC INSTRUMENTATION AND CONTROLS

A direct digital control (DDC) system is planned for the mechanical systems in this building. The system will be based on the architecture and capabilities associated with the allowed control systems on the Capitol Campus. The system will utilize electric actuators throughout, thus eliminating the need for a control air compressor and distribution system. Standard control algorithms will be used to a large extent but will be supplemented with custom programming. Advanced control strategies are anticipated including unoccupied during occupied hours set-back, CO2 monitoring and ventilation air reset, supply water temperature reset, variable flow reset, etc. The system will connect to occupancy sensors, where provided for lighting control, for use in determining occupancy-based system resets.

TESTING, ADJUSTING AND BALANCING

Full dry-side and wet-side testing, adjusting, and balancing will be provided for this project in accordance with NEBB Standards and Procedures.

OTHER SPECIAL HVAC SYSTEMS AND EQUIPMENT

Seismic bracing and anchorage will be required for the mechanical systems (equipment, piping, ductwork) in compliance with current Code (non-critical facility designation).

STAND ALONE BUILDING OPTION 2:

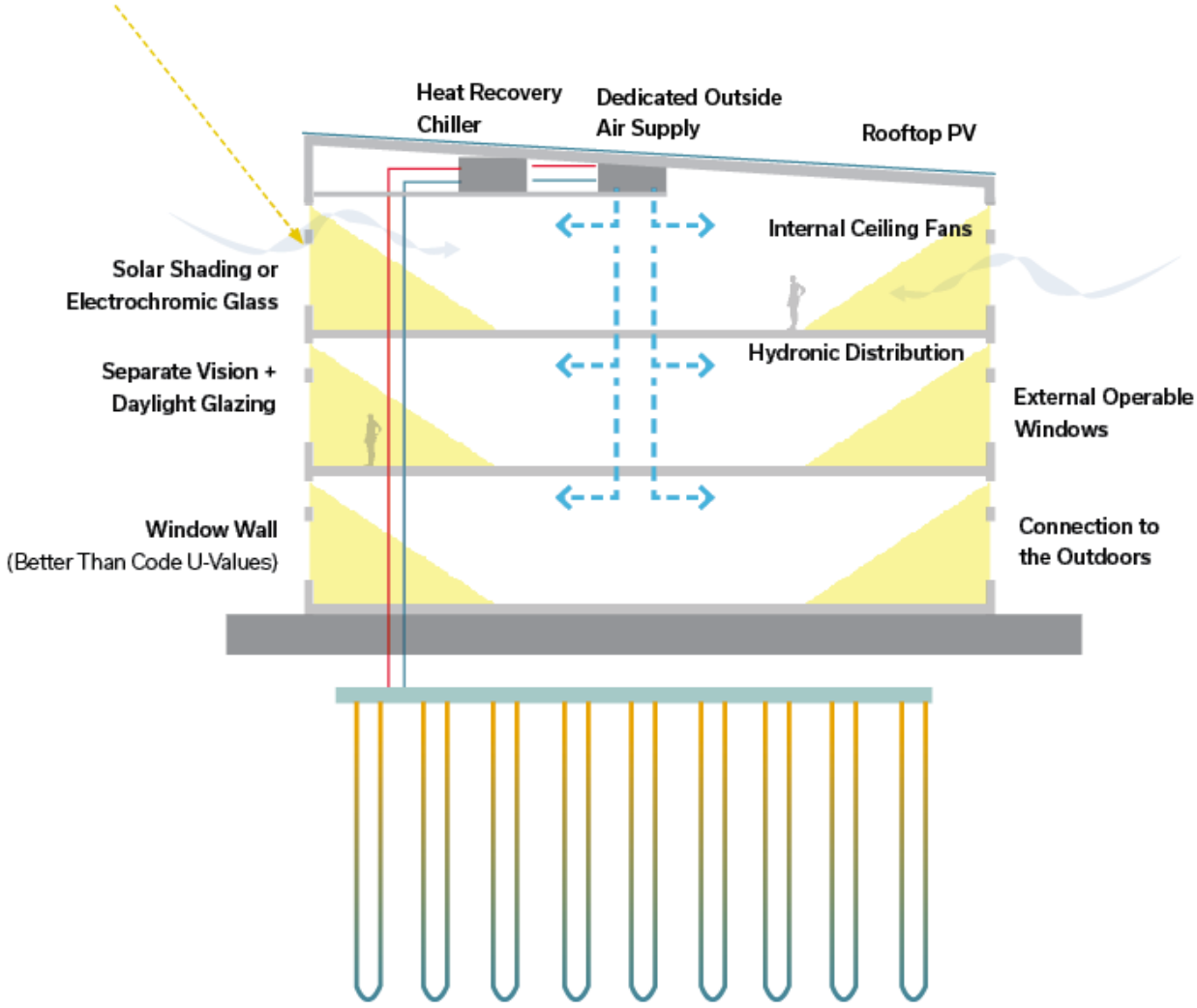

Figure 12: Stand Alone Building Option 2

GROUND LOOP HEAT EXCHANGER ALTERNATE

Another heat pump option would be to utilize a groundloop heat exchanger. A modular heat recovery chiller could provide the chilled water and heating water serving zone level hydronic equipment. If the project has large amounts of excavation a slinky groundloop system could be implemented along the perimeter of the below grade walls and floors. This would still require the campus water loop to be connected to meet the peak conditions.

The first costs are higher for vertical bore ground loop systems due to the cost of drilling vertical bores. They do offer the advantage of higher efficiencies, lower space requirements and less acoustical noise (as compared to the ASHP option). They could be explored in the landscape outside of the building footprint.

HYDRONIC ZONE DELIVERY

The decisions on hydronic zone delivery should be made during the future design process. There are many options on how to meet loads in spaces with hydronic heating and cooling including radiant floors, active chilled beams, fan coil units, passive chilled beams, radiant panels, radiators and more. This choice will need to be made based on the project budget and design strategies that are implemented.

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The building should include pricing for a rooftop penthouse to protect equipment from weathering and allow for easier maintenance access. The penthouse would be similar to other buildings on campus with weather enclosures for rooftop mechanical equipment.

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A direct digital control (DDC) system is planned for the mechanical systems in this building. The system will be based on the architecture and capabilities associated with the allowed control systems on the Capitol Campus. The system will utilize electric actuators throughout, thus eliminating the need for a control air compressor and distribution system. Standard control algorithms will be used to a large extent but will be supplemented with custom programming. Advanced control strategies are anticipated including unoccupied during occupied hours set-back, CO2 monitoring and ventilation air reset, supply water temperature reset, variable flow reset, etc. The system will connect to occupancy sensors, where provided for lighting control, for use in determining occupancy-based system resets.

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Full dry-side and wet-side testing, adjusting, and balancing will be provided for this project in accordance with NEBB Standards and Procedures.

OTHER SPECIAL HVAC SYSTEMS AND EQUIPMENT

Seismic bracing and anchorage will be required for the mechanical systems (equipment, piping, ductwork) in compliance with current Code (non-critical facility designation).

3.0 Plumbing Systems

3.1 Design Criteria

PLUMBING FIXTURES

Commercial grade fixtures will be provided where indicated on the architectural drawings. Refer to table below for representative flow rates for each type of fixture.

Low flow, water-conserving devices, faucets, flush valves and fixtures shall be implemented to meet the project's LEED and sustainability goals for water use reduction.

- Water closets shall be wall mounted vitreous china with sensor operated low-flow flush valves (1.28 gpf).
- Urinals shall be wall mounted vitreous china, sensor operated pint flush valves (0.125 gpf).
- Wall mounted lavatories and counter mounted lavatories shall be vitreous china with 0.35 gpm sensor operated faucets. Lavatory traps and supplies shall be insulated per accessibility requirements.
- Sinks shall be stainless steel, with single lever faucets of cast brass construction. Janitor's sinks will be floor-mounted terrazzo with wall faucet and lever handles. Handicapped accessibility will be provided for throughout in accordance with the requirements of the Americans with Disabilities Act.
- Showers shall be low flow (1.25 gpm).

DOMESTIC WATER DISTRIBUTION

Plumbing systems selections are based on reliable and efficient operation and with emphasis on sustainability. Domestic water piping shall be Type L copper with full port ball valves for control and isolation. Storm, vent, and sanitary waste piping shall be cast iron no-hub providing quiet and long service life.

Reverse Pressure Backflow Assemblies shall be provided for the system. A new cold water supply shall be sized for the anticipated peak demand of both phases of the new facility. The main entry point for water service will be in a mechanical room. A distribution header will be established there with zone isolation valves and a main building valve.

A steam to water semi-instantaneous heater sized for 100% of total hot water demand will be provided to produce hot water at 130°F with an initial operating set point of 120°F.

Hot water will be maintained via a circulation pump and distribution loop. A recirculating domestic hot water loop and hot water circulation pump will be provided. The water will be distributed at 120°F to the fixtures. A thermal expansion tank will be provided to minimize pressure buildup when the system is not being used.

PIPE INSULATION

All hot water and hot water recirculation piping shall be insulated per the Washington State Energy Code. Insulate all water piping in unheated spaces to code minimum and heat tape where subject to freezing temperatures. All pipe insulation shall be continuous through piping supports with no thermal bridging at supporting locations. Hot and cold water piping shall not touch.

SANITARY WASTE

A gravity sanitary drainage system will be provided to serve all plumbing fixtures and equipment.

Materials:

— Drain, Waste, Vent Piping (above grade): Cast Iron
— Waste Piping (below grade): PVC, ABS, or Cast Iron

RAIN WATER DRAINAGE

Gravity primary and overflow storm drainage shall be primarily via interior rain leaders, routed down through the building, connecting to site collection piping just outside the building footprint on the perimeter of the building. Overflow drains will terminate at grade level on splash blocks. Basement areas shall be protected with dewatering systems at the foundation perimeter. Dewatering systems shall be piped to duplex gray water pumps located in the basement areas which shall be discharged to the site storm drainage system.

Materials:

— Storm Drain Piping (above grade): Cast Iron
— Storm Drain Piping (below grade): PVC, ABS, Cast Iron

RAINWATER CAPTURE & REUSE

Rainwater from the roof of the buildings shall be collected, filtered through vortex filters and directed to cisterns. Captured rainwater shall be used for irrigation and for toilet flushing. The mechanical space for the rainwater systems include a pumping and pressurization system. These shall include a multi-stage pump, pressure tank, controls, automatic backwash filter, carbon filter, dye injection and make-up water with RPBP backflow prevention.

ZONE VALVES

Each plumbing system serving project spaces will be isolated by zone valves, to facilitate service and maintenance.

Seismic bracing and anchorage will be required for the plumbing systems (equipment, piping) in compliance with current Code (non-critical facility designation).

FIRE PROTECTION SYSTEMS

Sprinklers

Full coverage using a wet-type fire sprinkler system is anticipated for the interior areas of this building. Minor exterior overhangs at covered entry / egress ways will be provided coverage through the use of dry legs off of the wet system. The Fire department connection will be located outside the building collapse zone. The riser will be located in a mechanical room. Most areas will receive standard coverage, quick-response sprinkler heads.

Standpipes

With the currently planned floor-to-floor heights, standpipes are required in exit stairwells.

Fire Protection Specialties

Not Applicable.

4.0 Electrical

4.1 Electrical Service and Distribution

ELECTRICAL SYSTEMS

The following outlines the electrical systems for the ICOB options and DCYF alternate.

DESIGN CRITERIA

Load Densities - Lighting and Power Systems

The following load allowances will be provided for the project:

Table 5: Lighting and Power Load Densities

Area	Lighting Systems (VA/SF)	Power Systems (VA/SF)
Offices	0.7	7 – 10
Circulation/Transition	0.5 – 0.6	1.0
Lobby	1.0	1.5
Service Areas	0.5	0.5
Stairs	0.5	0.5
Restrooms	0.7	1.0
Storage	0.7	0.5
Surface Parking	0.25	0
Mechanical/Electrical Areas	0.5	0.5

NEW BUILDING SERVICE

The building(s) will be served from the campus medium voltage loop operating at 12.47 kV. Each building option will require one or two medium voltage transformers to derive the 480/277V power required for serving building loads. The transformers will either be dry type unit substation style or pad-mount oil-filled units.

While no redundancy of electrical infrastructure within the building is required, each building will receive two separate 12.47kV feeders from the campus loop. The switchgear will provide a single 12.47kV feed to the new building transformer. If Site 1 – Option B is chosen, two medium voltage transformers and two pieces of main distribution switchgear may be required to serve the DCYF building.

Table 6: Program Options

Program Option	Building Area (GSF)	Service Size Estimate (kVA)
Opportunity Site 1 – Option A		
ICOB	63,250	1,250
On site parking	66,000	
Opportunity Site 1 – Option B		
ICOB	63,250	1,250
DCYF	195,500	3,500
On site parking	35,000	
Opportunity Site 12 – Option A		
ICOB	63,250	1,250
On site parking	17,000	
Opportunity Site 6 – Option A		
ICOB	63,250	1,250
On site parking	26,000	
Opportunity Site 7 – Option A		
ICOB	63,250	1,250
On site parking	13,000	

Distribution

The distribution voltage of 480Y/277V will be used to feed lighting and mechanical loads. A secondary voltage of 208Y/120V will be derived using energy efficient dry type transformers providing a level of isolation from other loads and deriving a new grounded neutral point.

State of Washington buildings typically require all feeders to be run in conduit. As an alternate, PAE recommends MC feeder cable be utilized for feeders from main switchboards to distribution panelboards, and from distribution panelboards to lighting and appliance panelboards.

State of Washington buildings typically require all feeders to be composed of copper conductors. As an alternate, PAE recommends aluminum conductors for feeders 100A and larger.

Washington State Energy Code requires metering of individual energy sources and end-use metering of process loads, including HVAC and water heating. Power metering may also be performed at either a panel level or branch circuit level, depending on owner preference and sustainability and energy goals. The goal of such granular metering will be to understand user- or space-specific power usage in order to isolate and reduce any "vampire" loads.

Emergency Power

Emergency, Legally Required Standby, and Optional Standby power will be provided by a diesel engine-generator set. Separate transfer switches will be provided for emergency, legally required, and optional standby loads. Onsite fuel storage will provide for 24-hour power source operation. Emergency loads will be those designated as life safety meeting the criteria of NEC 700. Legally Required Standby loads will be designated as required by NEC 701, and may include elevators, stairwell pressurization, and other selected loads. Optional Standby loads will include IT loads (MDF, IDFs, and provider MPOE), cooling for IT loads, security equipment, selected food storage refrigeration, and other loads as directed by the owner.

Emergency generators shall be provided with an additional transfer switch with camlock connections for connection of a temporary emergency power source per NEC 700.3(F).

Branch Circuit Wiring

Branch circuit wiring will be copper conductors in EMT raceway. Branch circuit neutrals will be oversized on shared circuits with high harmonic loads. Ground fault circuit interrupter receptacles will be provided in toilet rooms, at sinks, roof, outdoor and wet locations.

As an alternate, PAE recommends MC cable be utilized for branch circuits.

Equipment Connections

Electrical power connections will be made to all mechanical and plumbing equipment, to include providing all electrically associated devices such as disconnect switches, contactors, magnetic or manual starters, lock-out switches, etc., not furnished under Division 23. VFD's will be furnished under Division 23 and installed under Division 26.

Electrical power connections will be made to support miscellaneous equipment. Connections include disconnect safety switches and wiring to support interlocks to remote devices.

Renewable Power System

The project has a goal to achieve net zero energy. In order to achieve this on-site power generation is needed with photovoltaic (PV) panels. Most scenarios will require site solar PV arrays in addition to rooftop PV. Refer to Section 1.3 above for details.

If the state decides not to pursue net zero energy the roof will need to be designed to accommodate a future PV panel array, conduit pathway for interconnection needs to be installed, and space for inverters needs to be reserved. Building switchgear will also require provisions for a back-fed PV circuit breaker with associated shunt trip relay and metering.

Power Quality

Quality of power supply is affected by noise sources within a facility as well as outside (utility transferred). The power distribution systems are not currently programmed to include centralized power conditioning regulation to address utility voltage sags, dips, and surges. Rather, local power conditioning equipment (e.g. UPS) will be provided where requested by the owner for protection of sensitive equipment.

Grounding

Two grounding criteria will be addressed: safety and performance. A safe grounded power system will be provided in compliance with the National Electrical Code. This ground system consists of the building service ground (multiple ground rods, ufer ground, and bonding to the water service and structural steel) and ground bus bars placed throughout building electrical rooms. The safe grounding system will be extended throughout all electrical systems in the facilities. All metallic systems will be grounded to the building grounding system.

Performance grounding includes a system of grounding conductors and busses to be used for IDF/MDF rooms and Data Center (if applicable). Separate isolated ground conductors will be provided for branch circuits with sensitive loads. The performance ground system will tie into the code-required safety grounding system at the main distribution panel ground bus in each building.

Surge Protection

Surge Protective Devices (SPDs) will be provided at the service entrances and at Emergency panelboards per the National Electrical Code.

4.2 Lighting

BACK OF HOUSE (BOH) LIGHTING DESIGN CRITERIA

Table 7: Lighting Design Criteria

Area	Source	Light Level Ambient (avg FC)	Light Level Emergency (avg FC*)
BOH Circulation/Transition	LED	15 – 25	1.0
Surface Parking	LED	5 – 10	0
Loading Dock	LED	10 – 20	1.0
Restrooms	LED	30 – 40	1.0
Storage	LED	15 – 25	NA
Mech/Elec Areas	LED	35 – 45	1.0

(* Emergency Lighting: Emergency lighting system and panel capacity will be designed based on 0.25 VA/SF of gross space)

LIGHTING CONTROLS

All lighting controls will meet the requirements of the 2015 Washington State Energy Code, section C405. A networked, wireless lighting control system is recommended for energy efficiency, ease of use, and low first cost. Control of lighting will be provided by the following methods for the respective tasks/areas:

Table 8: Lighting control Methods by Area

Task/Area	Control Method
Building Exterior	Time Clock & Photocell
Site	Time Clock & Photocell
Corridor	Corridor Occupancy Sensor or Time Clock
Offices	Vacancy Sensor (with manual override)
M/E/IT Spaces	Toggle switch for on/off control only
Restrooms	Occupancy Sensor (with manual override)
Loading Dock	Occupancy Sensor
Surface Parking	Time Clock & Photocell
Building Interior – Perimeter	Photo Cell – Daylight Dimming

4.3 Signal Systems

FIRE ALARM

The Fire Alarm system for each building will consist of a supervised addressable hard-wired system. It is recommended the riser be Class A, with device/horizontal circuits as Class B. The main fire alarm panel and equipment will be located at the main electrical room of each building.

Table 9: Fire Alarm Device Coverage

Device	Coverage
Manual pull stations	One pull station, located adjacent to the main fire alarm panel at the FCC
Smoke Detectors	Air handlers (>2,000CFM), Elevators lobbies, Elevator machine rooms, Elevator hoistways, fire smoke dampers.
Fire Sprinkler	Tamper and Flow
Annunciation	Remote Annunciation at entry(ies).
Building Annunciation	Speaker and Strobe annunciation throughout the facility.
System output	Relay interface for mechanical system shut down and elevator recall.
Monitoring	Central Station Monitoring

SMOKE CONTROL

The project will include active smoke control at a minimum for any atrium spaces. There are two main methods for controlling the associated equipment:

— Fire Alarm System
  - Fire alarm systems typically have the UL/UUKL required listings to act as controls for smoke exhaust systems.
  - Close coordination between trades is essential in the successful implementation of this method.

— Building Automation System (BAS)
  - Standard BAS systems do not have the required UL/UUKL listing for smoke control applications. Adding/upgrading the BAS to have these listings can have higher costs than using the Fire Alarm System.

CLOCK SYSTEM

A hard-wired clock system is not programmed for the buildings. PAE recommends using radio corrected or WiFi analog clocks permitting time setting and ease of relocation.

PRELIMINARY CIVIL NARRATIVE

PRELIMINARY

Reid Middleton
728 134th Street SW - Suite 200
Everett, WA 98204
Ph: (425) 741-3800
Fax: (425) 741-3900

Client: Mithun Sheet 1 of

Project: Capitol Campus Design by: DCY

OIC & CDYF Pre-Design Date: 12/27/2019

Utility Narratives – Site 1 Checked by: DCY

Project No. 212019.020

The following is the civil utilities section to be included in the overall report.

EXISTING SITE AND UTILITY CONDITIONS – SITE 1, GA BUILDING

Existing Site Condition and Topo

Site 1 is located at the northwest corner of the Capitol Campus. It is bordered by Columbia Street on the east and 11th Avenue on the south. It is adjacent to a bluff on the west and to a property not owned by State on the north. The site slopes gently from south to north. The old General Administration Building (GA Building) is located at the southeast portion of the site and occupies approximately 50% of the total site area. The rest of the site is paved with asphalt and used for parking.

Water System

The City of Olympia is the water provider for the Capitol Campus. The State owns and operates the water systems in the West Capitol Campus. Because this site is located along the West Capitol Campus north boundary, the existing GA Building is not connected to the state-owned water system but directly serviced by a city water main under Columbia Street.

Water service is available for this site. A 10-inch diameter water main runs along 11th Ave from Capitol Way to Water Street into the West Capitol Campus. This 10-inch water main connects to a 10-inch city water main in Capitol Way on one end and to the West Capitol Campus system on the other end. Another 6-inch diameter water main runs along Columbia Street from 11th Ave to Union Avenue and continues to 10th Avenue and further north. This 6-inch water main connects to the city water system grid on Union Avenue. There is an existing master water meter at the intersection of 11th Avenue and Columbia Street for the Capitol campus water system. The water system west of Columbia Street is owned by the State.

Water services for the GA building domestic use and fire sprinkler system are from the 6-inch city water main in Columbia Street. There are three existing fire hydrants in the vicinity of the GA Building including two along 11th Ave and another on Columbia Street. A flow test conducted in September 2012 indicated that the static pressure at the fire hydrant on the west end of 11th Avenue was 72 psi. Estimated flow rate at 20 psi residual was approximately 1,880 GPM.

Sanitary Sewer System

Sanitary sewer service to the project site is provided by the City of Olympia. The sewer main system inside the West Capitol Campus is owned and operated by Washington State.

Sewer service is available at the building site. An existing 8-inch diameter sewer main runs north along the west side of the GA Building and adjacent parking lot before turning east and connecting with another 8-inch diameter sewer main that runs along Columbia Street. The 8-inch diameter sewer main in Columbia Street is owned by the city. This sewer main runs north from Union Ave. The existing building is serviced by an existing 6-inch side sewer located along the east side of the building. The side sewer connects to the city sewer main in Columbia Street at the intersection of Union Avenue and Columbia Street.

Stormwater System

Stormwater systems inside the West Capitol Campus are owned and operated by Washington State. Storm runoff from the studied sites drains either to one of the dedicated stormwater systems that discharge directly to the Capitol Lake or to a combined sewer system that connects to the city sewer main on Capitol Way.

An 8-inch diameter concrete storm pipe system runs north along the west side of the GA Building and adjacent parking lot before turning east and connecting with a 10-inch diameter concrete storm main in Columbia Street. This 10-inch storm main is owned by the city and conveys stormwater north along Columbia Street. Storm runoff from the building roof and the parking lots is collected and conveyed by the underground pipe system and discharged to the public storm main in Columbia Street as described above.

When the Helen Sommers Building was built, a storm main system running down the steep slope was constructed. This storm main system begins at the intersection of Columbia Street and Union Avenue. An 18-inch pine runs west from this intersection, through the GA Building parking lot, to a vault outside the northwest corner of the GA Building. From this vault the storm system splits into three 12-inch mains that connect to another vault at the toe of the steep slope. From there the system outfalls to the Capitol Lake through some 24-inch pipe runs and a 36-inch culvert.

There are no detention or water quality facilities on the site.

Natural Gas System

The nearest natural gas main is located at the intersection of Columbia Street and Union Avenue. The existing GA Building is served by this gas main through a 1-inch connection.

PROPOSED DEVELOPMENTS

Earthwork and Site Improvements

This site slopes gently from south to north. Mass grading is not likely. Some minor regrading for ADA accessibility improvements can be expected. Street frontage improvements along Columbia Street and 11th Avenue are likely required. Construction activities, new utility connections, and new accesses will likely damage the existing sidewalk to the point that warrants the entire sidewalk replacement. In addition to that, ADA accessibility requirements may require some curb ramp and sidewalk improvements too.

Water System

Water is available for the proposed development. For the new building, a new domestic water service is required. A post indicator valve, a fire department connection, and a backflow preventer will be required for the building fire sprinkler system. We would recommend these new services be connected to the state-owned water main in 11th Avenue if possible.

Depending on the final size and location of the new building, new fire hydrants on 11th Avenue and Columbia Street will likely be required to provide adequate fire protection coverage for the new building. In addition, a new fire hydrant at the northwest portion of the site could be required depending on the new building location and size.

We recommend conducting a fire flow test at the beginning of the design phase to obtain updated flow data.

Sanitary Sewer System

Sewer mains are available on site along west and north boundaries. In addition, there is a public sanitary sewer main in Columbia Street north of Union Avenue. A new side sewer is required to service the new building from one of these sewer mains. However, the sewer main section along the northwest edge of the site is very close to the top of the steep slope. Stability of the slope can affect the serviceability of this section of the sewer main. We recommend the new building service line be connected to the public sewer main in Columbia Street directly.

Stormwater System

The project will trigger stormwater management requirements because of its size. Storm runoff from the new building and surrounding pavement surfaces can be collected and conveyed by catch basins and underground pipes to the storm main system constructed with the Hellen Sommers Building project. This storm main system is located north of the existing building and runs down the steep hillside to Capitol Lake. The storm main system has been designed to accommodate the GA Building site. Detention is not required because stormwater will flow to a flow control exempt waterbody.

Water quality treatment facilities will be required for treating storm runoff from the pollutant-generating-impervious areas, such as the paved parking lot areas. The Capitol Lake is a phosphorus sensitive lake, and standard bioretention cells are prohibited because the project site is within a quarter mile of the lake. Standard soil mix for bioretention facilities specified by the Washington State Department of Ecology could worsen the phosphorus problem. Because of the adjacent steep hillside and poor infiltrative site soil conditions, infiltration facilities are not recommended for this project. For water quality treatment, emerging technologies like media filtration devices are more suitable for this site. Because the site will drain directly to Capitol Lake, the Low Impact Design requirement is exempt according to the City of Olympia design standards.

Natural Gas System

Natural gas is available at the intersection of Columbia Street and Union Avenue. Natural gas service to the new building can be extended from this intersection.

PRELIMINARY

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Client: Mithun | Sheet 1 of
Project: Capitol Campus | Design by: DCY
OIC & CDYF Pre-Design | Date: 12/30/2019
Utility Narratives – Site 6 | Checked by:
Project No. 212019.020

The following is the civil utilities section to be included in the overall report.

EXISTING SITE AND UTILITY CONDITIONS – SITE 6, VISITOR CENTER

Existing Site Condition and Topo:

The proposed site is located at the city block that is bordered by 15th Avenue SE on the south, Columbia Street on the west, Sid Snyder Way on the north, and Capitol Way on the east. The Visitor Center building occupies the northeast quarter of the site. The rest of the site is an asphalt-paved parking lot.

The site is a few feet higher than the adjacent streets. The raised site is generally flat with steep side slopes coming down to the surrounding streets.

Water System:

The project site is served by the City of Olympia water system. A water main loop is available around the site, consisting a 6-inch cast-iron (CI) main on Columbia Street, a 10-inch ductile-iron DI) main on Sid Snyder Way, a 10-inch CI main on Capitol Way, and a 12-inch DI main on 15th Avenue. These water mains are connected to a large-scale city water grid. The Visitor Center water service is provided through a 2-inch line by the water main on Sid Snyder Way. Because the service line connection is outside the West Campus master meter, this 2-inch service line is metered separately.

Fire hydrants are available at the intersections of Columbia Street and Sid Snyder Way and Columbia Street and 15th Avenue. Other fire hydrants near the site include one on the east side of Capitol Way at the intersection of 15th Avenue and Capitol Way and one by the intersection of Sid Snyder Way and South Diagonal.

A flow test conducted in September 2012 indicated that the static pressure at the fire hydrant on the intersection of Columbia Street and Sid Snyder Way was 58 psi. Estimated flow rate at 20 psi residual was approximately 1,300 GPM.

Sanitary Sewer System:

Sanitary sewer service to the project site is provided by the City of Olympia. An existing 8-inch-diameter public sewer main runs north along Columbia Street. This 8-inch sewer main connects to a 12-inch sewer main on Sid Snyder Way. The 12-inch sewer main conveys sewage east to a

10-inch combined sewer main on Capitol Way, which runs north toward the city center. The sewer mains are combined sewer mains of stormwater and sanitary sewer.

Currently sewer services to the Visitor Center are connected directly to the 10-inch sewer main on Capitol Way. A 6-inch side sewer stub-out on Sid Snyder Way is available for future connection.

Stormwater System:

The project site is located in an area serviced by the city combined stormwater and sanitary sewer system. Combined sewer mains are located on Columbia Street (8" Clay), Sid Snyder Way (12" PVC), and Capitol Way (10" Clay). Storm runoff from the site is collected and conveyed by an underground pipe system out of the site at the northwest corner to a catch basin on Columbia Street. The catch basin connects to an 8-inch combined sewer main on Columbia Street. This 8-inch diameter sewer main runs north and connects to the 12-inch sewer main on Sid Snyder Way. The 12-inch sewer main conveys sewage east to the 10-inch combined sewer main on Capitol Way, which runs north toward the city center.

There are neither detention nor water quality facilities on site.

Natural Gas System:

A 4-inch diameter natural gas main is available on Capitol Way. A small gas service line is also available at the intersection of Columbia Street and 15th Avenue.

PROPOSED DEVELOPMENTS

Earthwork and Site Improvements:

The existing Visitor Center building and parking areas will be demolished and removed. The site will be regraded for easy accesses to the new building and the parking lot. Depending on the final building location and parking lot layout, new driveways on one or two of the adjacent streets will be created.

The project construction activities and new utility connections will likely damage some of the adjacent street sidewalks. Replacement of some sections of the sidewalks is anticipated.

Water System:

New water lines for domestic and building fire sprinkler systems will be required to service the new building. A double-check valve, a post indicator valve, and a fire department connection will be required for the building's fire sprinkler system. These water services can be provided from one of the water mains on the adjacent streets; however, it would be better to avoid new service connections to water mains on Sid Snyder Way and Capitol Way because of traffic

interruption and higher street restoration cost. The 2-inch service line and meter to the existing Visitor Center is relatively new and can be reused if feasible.

Depending on the final building location and layout, a new fire hydrant may be needed for the new development.

It is recommended that a flow test be conducted to determine the available fire flow in the early phase of the project design. The 2012 flow test data is outdated. The water main system on Sid Snyder Way was rebuilt in 2014 and the water main on 15thAvenue was installed in 2018. These water system improvements should have greatly improve the fire flow to the project site.

Sanitary Sewer System:

An 8-inch sewer main is available on Columbia Street SE, and a 6-inch sewer stub-out is available on Sid Snyder Way. Sewer service to the new building can be connected to either or both of these sewer lines. Direct service line connection to the sewer main on Capitol Way is not recommended because of potential traffic interruption to this busy street.

Stormwater System:

The project site is currently serviced by the city combined stormwater and sanitary sewer system. Separation of the storm water and sanitary sewer system within the West Capitol Campus is the State's long-term goal, which is likely the same for the City of Olympia.

Storm runoff from the proposed project site will be collected by an underground drainage system and conveyed to the dedicated storm system of the West Capitol Campus. A culvert crossing under Sid Snyder Way was installed for this purpose when Sid Snyder Way was re-built in 2014. Storm runoff collected from the project site will be conveyed to this culvert. On the north side of Sid Snyder Way, a storm line will be constructed to connect the culvert to the storm main along South Diagonal. From there, through the existing storm system at the campus, storm runoff will be discharged to Capitol Lake.

Although Capitol Lake is a flow control exempt water body, detention is required for this project because the existing dedicated stormwater system at West Capitol Campus has a capacity problem for high storm runoff flow rates. The detention facility will need to detain peak flows beyond the existing system capacity. A detention pipe system or an underground vault may fit this site better than other detention facilities.

Water quality treatment is not required for storm runoff from the building roof since it is considered a non-pollution generating surface (if the roof material is properly selected). Water quality treatment is required for any pollutant-generating impervious areas such as driveways, loading dock, and parking lot.

Because the storm runoff discharges to underground pipes to Capitol Lake, flow control for stream protection is not required (although detention is provided for the existing system capacity reason), the Low Impact Design (LID) requirement is exempted according to the City of Olympia design standards. However, DES encourages LID implementation at the Capitol Campus and LID will help reduce runoff. LID development approaches shall be considered and applied to the project as much as practically allowed.

Natural Gas System:

A natural gas main is available on Capitol Way. And a small service line is also available at the intersection of Columbia Street and 15th Avenue. Gas service to the new building can be provided from the main on Capitol Way or the small line at the Columbia and 15th Avenue intersection if the demand is low.

PRELIMINARY

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Client: Mithun | Sheet 1 of
Project: Capitol Campus | Design by: DCY
OIC & CDYF Pre-Design | Date: 12/30/2019
Utility Narratives – Site 7 | Checked by:
Project No. 212019.020

The following is the civil utilities section to be included in the overall report.

EXISTING SITE AND UTILITY CONDITIONS – SITE 7, IBM SITE

Existing Site Condition and Topo:

The proposed site is located in the East Capitol Campus. The site is adjacent to the Employment Security Building on the east and a parking garage entrance on the north. And it is bordered by Capitol Way on the west and Maple Park Avenue on the south. The site appears flat. A small parking lot occupies the southeast portion of the site. The rest of the site is an open lawn.

Water System:

The project site is served by the City of Olympia water system. 10-inch cast-iron (CI) mains are on both Capitol Way and Maple Park Avenue. These water mains are connected to a large-scale city water grid. A fire hydrant is located at the southwest corner of the site. Another is on Capitol Way, just north of the parking garage entrance.

No fire flow data is available at this point.

Sanitary Sewer System:

Sanitary sewer service to the project site is provided by the City of Olympia. A 12-inch diameter public sewer main runs north along Capitol Way. This is a combined sewer main and the only sewer main near the site.

Stormwater System:

The project site is located in an area serviced by the city combined stormwater and sanitary sewer system. The combined sewer main is located on Capitol Way. There is no drainage facility on site. Runoff from the small parking area appears to drain to the adjacent open lawn in sheet-flow form.

Natural Gas System:

A 4-inch diameter natural gas main is available on Capitol Way. Another gas main, size unknown at this point, is available on Maple Park Avenue.

PROPOSED DEVELOPMENTS

Earthwork and Site Improvements:

The existing parking lot will be demolished and removed. The site will be regraded for easy accesses to the new building and the parking lot. Because the site is relatively flat, the required regrading should be limited.

Depending on the final building location and parking lot layout, new driveways on one or two of the adjacent streets will be created. The project construction activities and new utility connections will likely damage some of the adjacent street sidewalks. Replacement of some sections of the sidewalks is anticipated.

Water System:

New water lines for domestic and building fire sprinkler systems will be required to service the new building. A double-check valve, a post indicator valve, and a fire department connection will be required for the building's fire sprinkler system. These water services can be provided from one of the water mains on the adjacent streets; however, it would be better to avoid new service connections to the water main on Capitol Way because of the potential traffic interruption and high street restoration cost.

Depending on the final building location and layout, a new fire hydrant may be needed for the new development.

It is recommended that a flow test be conducted to determine the available fire flow in the early phase of the project design.

Sanitary Sewer System:

A12-inch sewer main is available on Capitol Way. Way. Sewer service to the new building can be connected to this sewer main. A 6-inch diameter side sewer is typically required for a building of this size.

Stormwater System:

The project site is currently serviced by the city combined stormwater and sanitary sewer system. There is no dedicated stormwater system adjacent to the site. Separation of the storm water from sanitary sewer is not feasible unless extending the storm main on Maple Park Avenue from east of the Employment Security building.

Storm runoff from the proposed project site will be collected by an underground drainage system and conveyed to the combined sewer main on Capitol Way. On-site detention for flow control is necessary because of the limited capacity of the combined sewer system. Water quality treatment is not required because the site drains to the combined sewer system.

DES encourages LID implementation at the Capitol Campus and LID will help reduce runoff. LID development approaches shall be considered and applied to the project as much as practically allowed.

Natural Gas System:

Natural gas mains are available on Capitol Way and Maple Park Avenue. Gas service to the new building can be provided from one of these gas mains.

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Project: Capitol Campus Design by: DCY

OIC & CDYF Pre-Design Date: 12/30/2019

Utility Narratives – Site 12 Checked by:

Project No. 212019.020

The following is the civil utilities section to be included in the overall report.

EXISTING SITE AND UTILITY CONDITIONS – SITE 12, PRO-ART

Existing Site Condition and Topo:

The proposed site is located at the city block that is bordered by 11th Avenue SE on the south, Washington Street SE on the west, Union Avenue SE on the north, and Franklin Street SE on the east. The northern half of the block is Centennial Park. The southern half of the block is occupied by two small buildings and a parking lot. The two buildings are located at the southwest quarter, and the parking lot occupies the southeastern quarter of the block. The developed portion of the site slopes from west to east in general, with the parking lot portion sloping from southwest to northeast.

Water System:

The project site is served by the City of Olympia water system. Around the site, 6-inch water mains are available on Union Avenue SE and 11th Avenue SE. A 2-inch PVC water main on Franklin Street SE connects the two 6-inch mains on Union and 11th Avenues. These water mains are connected to a large-scale city water grid. However, the project site is located on the south edge of a water pressure zone. The 6-inch water main on 11th Avenue SE is a dead-end line to its own water pressure zone.

Water service to the smaller building on site is provided by the 6-inch main on Union Avenue SE through a 1-inch line on Washington Street. Water service to the larger building is provided directly from the 6-inch main on 11th Avenue SE. There is not an existing fire hydrant on the project site. There is a fire hydrant south of the site in the median of 11th Avenue. City records indicate the static water pressure on the site is approximately 60 pounds per square inch (psi). No data of fire flow at 20 psi residual is available at this point.

Sanitary Sewer System:

Sanitary sewer service to the project site is provided by the City of Olympia. An existing 8-inch-diameter public sewer main runs north along Washington Street SE. A 15-inch-diameter sewer main is available on Franklin Street SE. The 8-inch main on Washington Street SE is a combined sewer main of stormwater and sanitary sewer. These sewer mains are clay pipes approximately 7 to 8 feet deep.

The smaller building on site is served by the 8-inch combined sewer main on Washington Street SE. Sanitary sewer service to the larger building is provided by the public sewer main on Franklin Street SE.

Stormwater System:

Public stormwater mains around the site are owned and operated by the City of Olympia. On Washington Street SE, there is an 8-inch combined sewer main of stormwater and sanitary sewer. A dedicated 21-inch storm main system runs north along Franklin Street SE and east along Union Avenue SE. This dedicated storm system eventually discharges to Moxlie Creek located east of the site near Plum Street. Moxlie Creek is a flow control exempt water body according to information provided by the City of Olympia, which means stormwater detention is not required for areas that drain to Moxlie Creek.

Because the project site slopes from Washington Street SE to Franklin Street SE, storm runoff from the ground of the developed part of the project site flows in sheet-flow form to the east and is collected by catch basins along the east edge of the parking lot. The collected water is conveyed through underground pipes to the dedicated stormwater main on Franklin Street SE. It is not clear at this point how storm runoff from the building roofs is collected or to where the runoff is conveyed. There are neither detention nor water quality facilities on site.

Natural Gas System:

Natural gas mains are available on both Washington Street SE and Franklin Street SE. Gas services to both existing buildings on site are connected to the gas main on Washington Street SE.

PROPOSED DEVELOPMENTS

Earthwork and Site Improvements:

Existing buildings and parking areas will be demolished and removed. The site will be regraded for easy accesses to the new building and the parking lot. New driveways on either or both Washington Street SE and Franklin Street SE will be created.

The project construction activities will likely damage the street sidewalks along Washington Street SE, 11th Avenue SE, and Franklin Street SE from 11th Avenue SE to the north construction limit. New driveways and ADA accessibility improvements may require some modifications to the existing sidewalks too. Replacement of these sidewalks is anticipated.

Water System:

The fire flow rate at 20 psi residual is not unknown at this point. Provided that the project site is located at the south edge of a water pressure zone and the 6-inch main on 11th Avenue SE is a

dead-end line to this pressure zone, a new water main on Washington Street SE is likely needed for fire protection, according to the City of Olympia. The new water main will need to be 6 inches in diameter minimum and connect to water mains on 11th Avenue SE and Union Avenue SE to complete a loop. A half-street overlay is required for the water main installation.

New water lines for domestic and building fire sprinkler systems will be required to service the new building. A double-check valve, a post indicator valve, and a fire department connection will be required for the building's fire sprinkler system. These water services can be provided from the existing 6-inch main on 11th Avenues SE or the new water main on Washington Street SE. Two additional fire hydrants will likely be required to provide adequate coverage of the new building.

It is recommended that a flow test be conducted to determine the available fire flow capacity of the existing 6-inch water main on 11th Avenue SE during the design phase. If the flow test results in insufficient capacity for the proposed building, it is recommended that the design team work with the fire department and the City of Olympia to formulate a best solution for the project.

Sanitary Sewer System:

An 8-inch sewer main is available on Washington Street SE, while there is a 15-inch sewer main in Franklin Street SE. Given the size and depth of these sewer mains, the proposed building should have no problem being served by a gravity sewer service. The gravity side sewer can be connected to the sewer main on Franklin Street SE or to Washington Street depending on the plumbing stub-outs number, locations, and depths.

Stormwater System:

Storm runoff from the proposed project site will be collected by an underground drainage system and conveyed to the dedicated storm system within Franklin Street. Detention is not required because the dedicated City stormwater system discharges to Moxlie Creek, a flow control exempt water body. Water quality treatment is not required for storm runoff from the building roof since it is considered a non-pollution generating surface (if the roof material is properly selected). Water quality treatment is required for any pollutant-generating impervious areas such as driveways, loading dock, and parking lot.

Because the stormwater detention requirement is exempted, the Low Impact Design (LID) requirement is also exempted according to the City of Olympia design standards. However, DES encourages LID implementation at the Capitol Campus. LID development approaches shall be considered and applied to the project as much as practically allowed.

Although it is an option if necessary, the City of Olympia suggested the project avoid the 8-inch combined sewer main on Washington Street for stormwater discharges. The city has been trying

to separate storm and sanitary sewers. And DES has been trying to do the same thing at the Capitol Campus.

Natural Gas System:

Natural gas mains are available on both Washington Street SE and Franklin Street SE. Gas service to the new building can be provided from one of these gas mains.