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WASHINGTON STATE PATROL

FORENSICS DIVISION

Facilities Master Plan

Washington State Patrol

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FACILITIES MASTER PLAN

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Washington State Patrol Forensics Division - Facilities Master Plan

1.0 EXECUTIVE SUMMARY

Ensuring the agency, its troopers, and civilian personnel have safe and functional facilities in which to execute their duties is the fifth goal in the 2019-2022 Strategic Plan of the Washington State Patrol. One of the key objectives of this goal is to develop a comprehensive Facilities Plan which can ensure the Forensics Division will have the needed functional space, tools, and supportive environment to be effective and efficient in providing critical investigative and analytic services to the Patrol and its supported Agencies. The development of this Facilities Master Plan (FMP) supports that objective by providing a structure to guide the WSP in the future development of the physical plant to enable the Forensics Division to be one of the leaders in the field of forensic science in the nation.

1.1 Background

The Washington State Patrol Forensics provides quality forensic services for criminal justice agencies within the state of Washington (RCW 43.43.670).

The Crime Lab Division (CLD) quality forensic services for criminal justice agencies within the state of Washington such as:

- DNA Testing
- Combined DNA Index System (CODIS) Laboratory (felon database program)
- Convicted Offender DNA Collection
- Firearm/Toolmark Analysis
- Materials Analysis (Seized Drugs, Explosives & Ignitable Liquids, Impressions, and Trace Materials)
- Questioned Documents
- Latent Fingerprint Identification
- Crime Scene Assistance

The Toxicology Laboratory Division (TLD) performs drug and alcohol testing for coroners, medical examiners, law enforcement agencies, prosecuting attorneys and the State Liquor Cannabis Board in all 39 Washington counties.

1.2 Existing Facilities & Staffing

The CLD operates five multi-service crime laboratories in Seattle, Tacoma, Marysville, Spokane, Vancouver, and limited-service crime laboratories including Kennewick and Tumwater. In addition to the above, to address overcrowding in the Seattle Lab, the TDL is in the process of developing an interim Toxicology lab in leased space in Federal Way which will serve half of the state-wide toxicology caseload.

As of this report, the CLD has a total staffing authorization of 180 personnel and the TDL has a staffing authorization of 40. In addition to personnel directly assigned to CLD, there are 10 WSP personnel from the Technical Services Bureau that provide direct, resident support to the CLD in the Seattle Lab.

1.3 Purpose

The purpose of this FMP is:

1. To define and project the future space and infrastructure needs of Forensics Services Division by providing a framework for decision-making that regards facilities needed to address existing deficiencies in physical facilities and they impact on operations in addition to accommodating change and the long-term facilities needs of the Division.

2. To support the WSP's bi-annual funding request in the state capital budget process.

The state capital budget provides funding for all WSP Facilities to maintain and preserve state-owned facilities, upgrade program spaces to meet the changing agency needs, and to construct new facilities to accommodate growth and operational needs. As part of the state capital budget process, WSP can submit capital requests that support their most critical needs. These requests are divided into categories such as repairs, minor improvements, replacements, renovations, and major new construction. Given the limited capital budget, funding from amongst the pool of applying agencies is highly competitive.

1.4 Planning Goals

The primary goals of the WSP Facilities Department are to support the WSP's Mission and Strategic Plans through the physical improvement and development of its facilities and infrastructure. Specific goals include the following:

- Provide healthy, safe, and functional space for FSD Scientists, technicians, and staff to work.
- WSP mission, vision, values, and goals will drive physical plant/planning decisions.
- Optimize operational and maintenance efficiencies.
- Create a tool for future growth and decision-making, a flexible framework for development of a facilities
- Establish a realistic schedule and capital budgeting plan.

1.5 Objectives

The FMP established a series of physical objectives to be achieved during the duration of this master plan. These fall into the following general areas:

- Inventory and document the condition of the existing facilities occupied by the FSD.
- Identify and inventory the space use of the existing facilities and compare to state/industry standards.
- Identify, prioritize, and site new and renovation projects needed to accommodate functional and space needs.

1.6 Methodology

To meet the goals and objectives for the FMP the WSP Facilities Management Group formed a Planning Committee and engaged Schreiber Starling Whitehead Architects as planning consultants to facilitate the process and document the recommendations.

Successful master planning begins with the team gaining an understanding of the functions and operations performed by the FSD. To accomplish this task, the planning team held a series of planning workshops/meetings with key staff of the CLD and TLD. The purpose of these workshops was to review overall agency and planning goals, identify common perceptions of the existing physical plant and operations, gather and analyze pertinent growth and planning data and projections, review and incorporate the goals and objectives of program/operational areas, and make general observations to develop an understanding of the existing facilities.

Concurrent with the workshops, the planning team conducted on-site tours and visits to all Crime Lab facilities to record existing conditions and identify conditions and factors impacting current operations and those having impact on future development.

To define the scope of growth to be incorporated into this FMP the following strategies were implemented:

- **Need Determination:** The total built area needed was determined through space needs analysis which looked at existing facilities, their current utilization, comparison to national standards and recommendations, and future growth projections. The resulting space needs program identified total square footage deficiencies.
- **Condition Analysis:** The existing FSD facilities and sites were assessed for condition and suitability using standards established by the Justice Department other peer institutions. The purpose of this assessment is to provide a tool for prioritizing need and sequencing of recommended improvement.
- **Site Planning & Building Development:** During the stakeholder workshops the planning team discussed the relationships of the spaces with their associated programs and services. Appropriate locations for growth, and the areas available/required at each location, were determined. A series of new capital construction and renovations projects were identified such that the projects organizationally supported the planning goals.

1.7 Findings

The existing facilities serving the FSD have many facility deficiencies that impact the effectiveness of operations, increase the cost of operation, and do not meet the basic standards for modern forensics laboratories. These include:

- **Inadequate quantity of space**: The available space does not meet the need of the FSD has currently configured and staffed. Space shortages of slightly over 85,800-gsf were calculated as follows:
  - Cheney Lab: *Existing 34,100-gsf | Projected Need 44,260-gsf ..... Shortage: 10,160-gsf*
  - Marysville Lab: *Existing 5,113-gsf | Projected Need 50,846-gsf ..... Shortage: 45,733-gsf*

- Olympia Lab: *Existing 5,080-gsf | Projected Need 7,403-gsf* .....*Shortage: 2,323-gsf*
- Seattle Lab: *Existing 59,375-gsf | Projected Need 75,165-gsf* ..... *Shortage: 15,790-gsf*
- Tacoma Lab: *Existing 7,148-gsf | Projected Need 18,994-gsf* .....*Shortage: 11,796-gsf*
- Vancouver Lab: *Existing 36,560-gsf | Projected Need 36,560-gsf* .....*Shortage: 0-gsf*

- **Deficiencies:** Significant physical deficiencies were noted at most of the current facilities. Examples of building deficiencies noted include:

  Seismic Weakness
  With the exception of Cheney and Vancouver, the basic design of the existing buildings does not appear to meet seismic survivability standards for essential facilities per current code.

  Lack of Administrative Space
  The majority of the existing office areas are crammed and congested and there is no room to accommodate any program or personnel growth. This has been exacerbated by moving office support functions (library, files, storage, copiers, etc.) into the interior circulation spaces of the open offices.

  Insufficient Personnel Support Space
  With staffing greater than originally planned, there is limited space provided for non-work personnel support.

  Insufficient Laboratory Bench Space/Hood Access
  With staffing greater than originally planned, there is a shortage of lab benching and access to fume hoods. Sharing or having to schedule bench space for their caseloads increases risk of cross-contamination and reduces the amount of time available for staff to utilize lab space.

  Insufficient Lab Equipment Space
  With the exception of the Vancouver Lab, the instrument rooms supporting MA and DNA labs are cramped and overcrowded. They have limited capability for increasing equipment in support of staffing/caseload growth.

  Contamination Control
  At many of the labs (Olympia, Tacoma, Marysville) there are no vestibules at entrances to lab spaces.

  Inefficient Customer Service / Caseload Back-up
  Because not every lab does all the same testing, some counties must submit different items to different labs. This creates inefficiencies in the time to process cases and increases the risk of contamination/evidence control.

  Inadequate Storage
  Insufficient storage space is a critical deficiency noted at most of the labs. This includes storage for casefiles as well as evidence and equipment. Most of the storage spaces observed in the labs are either filled to capacity, or nearly so.

- **Location Issues**
  In reviewing current sites/locations several factors were identified that create negative impacts to current operations and are expected to worsen in the future.

Specifically noted were:

Marysville:
- Area allotted is too small
- No room to expand/growth

Olympia:
- Building is too small
- No room to expand/growth
- Lease allows early termination for sale of building. Risk that new landlord could terminate lease leaving personnel and equipment without operational space.

Seattle:
- Location makes it difficult to recruit and retain staff. Bellevue/Seattle has high cost of living and commute to more cost-manageable communities is too difficult

Tacoma:
- Area allotted is too small
- No room to expand/growth

1.8 Alternatives & Recommendations

Do Nothing

In exploring the possible development response to the findings of lack of space, lack of flexibility, significant facility deficiencies, and operational impact from poor location, the team considered the alternative of doing nothing. No action will continue the status quo with negative impact to lab operations, staff recruiting and retention, poor customer service. It would also impact effective customer service based on the inability to increase capacity. Status-Quo would still require inter-lab transfer of evidence increasing the risk of contamination or loss of evidence. It is not recommended.

Phased Development Plan

The FMP proposes to address the identified space shortfall through several projects that include new replacement, renovation, and expansion projects. The sequence proposed for development is generated to work within the capital project funding process established by OFM and assures a logical process that enables continuous operation of the crime labs in existing locations while new buildings/spaces are developed.

Near Term Phase

The proposed project will replace the existing lab that is co-located with the WSP District-7 Headquarters with a new lab that will be designed to include all the forensic services provided by the WSP with the remaining Toxicology Lab in Seattle relocating to the new facility. The location would ideally be an acquired site located along the I-5 corridor between North King County and Skagit County.

The summary of the project is:

New Area:	50,846-gsf

Acquisition/Predesign Cost:	$2,000,000
Funding Source:	2022 Supplemental Budget
Anticipated Project Cost:	$66,889,000
Funding Source:	2023-2025 Capital Budget
Anticipated Completion:	Spring 2026

When completed it will provide Materials Analysis, DNA, Toxicology, Firearms, Latent Prints, Questioned Documents, and Crime Scene Response functions. The existing space in the District HQ would be repurposed for field operations.

Mid Term Phase

In the mid-term phase, space deficiencies at the Cheney lab would be addressed by a renovation/expansion project. This will include renovating the remaining shelled-space and changing the training labs into an operations space supporting the MA lab function. An addition of approximately 3,000-gsf will be provided either by expanding to the southwest or by infilling the existing courtyard between the office wings.

The summary of the project is:

Renovated Area:	2,000-gsf
Expansion Area:	3,000-gsf
Anticipated Project Cost:	$7,000,000
Funding Source:	2027-2029 Capital Budget
Anticipated Completion:	Spring 2029

Far Term Phase

The proposed project will replace the existing Olympia, Tacoma, and Seattle labs with a new lab that will be expanded to include all the forensic services provided by the WSP. As identified in the Space Allocation portion of Section 4 for Seattle, Olympia, and Tacoma, the new lab is proposed to total 95,000-GSF. It is planned to be located on vacant land that the WSP currently owns in the Spring Valley area of Federal Way.

The summary of the project is:

New Area:	95,000-gsf
Predesign Cost:	$750,000
Funding Source:	2028 Supplemental Budget
Anticipated Project Cost:	$123,150,000
Funding Source:	2029-2031 Capital Budget
Anticipated Completion:	Spring 2032

When completed it will provide Materials Analysis, DNA, Toxicology, Firearms, Latent Prints, Questioned Documents, and Crime Scene Response functions. The existing space in the Tacoma facility would be repurposed for field operations. Leased space at Olympia and Seattle would be vacated and the leases not renewed.

1.9 Acknowledgments

The Planning Team wishes to acknowledge the following people for their cooperation, interest, and participation:

FMP Core Committee

Gene Lawrence, Crime Laboratory Division Commander
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Kim Hefton, Tacoma Lab Manager
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Jodi Sass, CODIS Lab Manager

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Section 02 -MISSION & GOALS

Washington State Patrol Forensics Division - Facilities Master Plan

2.0 MISSION & PLANNING GOALS

This document provides a set of guiding principles that clearly articulates the values and needs of the WSP Forensics Laboratory Services Division (FLSD) with respect to facility planning.

2.1 Mission and Values

All components of the WSP FLSB Facilities Master Plan (FLSD-FMP) will support the accomplishment of the WSP mission and core values.

WSP Mission

The Washington State Patrol makes a difference every day, enhancing the safety and security of our state by providing the best in public safety services.

WSP Vision

To be the best public safety agency in the United States.

WSP Values

Every employee is a critical member of a team committed to earning the trust and confidence of the public through:

1. Strong leadership
2. Effective partnerships
3. Professional excellence
4. Acting with integrity and accountability
5. Respecting and protecting individual rights
6. A culture of continuous improvement

WSP Goals

1. Make the WSP a great place to work.
2. Make our highways safe.
3. Provide specialized investigative, forensic, and support services.
4. Secure communities from terrorism, fire, and disaster risk.
5. Sustain and enhance agency infrastructure and business processes.

FLSD Mission

The Forensic Laboratory Services Division (FLSD) of the Washington State Patrol (WSP), with bureau headquarters in Olympia, consists of three divisions: the Crime Laboratory Division, the Toxicology Laboratory Division and the Impaired Driving Section. The Crime Laboratory Division consists of laboratories in Seattle, Spokane, Tacoma, Marysville, Vancouver, Kennewick, and Olympia. All forensic toxicology services for the State of Washington are conducted at the Toxicology Laboratory located in Seattle. The WSP High Tech Crimes Unit has its offices in Olympia.

The Washington State Patrol FLSD is mandated by the Legislature to provide criminal justice agencies within the state the scientific investigative support associated with matters of a criminal nature.

The Washington State Patrol FLSD is responsible for providing scientific support and expert testimonies relating to physical evidence from crimes by:

- Assisting at the scenes of crimes.
- Performing scientific examinations and evaluations of physical evidence in order to provide information relevant to criminal investigations.
- Participating in pretrial consultations and by providing reports, charts, graphs, and other exhibits for court purposes.

- Providing expert testimony in court trials, hearings, and depositions.
- Providing training to the criminal justice community in crime scene investigation, the *r*ole and significance of physical evidence, and the handling, collection, preservation, and packaging of physical evidence

FLSD Vision

To be recognized as an international leader in forensic science in quality, service, and innovation

2.2 Master Plan Goals

To ensure that the proposed FLSD-FMP fully supports and enables achievement of WSP and the Divisions mission, goals and objectives the following overarching principles apply to the FLSD-FMP:

1. The FLSD-FMP will integrate with and complement other visioning plans related to the mission, vision, and values of the State Patrol.
2. The FLSD-FMP will define a professional environment that enables forensic scientists to achieve their service goals and operational excellence.
3. The FLSD-FMP will help create new and renovated facilities that will:
    - Anticipate and fulfill short-term needs while planning for long-term service.
    - Provide maximum flexibility so that FLSD facilities can adapt to the changing needs of modern forensic science while responding to the needs of the public safety agencies they support. Facilities should seek to have a "long life – loose fit."
    - Avoid waste and disruption resulting from piecemeal projects.
    - Be executed according to a realistic schedule and capital budgeting.
    - Provide a healthy, safe, and professional workplace.
    - Accommodate future technology requirements and potential future uses of facilities.

2.3 Sustainability Goals

Environmental concerns, especially climate change, are at the forefront of the global agenda as we better understand the implications of inaction upon our natural, built, and social systems. To ensure the quality of life for future generations, Washington State seeks to demonstrate leadership in environmental stewardship and sustainability.

WSP is one of the specific state agencies identified in Executive Order 18-01 which requires that 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. All proposed new facilities in this plan are proposed to be designed to be zero-energy capable.

WSP is committed to conserving resources and reducing the impact that its services and activities place on the environment. WSP will also comply with Executive Order 05-01 by planning all proposed new construction to achieve Leadership in Energy and Environmental Design® (LEED) certification to Silver level or higher, where practicable.

Section 03 -NEEDS ASSESMENT

Washington State Patrol Forensics Division - Facilities Master Plan

3.0 NEEDS ASSESSMENT

The section defines anticipated development/functional space needs for the WSP Forensics Laboratory Services Division.

3.1 Introduction

Forensic laboratories are unlike most academic or research labs as they typically include several specialty lab-types that accommodate a wide range of sciences rather than a single discipline. The types of lab spaces employed by the WSP in providing forensic services to our state law enforcement community include:

DNA

The Washington State Patrol Biochemistry/DNA section is responsible for the forensic biochemical analyses of body fluids, stains, and cellular material (not associated with bodily fluids) and the DNA typing of biological evidence. This lab function provides for the examination of biological evidence and the development of DNA profiles. Similar to a typical biological sciences laboratory, the WSP DNA labs are equipped with specialized equipment provided for high-throughput analysis that is essential in addressing the backlog of Sexual Assault Kits (SAK's). Anther specialized lab of this type is responsible for assisting in the maintenance of an international DNA database known as Combined DNA Index System (CODIS).

Materials Analysis

The Washington State Patrol Materials Analysis Unit is responsible for the analysis of chemical compounds and mixtures, including, but not limited to, seized drugs, clandestine laboratory evidence, explosives evidence analysis, fire debris samples, general chemical unknowns, and a variety of other types of physical evidence in which chemical and instrumental examinations may be required. This type of lab is similar to a typical chemistry lab; however, it is equipped with specialized instrumentation such as GC/MSs, FTIRs, ICP/MSs, and other computer-driven, diagnostic instrumentation.

Trace Evidence

A specialized type of lab is used for the identification of any substances that cannot be identified in an ordinary chemistry lab. This evidence is small, often microscopic, quantities of material or traces of materials from another person or an environment. These materials may be fragments of either manufactured products or naturally occurring substances. Typical substances may include microscopic particles known as trace evidence and can include, but are not limited to, paints, glass, food products, and building products. This section relies heavily on instrumentation and microscopy, including scanning electron microscopes, FTIR microscopes, and comparison microscopes.

Latent Fingerprints

This lab is equipped to examine and process items of evidence for friction ridge impressions (fingerprints), determine if the impressions are suitable to be designated for comparison, compare unknown impressions to known prints, and search unknown impressions in the available databases.

Firearms
This lab has the responsibility for the examination of any evidence pertaining to firearms, including weapons, bullets, bullet projectiles, and bullet casings. This is primarily a physical properties analysis laboratory but does include some elements of a wet chemistry lab. This section also includes instruments designed to access an international database of bullet components. This type of analysis also requires firing weapons and collection of projectiles and related materials for subsequent investigation; thus, a safe and regulated gun range is typically required.

Questioned Documents
A document is defined as anything printed, written, typed, or reproduced that is relied upon to record or prove facts in an investigation. The role of documents is important in a society of contracts, wills, checks and promissory notes, as well as threat and harassment notes, ransom notes, professional records and counterfeiting. The authenticity of these documents is often a critical issue to the resolution of a dispute or crime. The Washington State Patrol Questioned Document Section uses lab facilities similar to materials analysis to provide a wide variety of services related to documents involved in criminal investigations to their customer agencies.

Crime Scene Response
While not a lab in the traditional sense, the Crime Scene Response function provides expert assistance to local law enforcement specifically in the unique at the scene collecting and processing of forensic evidence. The WSP CSRT can perform bloodstain pattern analysis, crime scene documentation, evidence preservation and collection, latent blood enhancement techniques, alternate light source for bodily fluid detection, crime scene photography, latent print processing, trajectory analysis, and scene reconstruction. Once the crime scene investigation is complete, the WSP Crime Scene Response staff do considerable work on evidence in the lab as well as extensive computer work rendering 3-D images of the crime scenes for reconstruction and documentation for use in court.

Toxicology
This lab is responsible for examination of blood and urine for the presence of drugs, alcohol, or other foreign substances. This section frequently provides laboratory support for medical examiners by examining tissue samples from decedents in order to determine cause of death, and it must be designed to include features of wet chemistry and biological sciences laboratories. Like the chemistry section, the toxicology section uses various types of gas-consuming, heat-generating, noise-producing instrumentation requiring isolation and special design considerations.

Summary
A full-function forensic lab requires a complex and wide-ranging collection of equipment, specialized environments, all under very controlled conditions and in a secure facility. Forensic science, like all scientific fields, is constantly evolving new procedures and technology and the facilities that support this function must be flexible and adaptable to change and growth.

3.2 Background

In 1999 the Forensic Laboratory Services Division (FLSD) was created within WSP. This significant development brought together for the first time the Crime Laboratory Division, the State Toxicology Laboratory Division, and the Impaired Driving Section (IDS - formerly the Implied Consent Section). Together, the bureau's 220 scientists, commissioned officers, and professional staff provide a full range of internationally accredited forensic science services vital to the successful investigation of crime and the maintenance of public safety. For purposes of this plan, only the Crime Laboratory and Toxicology Divisions are included.

Crime Laboratory Division

The Washington State Patrol Crime Laboratory Division (CLD) provides quality forensic services for criminal justice agencies within the state of Washington (RCW 43.43.670).

The CLD operates five multi-service crime laboratories in Seattle, Tacoma, Marysville, Spokane, Vancouver, and limited-service crime laboratories including Kennewick and Tumwater.

The crime lab provides quality forensic services for criminal justice agencies within the state of Washington such as:

- DNA Testing
- Combined DNA Index System (CODIS) Laboratory (felon database program)
- Convicted Offender DNA Collection
- Firearm/Toolmark Analysis
- Materials Analysis (Seized Drugs, Explosives & Ignitable Liquids, Impressions, and Trace Materials)
- Questions Documents
- Latent Fingerprint Identification
- Crime Scene Assistance

Toxicology Laboratory Division

The Toxicology Laboratory Division (TLD) provides evidential toxicology services to law enforcement, medical examiners and coroners, and prosecuting attorneys about suspicious deaths, homicides and suicides, traffic fatalities, driving under the influence of alcohol and drugs, and any other forensic cases where alcohol and/or drugs may be involved.

The Washington State Toxicology Laboratory, established in 1963, performs drug and alcohol testing for coroners, medical examiners, law enforcement agencies, prosecuting attorneys and the State Liquor Cannabis Board in all 39 Washington counties.

The toxicology laboratory receives approximately 16,000 cases per year of which approximately 65 percent are law enforcement DUI cases and 35 percent coroner/medical examiner cases. The laboratory is overseen by the State Toxicologist and has staff consisting of a Laboratory Manager, Quality Assurance Manager, two Forensic Supervisors, Technical Lead, 14 Forensic Toxicologists, and two Property and Evidence Custodians. Toxicologist accession samples in rotation and spend an average of two days a week testifying in court as experts on alcohol and drugs and their effects.

3.3 Service Areas

The CLD currently provide quality forensic services for criminal justice agencies within the state of Washington (RCW 43.43.670) from the following locations:

Service Area	Case Type	Laboratory for Submission
ALL	Questioned Documents	Spokane
ALL	Convicted Offender database samples	CODIS - Seattle
Clark, Cowlitz, Lewis, Pacific, Skamania Wahkiakum	Latent Prints	Olympia
	Chemistry & DNA	Vancouver
	Firearms & Microanalysis	Tacoma
Yakima	DNA	Vancouver
	Chemistry	Kennewick
	Firearms, Latent Prints & Microanalysis	Spokane
Benton, Columbia, Franklin, Klickitat, Walla Walla	Chemistry	Kennewick
	DNA, Firearms, Latent Prints & Microanalysis	Spokane
Kittitas	Latent Prints	Spokane
	Chemistry, DNA, Firearms & Microanalysis	Seattle
Grays Harbor, Mason, Thurston, Pierce	Latent Prints	Olympia
	Chemistry, DNA, Firearms & Microanalysis	Tacoma
Clallam, Island, Jefferson, San Juan, Skagit, Snohomish, Whatcom	Firearms	Seattle
	Latent Prints	Olympia
	Chemistry, DNA & Microanalysis	Marysville
Adams, Asotin, Douglas, Chelan, Ferry, Garfield, Grant, Lincoln, Okanogan, Pend Oreille, Spokane, Stevens, Whitman	Chemistry, DNA, Firearms, Latent Prints & Microanalysis	Spokane
King ,Kitsap	Latent Prints	Olympia
	Chemistry, DNA, Firearms & Microanalysis	Seattle

The TLD currently provides forensic toxicology services for criminal justice agencies within the state of Washington from Seattle. They are in the process of developing an interim lab in Federal Way which will serve half of the state-wide caseload.

3.4 Staffing

Crime Lab:
As of this report, the CLD has a total staffing authorization of 180 personnel. Of this total, four positions are currently funded by non-permanent grants and 11 positions are vacant. The composition and location of staffing distributes as follows:

Functional Area	*Count*	*Location*
Command/Administration	**2**	**Seattle**
Standards & Accountability	**9**	**Seattle**
CODIS Lab	**8**	**Seattle**
Marysville Crime Lab		**Marysville**
Administration	1	
Evidence/Property	2	
DNA	8	
Materials Analysis	5	
Olympia Crime Lab		**Olympia**
Administration	1	
Evidence/Property	2	
Latent Prints	7	
Seattle Crime Lab		**Seattle**
Administration	3	
Evidence/Property	4	
DNA	21	
Materials Analysis	6	
Firearms	5	
Spokane Crime Lab		**Cheney**
Administration	3	
Evidence/Property	4	(1 at Kennewick)
DNA	21	
Materials Analysis	10	(3 at Kennewick)
Firearms	5	
Tacoma Crime Lab		**Puyallup**
Administration	2	
Evidence/Property	2	
DNA	7	
Materials Analysis	5	
Firearms	5	
Vancouver Crime Lab		**Vancouver**
Administration	1	
Evidence/Property	3	
DNA	14	
High-Throughput DNA	8	
Materials Analysis	10	
Firearms	5	

Latent Prints	3	
Questioned Documents	1	
Crime Scene Response		**Varies**
	3	Seattle
	1	Tacoma
	5	Cheney
	1	Vancouver
Subtotal	**180**	

(includes grant-funded and vacant positions)

In addition to personnel directly assigned to CLD, there are several WSP personnel from the Technical Services Bureau that provide direct, resident support to the CLD. These include:

IT	**9**	**Seattle**
Library	**1**	**Seattle**
Subtotal	**10**	
Total	**190**	

Toxicology Lab

Since 2012, the Tox Lab has incurred a 45% increase in casework. In response to this increased caseload, the Tox Lab temporarily increased its scientific/technical personnel through grant funding. The overall increase in FTE's is 11 personnel (36 FTE's in total). While staffing has increased, it was not possible to increase operational space at the Seattle lab. Subsequently, office and scientific personnel within the Tox Lab are now doubled up on usable workspace within the original 10,000-gsf. This is not sustainable from a performance or health perspective. The composition and location of staffing distributes as follows:

Functional Area	*Count*	*Location*
Command/Administration	**1**	**Seattle**
Quality Assurance	**5**	**Seattle**
Tox Lab - South	**34**	**Seattle**
Total	**40**	

(includes grant-funded and vacant positions)

Impacts to Staffing

Cost of Living

Home values in Seattle have increased by 179.65% from 2000 to 2018, a 5.49% annual rate. According to a 2019 report, the median monthly rent for a two-bedroom apartment in Seattle was $1,659, nearly $500 higher than the national median. Coupled with the high cost of food and transportation, most lab staff have to live a considerable distance from the main lab in Seattle.

The resulting increasingly long commute for many employees has been impactful to both the Crime and Tox Lab staffing. The biggest negative impact has been to staff recruitment and retention issues, particularly over the last three years. Most

employees who have left their positions have cited cost-of-living and long commutes, in addition to the increased workload and associated stress, as their main reasons for leaving. While the WSP has been able to fill most of these vacancies, such a high turnover in staff results in a tremendous loss of technical skills and scientific experience.

This impact, coupled with a high cost and long timeframe to train and certify new scientific employees, will continue to negatively impact the Crime and Tox Lab operations if they remain in the downtown Seattle location.

The physical location of other Crime Labs has had less of an impact to recruiting and retaining scientific staff.

3.5 Caseload Projections

General

The CLD and TLD labs play a critical role in Washington State's justice system, analyzing tens of thousands of pieces of evidence from criminal investigations each year. A criminal case may generate more than one type of request to process or analyze evidence. For example, a crime lab may receive fingerprints and DNA evidence from the same case, which require two separate requests for analysis by different sections of the lab.

The April 1, 2020, population estimate by OFM places Washington's population at 7,656,200. This represents an increase of 109,790, or 1.45%, over 2019. The annual growth rate has remained in the 1.2 – 1.7 % since 2014. Despite this modest increase in population, increases in crime levels have decreased or remained stable in most categories and in most counties.

In 2019 the state's violent crime rate was 3.1 incidents per 1,000 or slightly higher than the 2018 rate of 3.0, but still below the national violent crime rate of 3.7. According to the Criminal Justice Data Book, the overall annual number of adult arrests (NIBRS) statewide increased 16% from 2013 to 2019. Over the same period, the reported NIBRS crimes increased 31%. Between 2018 and 2019 this rate decreased 3% and it appears to have further reduced in 2020. Researchers have been unable to point to a determinate cause to this drop in crime, but casual observance indicates that there are numerous factors at play.

Crime Lab

The CLD has experienced the following total case assignments per lab function over the past three years:

DNA	2018	4,347
	2019	4,315
	2020	4,289
MA	2018	12,037
	2019	12,134
	2020	11,085
FA	2018	590
	2019	588

	2020	576
LP	2018	1,966
	2019	1,632
	2020	1,735

This tracks a minor decrease in total cases between 2018 and 2019 and a 6% decrease between 2019 and 2020, which can be generally attributed to the impact of the Covid-19 pandemic.

Backlogs

SAKs

In 2015 the legislature established a mandate for the WSP to reduce the backlog of untested/unsubmitted Sexual Assault Kits (SAKs). This initiative continues to have an impact on caseloads and staffing in the CLD. The patrol has recently added staff and a dedicated high throughput DNA lab in the Vancouver location to meet this legislative mandate. In November of 2020 there were approximately 10,370 untested SAKs, and as of August 2020, the average processing time for a kit was 212 days. With the added high throughput DNA lab in Vancouver, the WSP is committed to meeting the legislative-mandated 45-day turnaround time that takes effect in May 2022**.**

Case Acceptance

The backlog in SAKs also impacts the ability to accept and process other cases. To maintain reasonable turn times and backlogs on other crimes, the CLD has implemented case acceptance policies that exclude certain types of "low level" crimes. This practice does not support the agency's goal to accept any criminal evidence and have the capacity to process it in a reasonable time frame.

Toxicology:

Historically, between 2013 and 2017, the Tox Lab averaged an ~8% increase in caseload on an annual basis. The increase stemmed predominantly from a steady increase in suspected impaired driving case submissions statewide. In 2012, the Toxicology Lab handled 10,900 cases. Also, in 2012, Initiative 502, which legalized the manufacture, processing, sale, and recreational use of marijuana, was approved. Another large contributor to caseload has been the increase in synthetic drugs and opioids, including fentanyl, that must be analyzed.
This has had a large impact on the lab's casework, which increased in 2018 to over 16,000 annual cases. Approximately 65% of the casework are law enforcement DUI cases and 35 are percent coroner/medical examiner cases.

The continued demand for services, coupled with the ability to house only 20 forensic scientists in the current location, has driven the annual caseload per analyst up to 1400, resulting in a backlog of 5,000 cases now and an average turn-around time (TAT) of 180-days. To maintain quality standards, the TLD has implemented a cap on caseload per analyst of no more than 960/yr.

A 5% annual growth in casework is anticipated moving forward, which needs to be met with a parallel increase in staffing.

3.6 Operational Needs

Customer Service

Because not every lab does all the same testing, some counties submit different items to different labs. For example, Yakima County agencies submit DNA requests to Vancouver, chemistry cases to Kennewick, and firearms, latent prints, and trace cases to Spokane.

The ideal goal is to have no agency send firearms to one lab and DNA to another – one-stop shop for all agencies for DNA, Latent Prints, Materials Analysis, and Firearms such that no evidence would need to be transferred from one lab to another.

Adequate Lab Bench Space

In order to accommodate the personnel growth primarily at Seattle, Marysville and Cheney, many of the lab stations are shared between the assigned scientists. Having to resort to sharing lab space by scientists creates issues related to quality and control of evidence. Due to cross-contamination and control of evidence, sharing lab space is not sustainable from a performance or health perspective.

Adequacy of Instrumentation

Both the CLD and TLD need additional instruments to accommodate the extra testing and new, developing tests being performed. The existing instrument space in the Seattle, Marysville, and Olympia labs are at capacity in terms of the number of instruments that can operate efficiently. Oftentimes, one of the instruments is unable to run at all due to air compressor, cooling, or service issues in the current facilities.

Adequate Administrative Space

The 2009 DES Space Allocation Standards Policy establishes an aggregate standard of 215 square feet per person for the allocation of administrative workspace and provides a set of guidelines to be used in determining space needs as well as promoting the functional, equitable, efficient, and flexible use of space.

A typical workstation for a resident scientist should average 64-sf. With adjacent intra-functional circulation and shared areas for files and administration added, a standard for administrative space planning should be approximately 100-asf per resident staff. There are many key functional areas in the lab facilities where this standard is not attained. Of particular note is the Marysville lab were each assigned staff has only 46-asf to accomplish their administrative duties. Other areas that are substantially short on administrative space include the Seattle lab where workstation space varies between 71-asf to 90-asf per resident staff.

Adequate Storage

Insufficient storage space is a critical deficiency noted at most of the labs. This includes storage for casefiles as well as evidence and equipment. Most of the storage spaces observed in the labs are either filled to capacity, or nearly so.

In some evidence storage areas, refrigerators and freezers have been installed in rooms that were not designed to accommodate their added heat or large size. In addition, there is insufficient circulation space around the material stored.

General Lack of Space

One measure of how suitable and effective the available functional area supporting the CLD and TLD forensics laboratory functions at their various locations is to compare the assigned functional area against an accepted national standard. In the "*Forensic Laboratories Handbook for Facility Planning, Design, Construction, and Moving Law Enforcement and Corrections"* published by the DOJ Office of Law Enforcement Standards and the National Institute of Standards and Technology, they indicate that these laboratories should be planned to provide 750 – 1,000 GSF per FTE*. As the following chart indicates, only two of the current facilities meet this recommended standard for current staffing. Of particular note are Kennewick, Marysville, and Tacoma facilities which are 46% below the low end of the recommended standard.

FTE/Area Summary

	Existing GSF/NRSF	Current FTE	Area/FTE
Cheney	34,100	38	897
Kennewick	1,386	4	347
Marysville	5,113	16	320
Olympia	5,086	10	509
Seattle	59,375	110	540
Tacoma	7,148	20	357
Vancouver	36,560	33	1108
Total	148,768	231	644

Note Seattle includes TOX lab + 10 non-departmental support staff

Excerpt from *"Forensic Laboratories: Handbook for Facility Planning, Design, Construction, and Moving"* published by the DOJ Law Enforcement and Corrections Standards and Testing Program:

Table 2-3: Average Space-to-Staff Ratios for Laboratories

Laboratory Category	Staff Size	Total Laboratory Size	Space per Staff Member
Small	Up to 30	Less than 30,0000 GSF	930 to 1,000 GSF per staff member
Medium	30 to 70	30,000 to 60,000 GSF	860 to 930 GSF per staff member
Large	70 to 110	60,000 to 90,000 GSF	790 to 860 GSF per staff member
Very Large	Over 110	More than 90,000 GSF	720 to 790 GSF per staff member

Section 04 -EXISTING CONDITIONS

Washington State Patrol Forensics Division - Facilities Master Plan

4.0 Existing Conditions

4.1 Methodology

This section provides findings on the condition of the existing buildings serving the CLD and TLD. It provides a summary and evaluation of the existing facilities, addressing both exterior and interior features. The buildings' structural, mechanical, and electrical systems were not investigated in detail other than to note their apparent conditions, serviceability, and to note operational impacts, if any. The assessment process included:

- Collection and review of existing documentation including construction documents for the facilities and site documentation. Floor plans of existing buildings were converted from pdf or scans of paper plans using architectural modeling software to provide scalable documents that can be used to calculate existing space utilization.
- Tours of the existing facilities were conducted to allow the planning team to observe and become familiar with the operations and procedures employed by CLD and TLD as well as to observe and document any deficiencies in the facilities which might be in conflict with applicable codes, regulations, safety requirements, or accepted industry standards for similar facilities. Current space utilization was noted on plans for each space.
- Interviews with lab managers and executives were held to obtain as much information as possible regarding operations and procedures employed at each facility. These interviews provided the team with information on any desired operations or procedures that were not being employed due to existing facility constraints. Additionally, resident staff could provide information on projected plans or other operational changes that could impact space needs or utilization.
- Internet research was conducted to help identify the population data and crime trends of the service area and to note peer institution best-practices and/or industry standards. Wherever such information was used, appropriate citations have been included in the report.

Our findings for each facility follow:

4.2 Cheney

Location

The Cheney Crime Lab is located on the campus of Eastern Washington University at 570 West 7th Street, Cheney WA 99004.

Site

The site area totals approximately 4-acres and is leased from the university. It is generally level with a slight slope from south to northeast. There are 45 parking spaces (4-accessible) provided in non-secured lots. A secure parking area to the west of the building provides 10-spaces for fleet vehicles.

There were no issues noted related to the site and it appears to adequately meet the needs of the lab.

Cheney Site

NORTH

Building - General

The existing building was designed in 2003 as a new ground-up crime lab and became operational in 2005. It is a single-story building totaling approximately 34,100-gsf. It is configured in a "U" shape with two wings housing the major lab and associated administration spaces and the bottom of the U housing the general administrative, support, and evidence intake/storage functions. The center part of the U is an open courtyard while the top of the U (north) is bridged by mechanical equipment and a Caswell range trailer. There is a mechanical mezzanine above the bottom of the U.

Configuration

The general configuration of the building with two lab wings separated by a courtyard and a joining center support wing is a serviceable layout which generally accommodates the special needs of the laboratory functions.

- *Security/Zoning*
  Public access is limited to one vestibule, a conference room, and an adjacent classroom and training lab. Supported agencies have a secure vestibule and lobby for evidence transfer and a controlled area for evidence viewing which is isolated from the remainder of the lab. Door access and specialty security systems were noted and generally comply with recommended standards.
- *Adjacencies*
  In general, the relationship of functional areas in the building supports good evidence/workflow.
- *Flexibility*
  Most of the laboratory workstations have fixed casework in a "U" shape with utility connections running horizontally within the casework. This does not allow for flexible reconfiguration should processes change or new ones require additional space. The lab does have an unfinished (shelled) area on the west wing that does allow for flexibility to add lab or administrative space if needed.
- *Contamination Control*
  Bio vestibules are provided at all entrances to lab spaces. The mechanical systems appear to have been designed to provide needed environmental controls. Primary potential source of contamination is the need for scientists to share lab stations.
- *Collaboration/Staff Support*
  The configuration with separate labs and administrative spaces and the lack of "in-between" space does not promote peer-to-peer collaboration. Outside the laboratory, there are very limited communal areas where staff can decompress or that can facilitate those working on different projects to discuss ideas.

Architecture – Exterior Envelope

The exterior walls are faced with GWB on the interior face, are insulated per code, and are faced with a combination of brick veneer, pre-cast concrete panels, and metal wall panels. Windows are a combination of aluminum storefront and curtainwall and doors are hollow metal except for public entrance doors, which are storefront aluminum. There are roll-up steel vehicle doors at the drive-through vehicle evidence bay. Roofs are single-ply thermoplastic membranes over insulated bases secured to the underlying metal deck. There appears to be adequate slope to drain.

There was no observed distress on the exterior envelope systems, which appear to be in good condition and are appropriate to the intended use.

Architecture - Interior Finishes

Most interior walls are metal stud with GWB. Some fire-rated walls and shear wall are concrete masonry. Interior doors are hollow metal frames with wood doors. Interior finishes include sheet vinyl in labs, carpet in offices, and vinyl tile in storage and

support spaces. Exposed concrete is used on storage and utility spaces. Ceilings are exposed structure in the corridors and suspended acoustic tile in most spaces.

There was no observed distress on the interior finish systems, which appear to be in good condition and are appropriate to the intended use.

Structure

The building foundation is traditional spread footings and slab-on-grade. The structural system is steel framing with a combination of non-bearing steel-stud and bearing concrete masonry exterior walls. CMU is also used for interior shear walls. Roofs are steel decking. The mezzanine floor is composite steel/concrete decking. The systems met codes in effect when designed and appear to meet life-safety standards of seismic performance. The structure may provide a higher level of seismic resistance, but this was not confirmed in a review of the documents available to the planning team.

There was no observed distress on the structural system, which appears to be in good condition and is appropriate to the intended use.

HVAC Systems

A detailed analysis of the HVAC system was beyond the scope of this study. Crime laboratory operations require the building mechanical systems to provide a level of safety, flexibility, reliability, and functional features that typical mechanical systems are not able to meet. The age of the systems, their general condition and configuration and the absence of persistent or reoccurring issues with the system indicate their general suitability for their current use and service in the Crime Lab.

Plumbing Systems

The utilities serving the building consist of domestic water service, natural gas medium pressure service, sanitary waste, and fire sprinkler mains. There were no observed deficiencies in these systems, which appear to be in good condition and appropriate to their intended use.

Emergency eye wash and safety showers are installed at all laboratory sections. Hand wash sinks at vestibules and laboratory sinks are suitable for use and seem adequate in number and location.

Laboratory gases for helium, nitrogen, and instrument grade air are piped to the laboratory equipment from localized gas cylinders. An outside-accessible storage room stocks replacement cylinders. Local vacuum pumps are provided where required.

The building has sufficient provisions for toilet rooms.

Electrical Systems

A detailed analysis of the electrical and power systems was beyond the scope of this study. Main panel and transformer rooms appear adequate and in good condition

and the distribution panels serving labs are located outside the controlled environment and have good accessibility.

Distribution of power in the laboratory spaces is primarily horizontal surface-mounted aluminum raceways located on walls above backsplashes. Islands have power boxes at reagent shelf standards fed from the casework below. Isolated ground outlets are identified in orange.

Emergency power is provided by an exterior diesel generator set and an automatic transfer switch. The adequacy of the stand-by power systems and its connected loads was beyond the scope of this study.

Lighting Systems

In general, most of the lighting fixtures in the lab spaces are 2x4, or 1x4 fluorescent troffers with prismatic diffuser lenses, T12 lamps, and magnetic ballasts. Corridor lighting is wall-mounted compact fluorescent. Office lighting is pendant mounted fluorescent with louvered diffusers. Lighting controls consist primarily of single pole toggle switches. While this system appears to be adequate, they are not as energy efficient as new LED lighting systems and do not offer the same level of control.

Data Systems

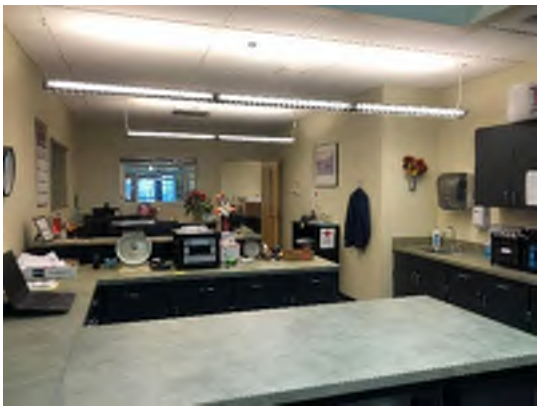
A central Main Data Facility room (MDF) is located near the center of the "U" in the east wing. A secondary IDF room is in the west wing. These facilities appear adequate for current use and have some capability to accommodate new equipment. Data wiring is routed in trays above ceilings or in exposed trays in the corridors.

Observations/Deficiencies Noted

The following operational and configuration observations/deficiencies were noted:

- *Public Access*
  The CLD provides training to other (client) law enforcement agencies and this constitutes most public visitors. There is a classroom and training lab accessible from the lobby that serves both internal and external training. This space also serves as the primary all-staff conference space. It can accommodate 24-32 students, which generally meets the current need; however, when the 37 current occupants use it for all-staff meetings, it is inadequate. The adjacent training lab gets limited use, primarily due to its location on the non-secure side of the labs. It would be better used if it could be incorporated into the larger lab, perhaps as an expansion of the DNA Lab.
- *Evidence*
  The intake is provided with a separate, secure vestibule and lobby. There is an identified evidence viewing room that can be accessed from the secure side as well as the lobby. The main evidence storage area generally accommodates current need but has little room for future expansion. Future growth anticipates adding one property evidence custodian. This will require reconfiguration to accommodate administrative space for this position. As the administrative operation reduces paper use, converting the current records room for use in evidence administration and storage could accommodate anticipated growth.

Evidence storage space in the lab areas is overcrowded and, in some cases, has been repurposed to support other uses that could not be accommodated in the lab areas. *(see lab observations below)*



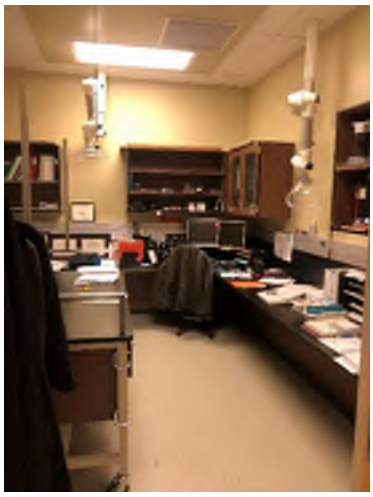
Evidence Processing

Cold Storage Evidence

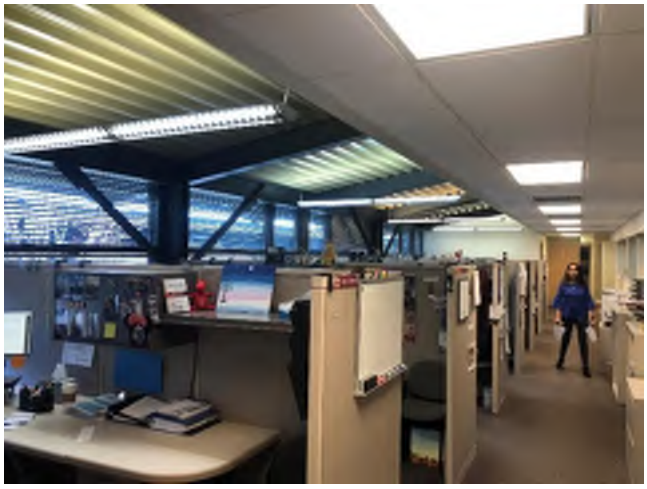
- *Administrative Space*

  The building area has not been increased since it was built. The original plan provided office space for 30 FT staff. There are currently 37 FT staff assigned to the lab. To accommodate the greater number of personnel now housed within, two of the exam rooms have been repurposed for offices, a lab space in Firearms is now a supervisor's office, and some of the offices have been modified from single to double occupancy. The result of "making do" is that the offices are crammed and congested and there is no room to accommodate any program or personnel growth. This has been exacerbated by moving office support functions (library, files, storage, copiers, etc.) into the interior circulation spaces of the open offices.

  Planned staffing increases will bring the total staffing level to 46 at this location. As the staff increases to over 40, an office manager position is planned to be added to the administrative space, further congesting office and support functions. The facility needs to be remodeled or expanded to increase office space by 1,800–2,000-asf.



Exam Room converted to office space



Typical open office workspaces

- *Insufficient Personnel Support Space*
  With staffing greater than originally planned, the break room is undersized. To accommodate the need, the original library space has been repurposed into a quiet break room and the library functions dispersed into the open office areas. Lockers, showers, and toilets appear adequate for current and projected staffing.

- *Exam Rooms*
  The original design provided seven dedicated exam rooms, three in Microanalysis, three in DNA, and one for Firearms. The lack of office/desking space has resulted in two of the exam rooms (one in Micro and one in DNA) being repurposed to provide office space for three workstations. Addressing office needs would allow the exam spaces to be returned to lab use.

  The lack of a dedicated exam space for CSR has resulted in the original evidence lab being used as the one full-time Crime Scene Lab. They also use one of the Micro Labs on a part-time basis, which can impact efficiency of workflow and create possible cross contamination.

  This MA Lab has a Scanning Electron Microscope (SEM) with adjacent utility and prep rooms. This equipment is planned to be replaced soon with a newer device, which will require much less space. It would be desirable to convert the SEM space into an exam room when this equipment is replaced.

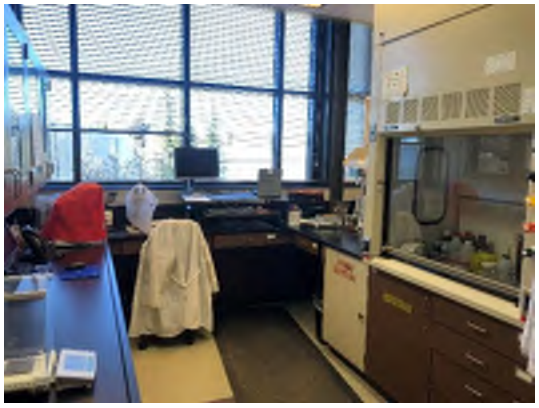
- *Microanalysis/Trace Lab*
  There are four "U" shaped workstations in the lab serving two scientists. Located in the southern part of the east wing, this space is adequate for current and projected use.


MA Lab


MA Exam Room

- *Chemistry Lab*
  Located in the west wing of the lab, the Chemistry section provides 10 lab stations in this lab area currently serving five scientists, four in the MA sections and one in QD section. This meets current need. Near term plans are to add two scientists in the MA Section and another one in QD. This can be accommodated in the existing lab space.

  The adjacent instrument room functions for current need but has no capability for increasing equipment in support of staffing growth.



Chemistry Lab

Instrument Lab

- *DNA Lab*
  Located in the East Wing, the DNA lab section includes nine "U" shaped workstations and one reagent prep station in the lab serving 12 scientists and one lab tech. This results in scientists needing to share/schedule bench space for their caseload. Sharing bench space increases risk of cross-contamination and reduces the amount of time available for staff to utilize lab space. The storage capacity for evidence each scientist has checked out to process is also impacted by shared space.

  Near-term growth includes adding two more DNA scientists in this lab. To accommodate this growth and to provide adequate lab workstations for 14 scientists, additional lab stations will be needed.

  The adjacent Extraction, PCR Set-Up, and Post-Amplification labs have been adequate for current use; however, fitting the amount of instrumentation in the current benching has been difficult. In the future, it is anticipated that new instrumentation will be smaller in size and will mostly be accommodated in the current space. If adequate administrative space is provided, the spaces that were intended to be exam rooms that have been repurposed for offices could be used to support DNA sample prep and processing.

DNA Lab

Post-Amplification Lab

- *Latent Prints Lab*
  This lab was constructed in 2012 in a space that was originally intended as a toxicology lab. It has two workstations and an adjacent evidence/photo room serving three scientists. Originally designed with two additional workstations, it was reduced in size due to budget constraints. To accommodate all current staff without "sharing", one additional lab station is required. Long-term growth would require a total of four lab stations dedicated to this function.

- *Firearms Lab*
  Located at the north tip of the west wing, this lab houses two workstations serving three scientists. Near term growth anticipates adding an additional FA scientist. The scientists use the lab space for both casework and administrative functions. It is crowded and needs to be expanded/modified and separate administrative space provided for each scientist.

  The NIBIN lab is planned to be repurposed into a supervisor's office. The microscope lab was designed for one scope station, but currently houses two with a third station planned. This expansion would either occur into the workshop space or be relocated into the existing exam room. The workshop and the Caswell range appear adequate for current and future growth.

Firearms Lab with office workspace on lab top

PFA Microscope Lab with 2nd scope in corridor

- *Questioned Documents Lab*
  This lab occupies two of the lab stations in the Chemistry Section serving one scientist. Long-term growth anticipates one additional scientist dedicated to this function. It is anticipated that this will be accommodated in the existing dedicated space although an increase in administrative/office space would be necessary.

QD Lab

- *Crime Scene Response (CSR)*
  The CDR section was not initially programmed as a housed function when the building was designed. It currently occupies three office spaces housing five scientists. What was initially designed an Evidence Lab has been repurposed to serve as a CSR Exam Lab. As the CRST has a mobile response vehicle that needs to be housed in an environmentally controlled space, the vehicle evidence bay has been used.

  Long-term growth anticipates the addition of one scientist dedicated to this function. It is anticipated that this will be accommodated in the existing dedicated space, although an increase in administrative/office space would be necessary.

CSR Lab

Vehicle Evidence Bay repurposed to house CSR Vehicle

SPACE ALLOCATION

The following table provides the current allocation of space within the existing lab and the planned future space need. It is based on the projected increase of staffing and "right" sizing spaces that are currently below industry standards.

Program/Space	*Existing Area (36 FTE)*	*Notes*	*Projected Area (44 FTE)*
Administration	**2,460**		**2,705**
Lab Manager	*255*		*255*
Lab Admin Office	*513*		*513*
Office/IT Manager	-		*140*
Records/Casefile Storage	*185*		*185*
Conference	*232*		*250*
Classroom	*502*	Connected to Training Lab	*502*
Training Lab	*323*	Connected to Classroom	-
Kitchen/Break Room	*240*		*500*
Library/Quiet Room	*210*		*360*

Program/Space	*Existing Area (36 FTE)*	*Notes*	*Projected Area (44 FTE)*
Property/Evidence	**2,086**		**2,269**
Evidence Vestibule	*90*	Secure access separate from public lobby	*90*
Evidence Lobby	*240*		*240*
Evidence Viewing	*133*	Access from lobby and secure side	*133*
Evidence Office/Processing	*728*		*728*
Evidence Storage	*617*	High-density storage shelving	*800*
Narcotics Storage	*114*		*114*
Cold Storage	*164*		*164*
Crime Scene Response	**1,395**		**1,579**
CSR Supervisor Office	*123*		*140*
CSR Office Space	*313*	3 personnel	*480*
CSR Exam Lab	*227*		*227*
CSR Evidence Drying Room	*62*		*62*
Vehicle & Equipment Storage	*670*	Drive-through Bay	*670*
Latent Prints	**482**		**682**
Latent Prints Lab	*400*		*600*
Photo Room	*82*		*82*
Questioned Documents	*400*		*400*
QD Lab	*400*		*400*
Firearms	**1,288**	*Does not include Caswell Range trailer*	**1,699**
Firearms Lab	*456*		*800*
NIBIN Lab	*142*	Convert to Supervisors office	*142*
FA Exam Room	*124*		*124*
Secure Lab Storage	*46*		*46*
Microscope Room	*176*		*240*
Weapons Storage	*137*	High-density shelving	*140*
FA Workshop	*207*	Also functions as circulation to range	*207*
Materials Analysis	**5,788**		**10,066**
FA/QD Supervisor Office	*144*		*144*
MA Supervisors Office	*152*		*152*
Open Office	*1,510*	Current 11 workstations. Future 17 workstations	*3,400*
Lab Vestibule	*140*		*140*
Chemistry Lab	*1,055*	8 work areas - Need 12	*3,120*
Instrument Room	*752*		*752*
Secure Lab Storage	*150*		*150*
MA/Trace Lab	*778*		*1,101*

Program/Space	*Existing Area (36 FTE)*	*Notes*	*Projected Area (44 FTE)*
Trace /Exam Room	*323*		*323*
Exam Room	*190*		*190*
Exam Room	*158*		*158*
MA/Trace Office	*152*	Repurposed Exam Room	*152*
SEM Room	*150*		*150*
SEM Prep	*80*		*80*
SEM Utility	*54*		*54*
DNA	**6,128**		**10,244**
DNA Supervisor Office	*147*		*147*
DNA Supervisor Office	*145*		*145*
DNA Manager Office	*126*		*126*
Open Office	*1,444*	Current 9 workstations. Future 14 workstations	*3,640*
Lab Vestibules	*140*	3 each. 1 to lab and 2 in/out Post Amp lab	*200*
Evidence Storage	*265*		*265*
Lab Prep	*110*		*110*
Lab Office	*160*	Repurposed Exam Room. Future exam room	*160*
Exam Room	*240*		*240*
Exam Room	*240*		*240*
DNA Lab	*1,780*	9 existing Lab stations - 14 future	*3,640*
Extraction	*247*		*247*
PCR-Up Lab	*175*		*175*
PCR Amplification Lab	*714*		*714*
Reagent Prep	195	Functions also as an office	*195*
NET ASSIGNABLE	**20,027**		**29,644**
Unassigned	**14,073**		**14,617**
General Storage	*484*	Includes janitor/supply, chem/biohazard	*484*
Circulation	*3,696*	Includes vestibules and lobby	*4,446*
Toilets	*850*	Includes lockers	*850*
Mechanical/Electrical/Systems	*4,094*	Includes 2,500-sf in attic but not 1,000-sf ground-mounted units at the south	*4,094*
Shelled Space	*1,160*		-
Walls and Structure	*4,273*		*4,742*
TOTAL GROSS	**34,100**		**44,260**

Existing Floor Plan/Space Assignment

4.3 Marysville

Location

The Marysville Crime Lab is co-located with WSP District 7 Headquarters at 2700 116th St NE, Marysville WA 98271.

Site

The site area totals approximately 6-acres and is leased from the Tulalip Tribe. It is generally level with a slight slope from north to southwest. There is ample parking on-site with 19 parking spaces (2-accessible) provided in the non-secured north lot and 66 spaces (2-accessible) in the secure south lot. In addition, there are another 10-spaces for Patrol vehicles in secure parking along the east property boundary.

The only issues identified at the site relate to utilities. The existing sewer system is at its maximum capacity. Domestic water availability is also a potential issue. Until a recent change of source to the tribal water utility, water had been sourced from an on-site well. The amount of sand has caused problems with plumbing fixtures and fire protection devices in the building. This aspect does not impact laboratory functions as DI water is sourced in containers.

Marysville Site

NORTH

Building - General

The existing building was designed in 1989 and became operational in 1991. It is a single-story building totaling approximately 20,000-gsf. It is configured in a rectangular shape with a central open courtyard. The D-7 headquarters is west of the courtyard while the Communications Center and Crime Lab are to the east. Originally, the crime lab only totaled only 2,400-sf of the building. This was increased to 5,022-gsf with a 2,600-gsf addition to the southeast constructed in 1997.

Configuration

The lab area is located south of the Communication center in the southeast wing of the building.

- *Security/Zoning*
  Public access is controlled by a secure vestibule at the main building entrance. This is staffed by D-7 administrative personnel. Once through the lobby, interior circulation to the lab is controlled by an interior door. This creates an interior corridor that functions as a secure vestibule/lobby to the lab area. It can be accessed from the exterior from the secure parking area. There is a transaction counter and window for evidence transfer from the lobby.

  Once in the lobby, access to the lab is controlled by the property custodians. Door access and specialty security systems were noted and generally comply with recommended standards.

- *Adjacencies*
  In general, the relationship of functional areas in the building has been arranged where it physically fits. The lab area is subdivided with an enclosed shared equipment lab and an enclosed post-amplification room. Other lab spaces are open with a common atmosphere. Supervisory personnel are physically separated from the open office area.

- *Flexibility*
  Size and configuration of fixed casework does not allow for flexible reconfiguration should processes change or new ones require additional space. The extremely limited space allows no consideration for future flexibility.

- *Contamination Control*
  There are no bio vestibules at entrances to lab spaces. Primary potential source of contamination is the need for scientists to share lab stations.
- *Collaboration/Staff Support*
  There is little or no room in the lab for "in-between" functions or space for conferencing or peer-to-peer collaboration that can facilitate those working on different cases to confer and discuss ideas. Any meetings that cannot fit in the limited office or the lab itself happen in the District's conference room, if available. There are no communal spaces for lunch or quiet areas where staff can decompress.

Architecture – Exterior Envelope

The exterior walls are faced with GWB on the interior, are insulated per code then in effect, and are faced with stucco. Ceramic tile is used as an accent. Windows are aluminum storefront and doors are hollow metal except for main entrance doors, which are storefront aluminum. Roofs are primarily single-ply thermoplastic membranes over insulated bases secured to the underlying plywood deck. Sloped roofs with standing seam metal are used at the major entrance and at the courtyard. There appears to be adequate slope to drain.

There was no observed distress on the exterior envelope systems, which appear to be in good condition and are appropriate to the intended use.

Architecture - Interior Finishes

Most interior walls are metal stud with GWB. Interior doors are hollow metal frames with wood doors. Interior finishes include vinyl tile in labs, carpet in offices, and exposed concrete in storage and support spaces. Ceilings are suspended acoustic tile in most spaces. There are two skylights in the open lab area.

There was no observed distress on the interior finish systems, which appear to be in fair condition and are appropriate to the intended use except that sheet flooring would be desired in the lab spaces.

Structure

The building foundation is traditional spread footings and slab-on-grade. The structural system is a combination of wood bearing walls and some steel columns and glue-laminated beam framing. Some interior walls have plywood sheathing which are likely providing seismic resistance. The specific level of seismic resistance was not confirmed in a review of the documents available to the planning team nor was it calculated as a part of this study.

There was no observed distress on the structural system, which appears to be in good condition and is appropriate to the intended use.

HVAC Systems

A detailed analysis of the HVAC system was beyond the scope of this study. Crime laboratory operations require the building mechanical systems to provide a level of safety, flexibility, reliability, and functional features that typical mechanical systems are

not able to meet. The mechanical systems serving the lab are separate from the general building systems. Equipment is in an adjacent mechanical room and on the roof top. These systems are more than halfway to their service life and they should be planned to be replaced in the near future.

There are only two fume hoods in the lab. This is not a sufficient number for the assigned scientists and creates a bottleneck in efficiency and possible cross-contamination.

Plumbing Systems

The utilities serving the building consist of domestic water service, natural gas medium pressure service, sanitary waste, and fire sprinkler mains. There were no observed deficiencies in these systems, which appear to be in good condition and appropriate to their intended use.

Emergency eye wash and safety showers are installed at all laboratory sections. There are no vestibules or wash sinks at entry points. There are a limited number of laboratory sinks which are inadequate in number and location.

Laboratory gases for helium, nitrogen, and instrument grade air are piped to the laboratory equipment room from localized gas cylinders. An outside-accessible storage room stocks replacement cylinders. Local vacuum pumps are provided where required.

Toilet rooms are shared with the D-7 Headquarters.

Electrical Systems

A detailed analysis of the electrical and power systems was beyond the scope of this study. Main panel and transformer rooms appear adequate and in good condition and the distribution panels serving labs are located outside the controlled environment and have good accessibility.

Distribution of power in the laboratory spaces is primarily horizontal surface-mounted aluminum raceways located on walls above backsplashes. Isolated ground outlets are identified in orange. A number of locations have had new circuits/outlets added in surface-mounted raceways and boxes.

Emergency power is provided by an exterior diesel generator set and an automatic transfer switch. The adequacy of the stand-by power systems and its connected loads was beyond the scope of this study.

Lighting Systems

In general, most of the lighting fixtures in the lab spaces are 2x4, or 1x4 fluorescent troffers with prismatic diffuser lenses, T12 lamps, and magnetic ballasts. Corridor lighting is wall-mounted compact fluorescent. Office lighting is pendant mounted fluorescent with louvered diffusers. Lighting controls consist primarily of single pole toggle switches. While this system appears to be adequate, they are not as energy efficient as new LED lighting systems and do not offer the same level of control.

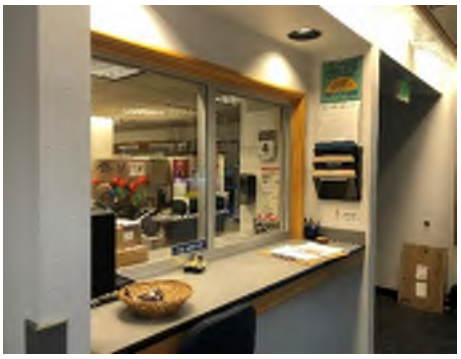
Data Systems

Data connections feed from the buildings Main Data Facility room (MDF) located adjacent to the Communications center. There is no IDF room dedicated to the Lab functions. Data wiring is routed above ceilings and in conduits to the horizontal raceway systems. Where equipment has been added, a number of data drops are simply cabling dropping from the ceiling to the equipment.

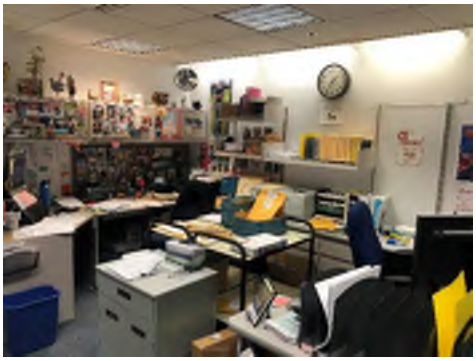
Observations/Deficiencies Noted

The following operational and configuration observations/deficiencies were noted:

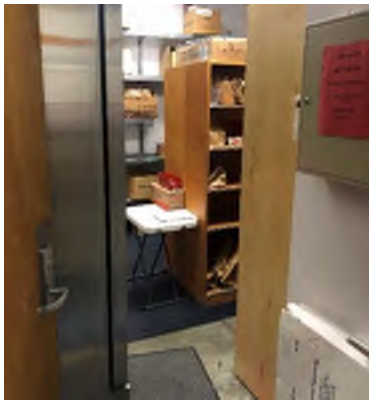
- *Public Access*
  There is little or no public access to the lab except for served agencies and delivery services dropping off evidence parcels.
- *Evidence*
  The intake is provided with a secure vestibule/corridor lobby. There is no room provided for evidence viewing. The main evidence storage area does not accommodate current need. There are two commercial-grade (food service) freezers in the evidence room and there is insufficient room to fully open the door. The room was not designed for the added heat generated by this equipment and the packaged AC unit barely provides supplemental cooling to off-set heat gain. There is a smaller bio-evidence storage room that has locked cabinets and a residential-grade side-by-side refrigerator/freezer. It is inadequate size for current needs. There is no capability for future expansion.



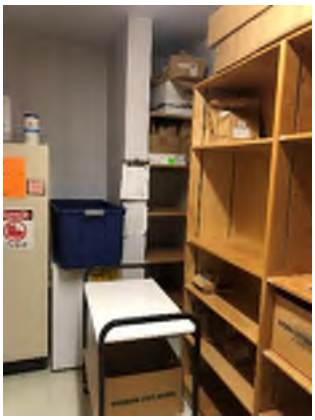
Evidence Receiving Lobby



Evidence Custodians do all processing in their administrative space



Evidence room – Note Freezer in way of door swing



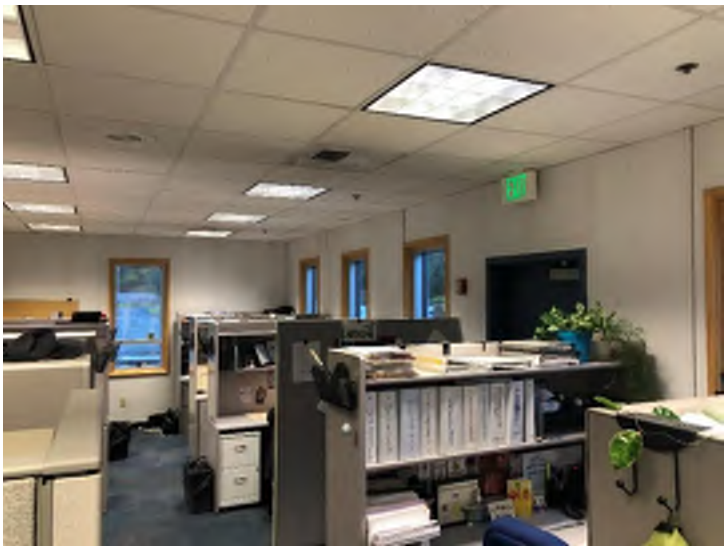
Bio-Evidence room

- *Administrative Space*
  The lab function in the building has expanded once since original construction but the amount of space for the number of assigned scientists has never been adequate.

  There are two enclosed offices, one for the Lab Manager and one shared by the DNA and MA Lab Supervisors. Both of these spaces started out as lab space and one still has a lab sink installed. There is little or no space for confidential meetings needed for HR or other secure meetings.

  There is minimal space for scientists to accomplish their administrative tasks and little or no room for storage of supporting material. There are 11 workstations provided for scientists in an area initially designed to accommodate five. To accomplish this, office support functions such as files, storage, copiers, etc. have been moved to the interior circulation.

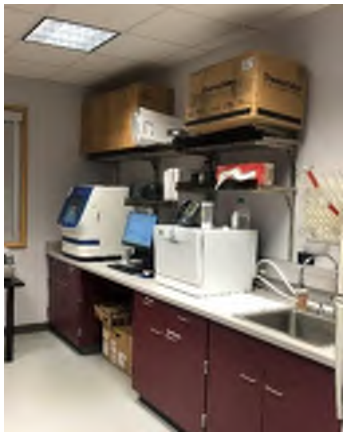
  Offices are crammed and congested and there is no room to accommodate any program or personnel growth.



Open office workspaces

- *Insufficient Storage*
  There is a noted lack of storage for records, case files, and material/supplies. Wherever staff can find room, they use it for storage. File cabinets are placed in corridors, boxed supplies are stored over equipment or in knee spaces in the lower cabinetry. To address this need, there is an exterior secure steel container used to store one year of case files.

Files placed in corridor



Note supplies stored over equipment and in lower casework knee space

- *Insufficient Personnel Support Space*
  With staffing greater than originally planned, there is no space provided for non-work personnel support. There is no break/lunch space. The only accommodation is a small area of benchtop where a coffee pot and microwave are located. There is no provision for personnel lockers. The staff need to use the District facilities for showers and toilets.

The only accommodation for a staff break area is a microwave and toaster oven on a work counter

- *Exam Rooms*
  There are no dedicated exam rooms. Examination of evidence takes place on common worktables in the open lab area. This is a severe impact on efficiency of workflow as any investigation/processing has to be scheduled for a single work time as it is impossible to secure in place if the task takes longer than a single shift. This also contributes to possible cross contamination.

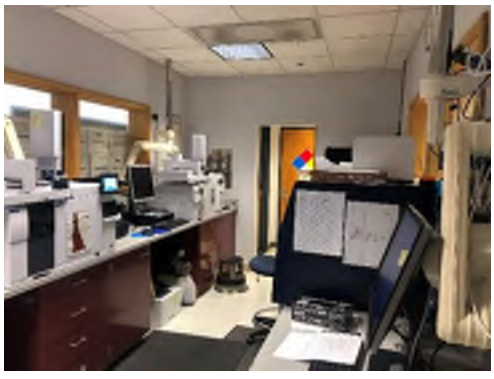

Shared exam tables on the open lab area.

- *Microanalysis/Trace Lab*
  There is a single "U" shaped workstation in the common area lab serving four scientists. This space is inadequate for current and projected use.

- *Chemistry Lab*
  Located in the center of the lab, the Chemistry section provides two lab stations with a single shared fume hood currently serving four scientists. This does not meet current need. Near term growth cannot be accommodated in the existing lab space.

  The adjacent instrument room is cramped and overcrowded. It has no capability for increasing equipment in support of staffing growth.





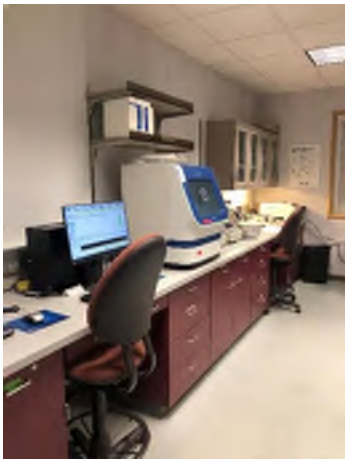

Chemistry Lab *Instrument Lab*

- *DNA Lab*
  The DNA lab section includes two "U" shaped workstations and one reagent prep alcove in the lab serving seven scientists. There is a single fume hood that is shared by DNA and Trace Labs. This results in scientists needing to share/schedule bench space for their caseload. Sharing bench space and fume hoods increases risk of cross-contamination and reduces the amount of time available for staff to utilize lab space. The storage capacity for evidence each scientist has checked out to process is also impacted by shared space.

  Near-term growth includes adding 7-10 more DNA scientists in this lab. To accommodate this growth and to provide adequate lab workstations for 14 scientists, additional lab stations will be needed.

  The adjacent Extraction, PCR Set-Up, and Post-Amplification labs have been made to work for current use; however, there is insufficient space to fit the desired amount of instrumentation.

DNA Lab Area




PCR lab

- *Latent Prints Lab*
  There is no space provided for Latent Prints.
- *Firearms Lab*
  There is no space provided for Firearms Lab functions.
- *Questioned Documents Lab*
  There is no space provided for Questioned Documents.
- *Crime Scene Response (CSR)*
  There is no space provided for Crime Scene Response.

SPACE ALLOCATION

The following table provides the current allocation of space within the existing lab and the planned future space need. It is based on the projected increase of staffing and "right" sizing spaces that are currently below industry standards.

Program/Space	*Existing Area (16 FTE)*	*Notes*	*Current Space Need (24 FTE)*	*Future Space Need (51 FTE)*
Administration/Support	**130**		**1,140**	**3,090**
Lab Manager	*130*		*240*	*240*
Lab Admin Office	-		*120*	*120*
Records/Casefile Storage	-	Current in corridor…2-yrs in outside	*300*	*300*
Conference	-	Currently borrow D& conference room	*240*	*765*
Training	-	20-30 classroom		*900*
Kitchen/Break Room	-		*160*	*510*
Library/Quiet Room	-		*80*	*255*
Property/Evidence	**471**		**1,170**	**1,790**
Evidence Vestibule	-		*80*	*80*
Evidence Lobby	*58*		*110*	*110*
Evidence Viewing	-	Access from lobby and secure side	*120*	*120*
Evidence Office/Processing	*149*	Current 2 PEC /4 future	*240*	*480*
Evidence Storage	*166*		*400*	*600*
Narcotics/Bio Storage	*98*		*110*	*200*
Cold Storage		currently included in Evidence Storage	*110*	*200*
Crime Scene Response		Currently does not exist	**-**	**860**
CSR Workspace				*100*
CSR Exam Lab		Vehicle exam		*760*
Latent Prints	**-**	Currently does not exist	**-**	**860**
Latent Prints workspace		2 Scientists		*200*
Latent Prints Lab		2 Workstations		*520*
Photo Room				*140*

Program/Space	*Existing Area (16 FTE)*	*Notes*	*Current Space Need (24 FTE)*	*Future Space Need (51 FTE)*
Questioned Documents	**-**	Currently does not exist	**-**	**-**
Firearms	**-**	Currently does not exist	**-**	**3,480**
Firearms Lab		2 Scientists		*520*
NIBIN Lab				*150*
FA Exam Room		Does not include Caswell		*200*
Secure Lab Storage				*60*
Microscope Room				*200*
Weapons Storage				*150*
FA Workshop				*200*
FA Range				*2,000*
Materials Analysis	**1,838**		**3,140**	**6,820**
MA Supervisors Office	*100*	Currently shared with DNA Supervisor	*140*	*140*
Open Office	*166*	Current 4 Scientists - Near-term 5 Scientists - Future 10 Scientists	*500*	*1,000*
Lab Vestibule	-		*140*	*280*
Chemistry Lab	*472*	Currently 2 work areas. Future 6	*520*	*1,560*
Instrument Room	*200*		*300*	*800*
Chem Storage	*82*		*100*	*160*
MA/Trace Lab	*678*	Currently 1 work area and open exam area. Need 4, Future 8	*1,040*	*2,080*
Exam Room	*140*	Currently 1 open exam area. Need 2, Future 4	*400*	*800*
DNA	**1,385**		**4,035**	**7,260**
DNA Supervisor Office	*100*	Currently shared with MA Supervisor	*140*	*140*
DNA Managers Office		Currently shared with MA Supervisor	*120*	*120*
Open Office	*343*	Current 7 Scientists - Near-term 13 Scientists - Future 20 Scientists	*1,300*	*2,000*
Lab Vestibules			*140*	*280*
NA Lab	*598*	Current 2 Workstations - Near-term 6 Workstations - Future 12 Workstations	*1,560*	*3,120*
Extraction			*200*	*300*
PCR Set-Up Lab	*124*		*175*	*200*
PCR Amplification Lab	*220*		*400*	*600*
Instrument Room				*500*
Toxicology	**-**	Currently does not exist	**-**	**6,380**
Lab Manager				*240*
Supervisor				*140*
Open Office		10 Scientists		*1,000*
Evidence Receipt/Processing		1 PEC		*200*

Program/Space	*Existing Area (16 FTE)*	*Notes*	*Current Space Need (24 FTE)*	*Future Space Need (51 FTE)*
Evidence Storage				*400*
High Density Storage		Casefile		*300*
Lab Vestibules				*280*
Toxicology Lab		10 Workstations		*2,600*
Instrument Room				*500*
Reagent/Kit Prep				*300*
Drug Storage/Weigh Room				*120*
General Storage				*300*
NET ASSIGNABLE	**3,824**		**9,485**	**30,540**
Unassigned	**1,387**		**5,543**	**19,226**
Receiving				*400*
Chemical Storage				*160*
Gas Storage				*100*
Equip. Clean-up Laundry & Stor.				*200*
Lockers/Shower				*765*
Janitor				*200*
General Storage	*98*		*400*	*1,000*
Circulation	*647*		*1,707*	*6,413*
Toilets	-	Currently use Station facilities	*400*	*1,275*
Mechanical/Electrical/Systems	-	Includes HVAC/MDF/Comm	*1,897*	*6,108*
Walls and Structure	*642*		*1,138*	*3,665*
TOTAL GROSS	**5,113**		**15,028**	**50,846**
Net Assignable Area/FT Staff	*239*		*395*	*599*

Existing Floor Plan/Space Assignment

4.4 Olympia

Location

The Olympia Crime Lab is located at 3310 Capitol Blvd., Olympia WA 98512.

Site

The site is leased space on the lower floor of a 1960s-era suburban office building. On the west and lower side of the building, the entrance is from a parking lot. There is parking provided in non-secured lots surrounding the building.

With the limited functions in the lab, there are no specific requirements of the site other than parking for staff which is readily available.

Olympia Site

NORTH

Building - General

The existing building was constructed in the 1970s using means and methods typical of a suburban office building. It is a 2-level building with split-level entrances due to the sloping lot from the highpoint on the east to a low point at the southwest. The Crime lab has a main entrance from the lower lot. There is a narrow space between the adjacent building that provides for emergency egress form the east side of the lab which is fully below grade.

Configuration

The general configuration of the leased space is a rectangular plan with two lab areas, two open office areas, evidence receiving and processing and supporting spaces.

- *Security/Zoning*
  Public access is limited to an entry vestibule.
- *Adjacencies*
  As the lab has a single function, the adjacencies of the evidence-lab-office functions generally work well.
- *Flexibility*
  The configuration and limitation of being in a leased space with no available space for expansion severely limits flexibility.
- *Contamination Control*
  There are no vestibules at entrances to lab spaces. The mechanical systems appear to have been designed to provide needed environmental controls. Primary potential source of contamination is the lack of bio-vestibules and the need for scientists to share lab stations.
- *Collaboration/Staff Support*
  There is an adequately-sized classroom that also functions as the staff lunch/break room.

Architecture – Exterior Envelope

The exterior walls are jumbo brick faced with no insulation on the inside face. Exterior windows are limited as most of the building area is below-grade. There are two windows to the west and two to the east. Windows are a combination of aluminum and the public entrance door is storefront aluminum. The exterior envelope has not been upgraded since constructed. It is in fair to poor condition.

Architecture - Interior Finishes

Most interior walls are wood stud with GWB except where the inside face of the exterior walls and some interior walls are exposed jumbo brick masonry. Demising walls between the two lab areas terminate at the suspended ceiling. Interior doors are wood frames with wood doors. Interior finishes include sheet vinyl in labs and carpet in offices. Exposed concrete is used in storage and utility spaces. Ceilings are suspended acoustic tile.

There was no observed distress on the interior finish systems, which appear to be in fair condition and are appropriate to the intended use.

Structure

The building foundation appears to be traditional spread footings and slab-on-grade. The structural system is load-bearing jumbo brick masonry with wood framing for the floor/ceiling. The systems met codes in effect when designed and may meet life-safety standards of seismic performance.

There was no observed distress on the structural system, which appears to be in good condition and is appropriate to the intended use.

HVAC Systems

A detailed analysis of the HVAC system was beyond the scope of this study. Crime laboratory operations require the building mechanical systems to provide a level of safety, flexibility, reliability, and functional features that typical mechanical systems are not able to meet. The mechanical systems serving the lab are separate from the general building systems. Equipment is in an adjacent mechanical room and on the roof top. These systems are more than halfway to their service life and they should be planned to be replaced. There are two fume hoods, one in each lab area.

Plumbing Systems

The utilities serving the building consist of domestic water service and waste. There is no fire sprinkler system. There is minimal plumbing installed with a single utility sink in one lab, wall-hung porcelain sinks in the toilet rooms, and a stainless-steel counter sink in the classroom/break room and in the storage area. There is an old shower unit that is not currently used, except for storage. These systems appear to be in fair to poor condition and are near the end of their useful service life.

There are no emergency eye wash and safety showers. There are no vestibules or wash sinks at entry points. There are a limited number of laboratory sinks which are inadequate in number and location. There are no laboratory gases provided.

Electrical Systems

A detailed analysis of the electrical and power systems was beyond the scope of this study. Main panel and transformer rooms are common in the building and were not observed. There is a distribution panel mounted on the brick wall in the evidence processing area that does not have the required clearance at its front.

Distribution of power in the laboratory spaces is primarily surface-mounted steel conduits on the brick walls. There is no emergency power provided.

Lighting Systems

In general, most of the lighting fixtures in the lab spaces are 2x4 fluorescent troffers with plastic diffuser. Lighting controls consist primarily of single pole toggle switches. While this system provides the desired 50 fc, it is high-glare and not as energy efficient as new LED lighting systems. It does not have the desired level of controllability.

Data Systems

There is no IDF or MDF room dedicated to the Lab functions. Data wiring is routed above ceilings and in conduits to surface-mounted conduit drops. Where equipment has been added, a number of data drops are simply cabling dropping from the ceiling either in conduit or in poles to the equipment/furnishings.

Observations/Deficiencies Noted

The following operational and configuration observations/deficiencies were noted:

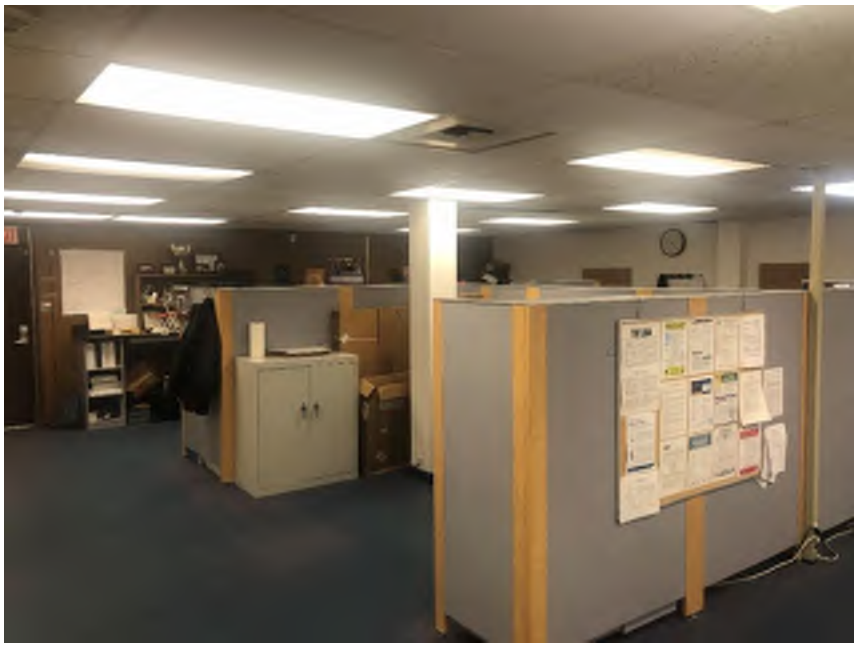
- *Public Access*
  There is little or no public access to the lab except for served agencies and delivery services dropping off evidence parcels.
- *Evidence*
  The intake is provided with a secure vestibule with a pass window that does not appear to be used. There is administrative space for two property and evidence custodians. Evidence processing occurs in the administrative area. There is no room provided for evidence viewing. The main evidence storage area is provided with some interior caging. It generally appears to accommodate current need. There is a smaller evidence storage room off the lobby that has locked cabinets and appears to be adequate size for current needs. There is no capability for future expansion.

Evidence processing in administrative space

Small evidence storage off lobby

- *Administrative Space*
  There are two enclosed offices, one for the Lab Manager and one for the Lab Supervisor. These appear adequate. The supervisor's office is internal to the building and does not have exterior daylight.

  Administrative space is provided for seven Forensic Scientists in two open office spaces. There are eight workstations provided. The administrative space is interior to the building and has no access to daylighting. Office support functions such as files, storage, copiers, etc. is placed around the administrative area and in the circulation space.



Open office workspaces

- *Storage*
  A shower and sink room located off one of the Photo Labs has been repurposed to serve as general lab storage. The space seems adequate; however, having to access this from the photo lab is an operational impact. There is another small storage room adjacent to the toilet areas.

General Storage

The classroom/break lab is serviceable for the assigned staff. The lack of daylight and vestiges of exposed HVAC in the room contributes to a worn and negative environment.

Classroom

Lunch/Break area within classroom space

- *Latent Prints Lab*
  There are two dedicated lab spaces, each provided with one fume hood. Lab-2 has a utility sink. Equipment (fuming cabinets, NINcha chamber, etc.) are located on the perimeter either freestanding or on casework or carts. The storage capacity in the labs appears adequate. There are two dedicated photo/alternative light exam rooms. These appear to meet current needs. There are no vestibules at Lab entrances.

Lab #1 Fume hood and MCV Cabinet

Lab-2 (Wet lab)

Smaller MCV Cabinet *Photo Lab-1*

SPACE ALLOCATION

The following table provides the current allocation of space within the existing lab and the planned future space need. It is based on the projected increase of staffing and "right" sizing spaces that are currently below industry standards.

Program/Space	*Existing Area (10 FTE)*	*Notes*	*Current Space Need (10 FTE)*
Evidence	**760**		**960**
Supervisor Office	*120*		*120*
Evidence Receiving	*302*	2 PEC	*240*
Evidence Processing	*137*		*300*
Evidence Vault-1	*106*		*300*
Evidence Vault-2	*95*		
Latent Prints	**1,979**		**2,900**
Lab Manager Office	*180*		*240*
Open Office	*870*	7 Scientists in workstations in 2 areas	*700*
Lab-1	*215*		*1,560*
Lab-2	*440*		*240*
Photo Lab-1	*98*		*160*
Photo Lab 2	*176*	(alternative light exam)	
Shared/Common	**811**		**700**
Classroom/Lunchroom	*560*		*250*
Conference			*250*
Storage	*195*	Has small unused shower	*200*
Storage	*56*		
NET ASSIGNABLE	**3,550**		**4,560**
Unassigned	**1,530**		**2,546**
Women's Toilets	*60*		*250*
Men's Toilets	*70*		
Circulation	*954*		*669*
MEP	*122*		*892*
Storage	*6*		*200*
Janitor Closet	16		
Interior Walls	302	Estimate based on net interior - assigned	*535*
TOTAL NET	**5,080**		**7,403**

Net Assignable Area/Staff FTE 355 446

Existing Floor Plan/Space Assignment

4.4 Seattle

Location

The Seattle Crime Lab is in the SoDo neighborhood of Seattle at 2203 Airport Way South in a 4-building complex developed by the City of Seattle as the Airport Way Center. The primary use of the development is to serve as the Seattle Police Department's Support Center. The WSP Crime Lab and Toxicology Labs are tenants in the second and third floors, and a small portion of the fourth floor of Building "A".

Site

The site area totals approximately 10-acres and is owned by the City of Seattle. It is generally level with a slight slope from south to northeast. Primary issue with the site is the access and availability of parking for staff. There are 64 parking spaces identified for Building A but approximately 30 are reserved for Seattle Police use. There are 11 spaces reserved for WSP Carpooling. This leaves approximately 45 spaces for 97 occupants of the Crime and Tox labs.

Airport Way Center
Location

Airport Way Center
Site Aerial

NORTH

Airport Way Center
Building A (from south)

Airport Way Center
Building A (from north)

Building - General

The City of Seattle acquired the property (four buildings) in 1999 to create a center in support of Seattle Police Department Operations. The existing Building A was originally constructed as a speculative office building by a private developer in the early 1980s and was renovated in 2001 to provide space for the SPD on the 1st floor and part of the 4th and to provide tenant space for the WSP crime and toxicology labs. The amount of space currently rented from the City totals approximately 59,375-NRSF.

Configuration

The general configuration of the building is rectilinear with a north-south central core separating the volume into two halves of approximately 11,000-nsf each. The main entrance is from the north on the second floor. There is a public lobby with reception. The second floor houses the main administrative spaces for the Seattle Crime Lab in addition to the Property/Evidence, Firearms, and DNA functions. The third floor houses the Materials Analysis function on the east side of the core and Toxicology on the west side. The WSP occupies approximately ¼ of the fourth floor which supports the CDL administration offices and CODIS Lab.

- *Security/Zoning*
  Public access is limited to the north lobby with direct access to an adjacent classroom/conference room. Supported agencies have a second secure corridor that functions for evidence transfer and has a dedicated controlled area for evidence viewing. Interior security to all spaces and elevators is by card readers.
- *Adjacencies*
  In general, the relationship of functional areas in the building supports good evidence/workflow.
- *Flexibility*
  Most of the laboratory workstations have fixed casework in a "U" shape with utility connections running horizontally within the casework. This does not allow for flexible reconfiguration should processes change or new ones require additional space.
- *Contamination Control*
  Bio vestibules are provided at all entrances to lab spaces. The mechanical systems appear to have been designed to provide needed environmental controls. Primary potential source of contamination is the need for scientists to share lab stations.
- *Collaboration/Staff Support*
  The configuration with separate labs and administrative spaces and the lack of "in-between" space does not promote peer-to-peer collaboration. Outside the laboratory, there are very limited communal areas where staff can decompress or that can facilitate those working on different projects to discuss ideas.

Architecture – Exterior Envelope

The exterior walls are faced with GWB on the interior face, are insulated per code when constructed. They are faces with an exterior stucco system that is integrated to the insulation (EFIS). Windows are a combination of aluminum storefront and curtainwall and doors are hollow metal except for public entrance doors, which are storefront aluminum. The roof was not observed.

Architecture - Interior Finishes

Most interior walls are metal stud with GWB. Interior doors are hollow metal frames with wood doors in the office areas and painted hollow metal in the lab area. Interior finishes include sheet vinyl in labs, carpet in offices, and vinyl tile in storage and support spaces. Ceilings are suspended acoustic tile in most spaces.

There was no observed distress on the interior finish systems, which appear to be in fair condition and are appropriate to the intended use.

Structure

The building structural system was not evaluated. It is assumed that systems met codes in effect when designed and appear to meet life-safety standards of seismic performance.

HVAC Systems

A detailed analysis of the HVAC system was beyond the scope of this study. The absence of persistent or reoccurring issues with the system indicate their general suitability for their current use and service in the Crime Lab.

Plumbing Systems

There were no observed deficiencies in these systems, which appear to be in good condition and appropriate to their intended use.

Emergency eye wash and safety showers are installed at all laboratory sections. Hand wash sinks at vestibules and laboratory sinks are suitable for use and seem adequate in number and location.

Laboratory gases for helium, nitrogen, and instrument grade air are piped to the laboratory equipment from localized gas cylinders. Local vacuum pumps are provided where required.

The building has sufficient provisions for toilet rooms.

Electrical Systems

A detailed analysis of the electrical and power systems was beyond the scope of this study. Distribution panels serving labs are located outside the controlled environment and have good accessibility. Distribution of power in the laboratory spaces is primarily horizontal surface-mounted aluminum raceways located on walls above backsplashes. Islands have power boxes at reagent shelf standards fed from the casework below. Isolated ground outlets are identified in orange.

Emergency power is provided by an exterior diesel generator set and an automatic transfer switch. The adequacy of the stand-by power systems and its connected loads was beyond the scope of this study.

Lighting Systems

In general, most of the lighting fixtures in the lab spaces are 2x4 fluorescent lay-in fixtures with prismatic diffuser lenses, T12 lamps, and magnetic ballasts. Corridor

lighting is a combination of 1x4 lay-in or compact fluorescent can-style down lights and wall-mounted compact fluorescent. Office lighting on the third floor has pendant mounted fluorescent with louvered diffusers in the high-celling area. Lighting controls consist primarily of single pole toggle switches. Some areas of uneven lighting and excess glare were observed in the lab spaces.

Data Systems

A central Main Data Facility room (MDF) is located on the second floor at the center of the administrative area. It is secure to the WSP function and does not house any other telecom systems. Secondary IDF rooms are located at the core at each floor. These facilities appear adequate for current use and have some capability to accommodate new equipment. Data wiring is routed in trays above ceilings or in conduit.

Observations/Deficiencies Noted

The following operational and configuration observations/deficiencies were noted:

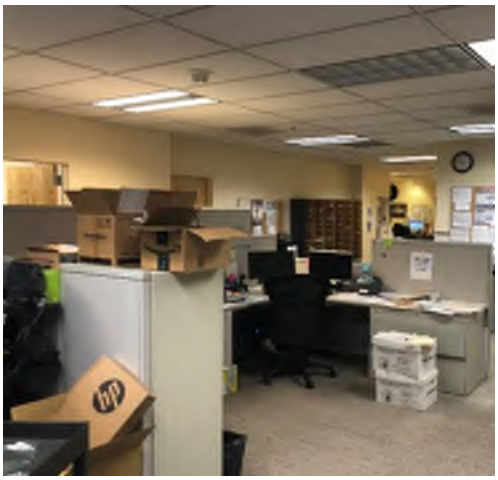
- *Division Administrative Space*
  Executive offices for the CDL Management and Standards and Accountability functions are located at the northeast corner of the 4th floor, co-located with the office area of the CODIS Lab. The functions of this space are physically located in the Seattle Lab but do not have any specific operational need to remain in proximity to the lab functions.
- *Crime Lab Administrative Space*
  The main administrative space for the lab is located on the second floor adjacent to the main entrance. To accommodate staffing change and growth, spaces originally intended for small conference rooms have been repurposed to office use. The office functions appear to be accommodated; however, there is little or no space for confidential meetings needed for HR or other secure meetings.

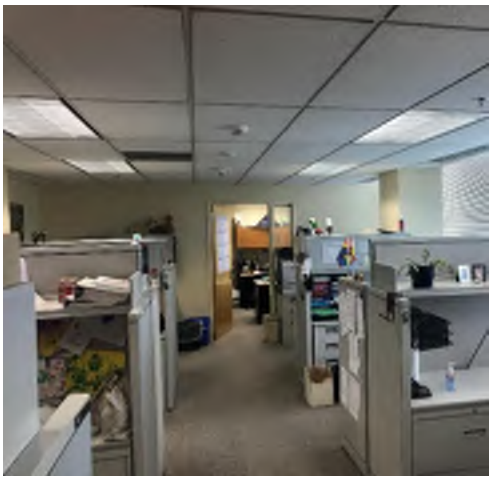
  Office and administrative space supporting the various lab functions is located adjacent to the specific lab functions.

  There is minimal space for scientists to accomplish their administrative tasks and little or no room for storage of supporting material. In the DNA Lab office, there are 19 workstations installed for scientists in an area initially designed to accommodate 14. To accomplish this, support spaces have been converted into double-occupant offices and office support functions such as files, storage, copiers, etc. have moved into the circulation space.

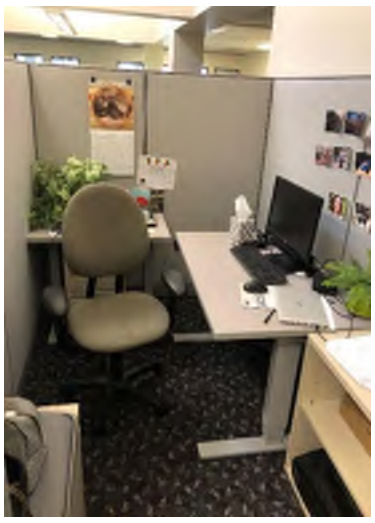
  The open office area in the Firearms Section was originally designed to support three staff but currently houses five. Access to adequate administrative space for scientists in the Toxicology section has also been an impactful issue. Initially planned for 25-scientists, the toxicology office space now supports 36 FTEs in this same space. This has resulted in both administrative and scientific personnel doubling up on office space. This situation will be partially addressed with the planned temporary toxicology lab in Federal Way.

In general, offices are crammed and congested and there is no room to accommodate any program or personnel growth.

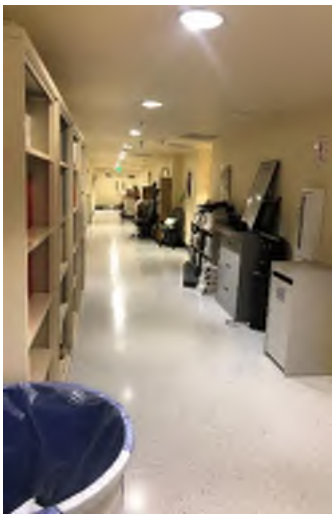


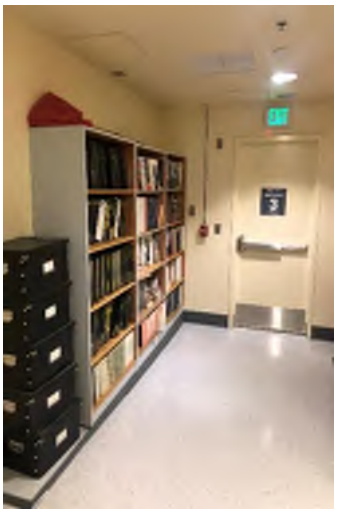


Typical open office workspaces



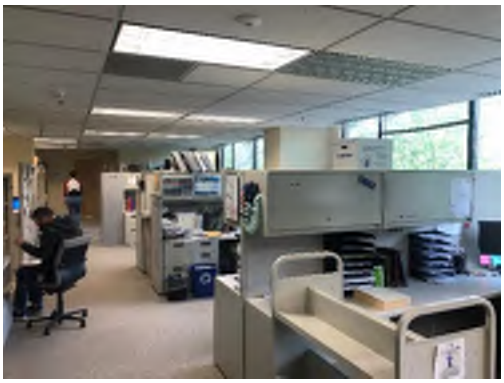
Undersized workspaces





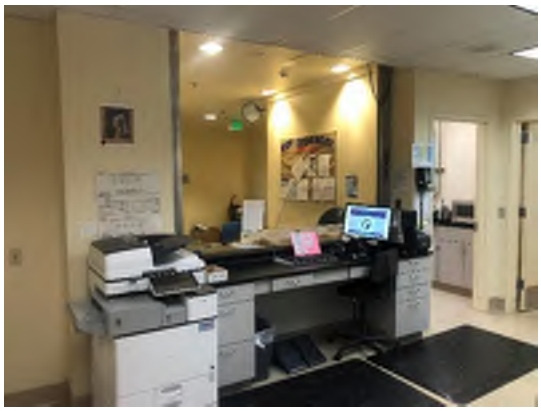
Corridors used for storage and other support functions

Shared library in personal workstation

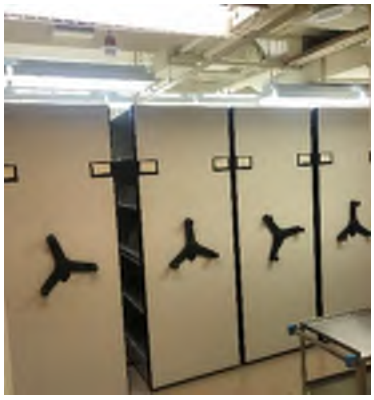


Tox Lab office area

- *SCL Evidence*
  The intake is provided with a separate secure vestibule and lobby. There is an identified evidence viewing room that can be accessed from the secure side of the lobby. The main evidence storage area generally accommodates current need. Evidence storage space in the lab areas is overcrowded and, in some cases, has been repurposed to support other uses that could not be accommodated in the lab areas. *(see lab observations below)*

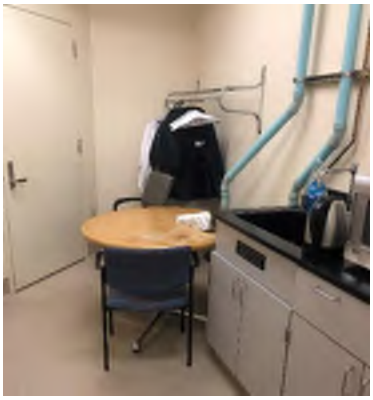


Evidence Receiving



High-Density Storage

Evidence Processing



Evidence Viewing

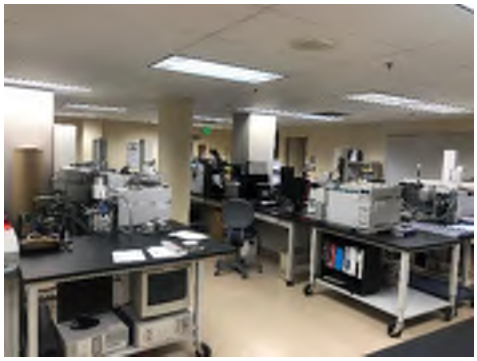
- *Personnel Support Space*
  With staffing greater than originally planned, most of the space originally planned for staff break areas have been repurposed as office or office support. There is minimal space to accommodate quiet break areas or staff lunchrooms. With the issues related to parking and location, most staff remain in the building during their lunch time and take their breaks and lunch at their desks.

- *Microanalysis/Trace Lab*
  Located in the southeast corner of floor three, MA Lab entrance corridor has a wash station but is not configured as a controlled vestibule. There are six "U" shaped workstations in the lab. Two exam rooms, a SEM analysis room, a secure reference storage and small evidence room are included. This space appears adequate for current and projected use.

MA Lab

- *Chemistry Lab*
  Located adjacent to the MA Lab, the Chemistry section provides 10 lab stations. This meets current need.

  The adjacent instrument room functions for current need but has no capability for increasing equipment in support of staffing growth.



Chemistry Lab

MA/Chem Instrument Room

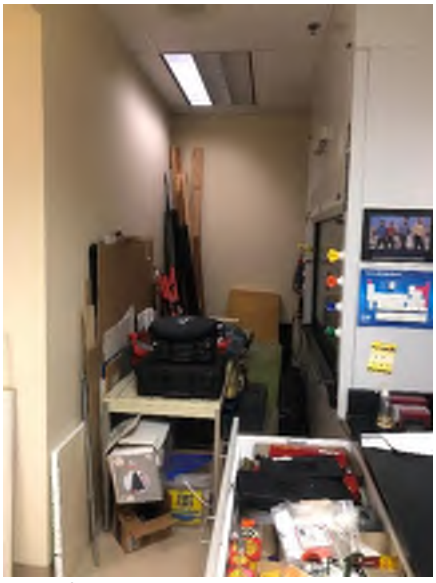
- *DNA Lab*
  Located on east half of the second floor, the DNA lab section includes 14 "U" shaped workstations and one reagent prep station in the lab serving 19 scientists and one lab tech. This results in scientists needing to share/schedule bench space for their caseload. Sharing bench space increases risk of cross-contamination and reduces the amount of time available for staff to utilize lab space. The storage capacity for evidence each scientist has checked out to process is also impacted by shared space.

  The adjacent Extraction, PCR Set-Up, and Post-Amplification labs have been adequate for current use; however, fitting the amount of instrumentation in the current benching has been difficult. In the future, it is anticipated that new instrumentation will be smaller in size and will mostly be accommodated in the current space.

DNA Lab

- *Firearms Lab*
  Located in the southwest corner of the second floor, this lab supports four scientists and one lab tech. It has an open lab area with two adjacent exam rooms and two work areas. Additionally, it has an NIBIN/IBIS lab and storage for reference weapons. In general, the workspaces in the FA Lab are crowded and need to be expanded/modified and adequate administrative space provided for each scientist. The Caswell range is not directly adjacent to the lab and requires exiting the lab space to the exterior to access the range.

FA Open Lab



FA work area

Caswell Range

- *Crime Scene Response (CSR)*
  There is no space assigned to support the CSR section at the Seattle Lab.

- *Questioned Documents*
  There is no space assigned to provide investigation/analysis of questioned documents at the Seattle Lab.

- *Latent Prints*
  There is no space assigned to provide latent prints investigation/analysis at the Seattle Lab.

- *Toxicology Lab*
  Located on east half of the third floor, the Toxicology lab section includes fourteen "U" shaped workstations and one reagent prep station in the lab serving 19 scientists and one lab tech. This results in scientists needing to share/schedule bench space for their caseload. Sharing bench space and fume hoods increases risk of cross-contamination and reduces the amount of time available for staff to utilize lab space. The storage capacity for evidence each scientist has checked out to process is also impacted by shared space.

  The Instrument lab supporting Toxicology is crammed with equipment and lacks bench space to accommodate needed instrumentation. This lack of instrument space results in less efficient testing of casework, resulting in an overall increase in turnaround time and backlog. The supporting utilities have lacked capacity to serve/cool the current instruments which were unable to operate due to insufficient compressed air.

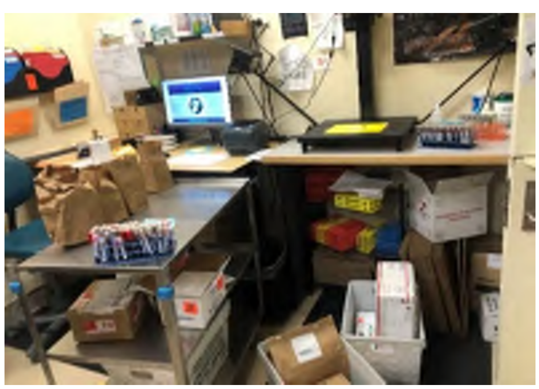
Toxicology Lab

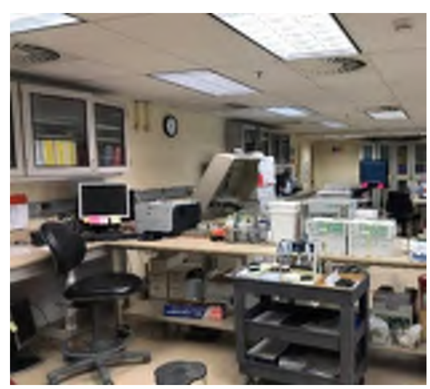
Toxicology Instrument Room

Evidence processing and storage serving the Toxicology Lab is greatly undersized. Since 2012, the Tox Lab has incurred a 45% increase in casework that has resulted in a significant increase in the number of individual evidence items that need to be processed and stored within the Lab – currently, several 'overflow' refrigerators are temporarily housed in laboratory vestibules (entrances to the general laboratory areas). This has a negative impact on the efficiency and operations of evidence processing, storage, and retrieval. Additionally, lab space has been taken for evidence processing.

TOX Evidence Room

Cold storage at capacity





Evidence Processing in Lab Spaces

- *CODIS Lab*
  Located in the northwest corner of the fourth floor, this lab supports one manager, one admin support, four scientists, and a lab technician. Similar to the DNA lab in functional process, this lab is specific to the generation and maintenance of the State's Felon DNA Database. It includes a small DNA amplification and post amplification room and open lab space for analysis. The storage of DNA records is also critical to its operation. The area of space appears adequate for its intended purpose.

DNA Sample Records Storage

DNA analysis stations

SPACE ALLOCATION

The following table provides the current allocation of space within the existing lab and the planned future space need. It is based on the projected increase of staffing and "right" sizing spaces that are currently below industry standards.

SEATTLE CRIME LAB - SPACE SUMMARY

Program/Space	*Existing Area*	*Notes*	*Projected Space Need*
CLD Administration/S&A	**1,467**		**1,620**
CLD Commander	*205*		*240*
S&A Manager	*158*		*140*
Quality Process Manager	*180*		*140*
Small Conference	*150*		*150*
Conference	*374*		*350*
Open Office	*400*	4 workstations + admin support	*600*
Toxicology	**7,676**	Note: Projected is 1/2 of planned operations	**7,990**
State Toxicologist	*98*		*240*
Lab Manager	*95*		*140*
QA Manager	*64*		*140*
Supervisors	*515*	Current 4 in shared office. Future 2 each location	*280*
Open Office/Work Area	*1,790*	Current 19 workstations - Future 12 each location	*1,200*
High Density Storage	*223*	Casefile	*300*
Break Area	*320*		*300*
Conference	*250*		*350*
Evidence Receipt/Processing	*130*	3 PEC - Currently use lab space - 2 at each location	*320*
Evidence Storage	*226*	Refrigerators & freezers	*300*
Lab Vestibules	*144*	2 each	*280*
Toxicology Lab	*2,200*	Existing 8 areas, 16 stations - Need 12 ea. location	*3,120*
Instrument Room	*1,320*	Need one ea. location	*1,000*
Prep	*191*	Need one ea. location	*200*
Drug Storage	*110*	Need one ea. location	*120*
Crime Lab Admin./Support	**4,747**		**5,050**
Reception	*376*		*400*
Lab Manager	*163*		*260*
Office Manager	*96*		*120*
Department Manager Offices	*729*	5 Scientists	*900*
Open Office	*787*	8 workstations	*800*
High-Density Storage	*377*		*300*
Small Conference	*110*		*250*
Conference	*826*		*1,100*
Table & Chair Storage	*110*	Adj to Conference	*120*
General Storage	*323*		*400*

Program/Space	*Existing Area*	*Notes*	*Projected Space Need*
Kitchen/Break Room	*408*		*500*
Library/Quiet Room	*200*		*210*
MDF/UPS	*242*	Dedicated Server	*210*
Property/Evidence	**1,566**		**2,160**
Evidence Intake/Office	*397*	3 PEC	*600*
Evidence Deposit (slam lockers)	*120*	Access from lobby and secure side	*120*
Evidence Viewing/Pick-up	*85*	Access from lobby and secure side	*120*
Evidence Packaging	*97*		*120*
Evidence Storage	*575*	Includes 260-nsf high-density storage shelving	*800*
Large Item/Bulk Storage	*91*		*120*
Narcotics Storage	*66*		*120*
Cold Storage (freezer)	*135*		*160*
Firearms	**2,738**		**5,440**
Lab Vestibule	*135*		*200*
Open Office	*355*	5 Scientists	*500*
Firearms Lab	*760*		*1,000*
FA Exam Room	*380*	2 each	*520*
Secure Lab Storage	*98*		*120*
Microscope Room/IBIS	*170*		*200*
Weapons Library/Storage	*270*		*300*
Workshop	*570*	2 each	*600*
Range		Currently a Caswell Trailer	*2,000*
Materials Analysis	**8,057**		**8,960**
Chem Supervisors Office	*104*		*140*
Chem Open Office	*260*	2 Workstations	*800*
Supervisors	*100*	Current 4 in private offices	
Lab Vestibule	*99*	2 each	*280*
Chemistry Lab	*2,294*		*2,000*
Instrument Room	*1,814*	Shared with Micro	*2,000*
Chem Storage	*151*		*100*
Micro/Trace Supervisors Office	*113*		*140*
MA/Trace Open Office	*550*	6 Workstations	*600*
Lab Vestibule	*51*	2 each	*140*
MA/Trace Lab	*1,480*		*1,600*
Reference Storage	*166*		*180*
Evidence Room	*60*		*100*
Exam Room	*308*	2 each	*400*
SEM	*225*		*200*
Micro Photo Room	*117*		*120*
Prep	*165*	2 each	*160*

Program/Space	*Existing Area*	*Notes*	*Projected Space Need*
DNA	**7,774**		**10,350**
DNA Supervisor Office	*153*	2 each	*280*
Open Office	*1,466*	Currently 16 - need 19 Scientists	*1,900*
Lab Vestibules	*200*	3 Each	*300*
DNA Lab	*3,160*	19 Workstations	*4,940*
Evidence Room	*294*		*300*
Exam Room	*560*	2 each	*520*
Reagent Prep	*350*		*300*
Blood Prep	*160*		*160*
Dark Room	*150*		*150*
Extraction	*272*		*300*
PCR Set-Up Lab	*414*		*500*
PCR Amplification Lab	*150*		*200*
Post Amplification Lab	*445*		*500*
CODIS	**6,425**		**6,280**
Supervisor	*122*		*140*
Small Conference	*150*		*150*
Open Office	*2,187*		*1,600*
Break	*212*		*300*
Vestibule	*308*	2 needed	*280*
Reagent Prep	*138*		*160*
Amplification Set-Up	*252*		*270*
Instrument Room	*193*		*300*
Post-Amplification	*511*		*500*
Post-Amplification	*139*		*140*
Sample Storage	*860*		*500*
CODIS Lab	*1,353*	8 stations	*2,080*
Latent Prints	0	Currently does not exist	**860**
Open Office	0	2 Scientists	*200*
Latent Prints Lab	0	2 Workstations	*520*
Photo Room	0		*140*
NET ASSIGNABLE	**40,450**		**48,710**

Unassigned	**1,387**		**26,455**
Receiving		Exist. is common building	*260*
Chemical Storage		Exist. is common building or in assigned space	*160*
Gas Storage	*76*		*160*
Equip. Clean-up Laundry & Storage		Exist. is common building	*300*
Lockers/Shower		Exist. is common building	*400*
Janitor		Exist. is common building	*300*
General Storage	*98*	Exist. is common building	*600*
Circulation	*647*	Exist. is common building	*8,768*
Toilets		Exist. is common building	*1,500*
Mechanical/Electrical/Systems		Exist. is common building. Includes HVAC/MDF/Comm	*9,742*
Walls and Structure	*642*		*5,845*
TOTAL GROSS	**59,375**		**75,165**

Net Assignable Area/FT Staff *506* *573*

Existing Floor Plan/Space Assignment – SECOND FLOOR

Existing Floor Plan/Space Assignment – THIRD FLOOR

Existing Floor Plan/Space Assignment – FOURTH FLOOR

4.6 TACOMA

Location

The Tacoma Crime Lab is located together with the WSP Division-1 Headquarters and the Washington Department of Licensing Tacoma License Bureau in the State of Washington Combined Transportation Center 2502 112th Street East Tacoma, WA 98445.

Site

The site area totals approximately 4-acres and houses the WSP and DOL in a main building with the WSP VIN Inspection in a separate building. Public parking is provided as well as secure parking for WSP vehicles. There were no other issues noted related to the site and it appears to adequately meet the needs of the lab.

Tacoma Site

NORTH

Building from 112th

Building - General

This building was designed in 1996 and completed in 1998. In 2014, the west portion of the lab was renovated to provide for increased functional area for the DNA Lab.

Configuration

The general configuration of the building is 2-stories in a in a "V" shape plan with one leg of the "V" along the north edge of the site facing 112th. It features a 2-story public lobby at the joint of the 'V". On the lower floor, the Department of Licensing operates a public licensing station on the north wing while the WSP Division HQ is in the south wing. The upper floor, north wing is where the Crime Lab is located.

- *Security/Zoning*
  Public access is limited to an entry vestibule off the second-floor upper lobby. Supported agencies use this vestibule for evidence transfer. No space is provided for secure evidence viewing. Door access and specialty security systems were noted and generally comply with recommended standards.
- *Adjacencies*
  In general, the organization of functional areas in the lab are maximized given the small overall volume of space. The staff have made accommodations to support good evidence/workflow.
- *Flexibility*
  Most of the laboratory workstations have fixed casework in a "U" shape with utility connections running horizontally within the casework. This does not allow for flexible reconfiguration should processes change or new ones require additional space.
- *Contamination Control*
  No separate bio vestibules are provided at entrances to lab spaces. The mechanical systems appear to have been designed to provide needed environmental controls.
- *Collaboration/Staff Support*
  The limited size of the lab and the need to maximize operations space leaves little "in-between" space to facilitate peer-to-peer collaboration. Off the entrance there is a single conference room accessible to staff.

Architecture – Exterior Envelope

The exterior walls are faced with GWB on the interior face, are insulated per code, and are faced with an exterior insulation finish system (EFIS). Windows are a combination of aluminum storefront and curtainwall and doors are hollow metal. A new single-ply thermoplastic membrane roof was installed. There was no observed distress on the exterior envelope systems, which appear to be in fair condition.

Architecture - Interior Finishes

Most interior walls are metal stud with GWB. Some fire-rated walls and shear wall are concrete masonry. Interior doors are hollow metal frames with wood doors. Interior finishes include sheet vinyl in labs, carpet in offices, and vinyl tile in storage and

support spaces. Exposed concrete is used in storage and utility spaces. Ceilings are exposed structure in the corridors and suspended acoustic tile in most spaces.

There was no observed distress on the interior finish systems, which appear to be in good condition and are appropriate to the intended use.

Structure

The building structural system was not evaluated. It is assumed that systems met codes in effect when designed and appear to meet life-safety standards of seismic performance.

HVAC Systems

A detailed analysis of the HVAC system was beyond the scope of this study. The absence of persistent or reoccurring issues with the system indicate their general suitability for their current use and service in the Crime Lab.

Plumbing Systems

There were no observed deficiencies in these systems, which appear to be in good condition and appropriate to their intended use.

Emergency eye wash and safety showers are installed at all laboratory sections. Hand wash sinks at vestibules and laboratory sinks are suitable for use and seem adequate in number and location.

Laboratory gases for helium, nitrogen, and instrument grade air are piped to the laboratory equipment from localized gas cylinders. Local vacuum pumps are provided where required.

The building has sufficient provisions for toilet rooms.

Electrical Systems

A detailed analysis of the electrical and power systems was beyond the scope of this study. Distribution panels serving labs are located outside the controlled environment and have good accessibility. Distribution of power in the laboratory spaces is primarily horizontal surface-mounted aluminum raceways located on walls above backsplashes. Islands have power boxes at reagent shelf standards fed from the casework below. Isolated ground outlets are identified in orange.

Emergency power is provided by an exterior diesel generator set and an automatic transfer switch that is shared by the entire building. The adequacy of the stand-by power systems and its connected loads was beyond the scope of this study.

Lighting Systems

Lighting fixtures include a combination of 2x4 fluorescent lay-in fixtures with prismatic diffuser lenses and 1x4 pendant fluorescent lighting with prismatic diffusers. Lighting controls consist primarily of single pole toggle switches.

Data Systems

A central Main Data Facility room (MDF) is located on the first floor and is shared with the Division HQ. A small Secondary IDF closet located at the back entrance to the lab provides data termination and equipment for the lab functions. These facilities appear adequate for current use.

Observations/Deficiencies Noted

The following operational and configuration observations/deficiencies were noted:

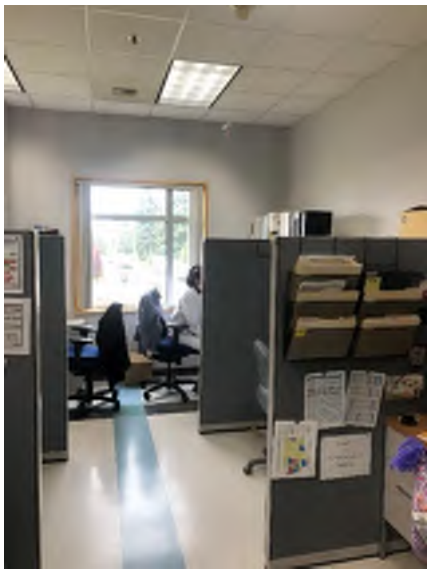
- *Public Access*
  There is little or no public access to the lab except for served agencies and delivery services dropping off evidence parcels.
- *Evidence*
  The intake is provided with a secure vestibule/corridor lobby. There is no room provided for evidence viewing. Evidence processing takes place on carts in the administrative work area. The main evidence storage area is undersized and does not accommodate current need. There is a walk-in freezer in the evidence room that is adequate for need.

Evidence storage with processing carts

Cold Storage Evidence

- *Administrative Space*
  Five enclosed offices are provided for the Lab Manager and supervising scientists with the remainder of administrative space being workstations within the lab areas. There is minimal space for scientists to accomplish their administrative tasks and little or no room for storage of supporting material. Office areas are crammed and congested and there is no room to accommodate any program or personnel growth.

Property Custodian work area & Lab Manager office



Typical open office workspace within labs area

- *Insufficient Personnel Support Space*
  There are no break room or personnel support spaces. Staff are provided lockers in the corridor.
- *Exam Rooms*
  There is no dedicated exam room. An area of the open lab can be divided with a curtain if special lighting is needed for analysis. This area also has a large vent hood above it to exhaust noxious odors.

Exam area with light-blocking curtain and vent hood above

- *Microanalysis/Trace/Chemistry Lab*
  The MA and Chemistry functions are "blended" at the lab owing to the lack of separate spaces for these functions. This area of the lab was renovated in 2011 and, with the exception of inadequate size, appears to function adequately.


MA/Chemistry Lab

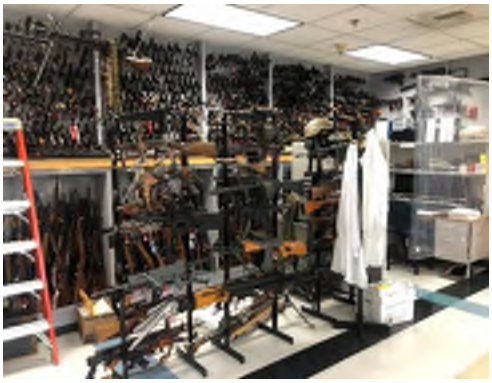

Instrument Room

The adjacent instrument room functions for current need but has no capability for increasing equipment in support of staffing growth.

- *DNA Lab*
  The DNA lab area provides fixed casework at the perimeter and movable tables at the center. It accommodates six scientists and one lab tech. The adjacent Extraction, PCR Set-Up, and Post-Amplification labs have been adequate for current use


DNA Lab *Post-Amplification Lab*

- *Firearms Lab*
  This this lab supports four scientists and one lab tech. It is crowded and needs to be expanded/modified and separate administrative space provided for each scientist. There is a Caswell range trailer located in the secure parking lot.



Firearms Lab with office workspace within lab *Weapons library*

- *Crime Scene Response (CSR)*
  There is one individual supporting CSR function at this location. They are provided an office space in the D-1 area and have a CSR vehicle in the secure parking area.
- *Latent Prints Lab*
  There is no Latent Prints Lab at this location.
- *Questioned Documents Lab*
  There is no QD lab function at this location.
- *Toxicology Lab*
  There is no Toxicology function at this location.

SPACE ALLOCATION

- The following table provides the current allocation of space within the existing lab and the planned future space need. It is based on the projected increase of staffing and "right" sizing spaces that are currently below industry standards.

TACOMA CRIME LAB - SPACE SUMMARY

Program/Space	*Existing Area (19 FTE)*	*Notes*	*Current Space Need (19 FTE)*
Administration/Support	**541**		**1,180**
Lab Manager	*120*		*240*
Conference	*278*		*300*
Admin Workroom	*143*		*140*
Records	-	currently in corridors & conference	*300*
Break Room	-		*200*
Evidence	**847**		**1,500**
Evidence Lobby	*104*		*100*
Evidence Viewing	-		*100*
Evidence Receipt/Processing	*424*	2 PEC - No room to process…use carts	*700*
Evidence Storage	*216*		*400*
Narcotics Storage	-		*100*
Evidence Freezer	*103*		*100*
Firearms	**829**		**3,360**
FA Supervisor	*105*	Includes microscope station	*120*
Firearms Lab (265)	*610*	3 Scientists	*600*
Firearms Storage (265)		Included above	*200*
Gunshot Residue (252)	*114*		*120*
Microscope			*120*
FA Workshop			*200*
FA Range			*2,000*
Materials Analysis	**1,742**		**3,600**
Supervisor Office	*100*		*120*
MA Office	*233*	5 Scientists	*600*
Lab Vestibules	-		*240*
MA Lab	*584*		*1,560*
MA Exam	*200*		*400*
Trace Exam	*100*		*160*
Instruments	*455*		*400*
Controlled Storage	*70*		*120*

Program/Space	*Existing Area (19 FTE)*	*Notes*	*Current Space Need (19 FTE)*
DNA	**1,538**		**3,380**
Managers Office (259)	*100*		*120*
Supervisor Office (259)	*100*		*120*
Lab Vestibules	-		*240*
DNA Lab (258)	*650*		*1,300*
DNA Office (262B)	*298*	6 Scientists & 1 Lab Tech	*500*
PCR	*190*		*300*
Post Amplification (230)	*200*		*200*
Crime Scene Response	**100**		**300**
CSR Office Space	*100*	located in Field Operations area	*100*
CSR Exam Lab	-		*200*
NET ASSIGNABLE	**5,597**		**13,320**
Unassigned	**1,551**		**5,674**
General Storage	*73*	Includes supply	*200*
Circulation	*910*		*1,698*
Toilets	-	Currently use Station's facilities	*380*
Mechanical/Electrical/Systems	-	Currently uses general building systems	*2,264*
Walls and Structure	*568*		*1,132*
TOTAL GROSS	**7,148**		**18,994**

Existing Floor Plan/Space Assignment – SECOND FLOOR

4.7 Vancouver

Location

The Vancouver Crime Lab is located at 1401 Kauffman Ave., Vancouver, WA 98660.

Site

The site area totals approximately 1.5-acres and is leased from the City of Vancouver. There were no issues noted related to the site and it appears to adequately meet the needs of the lab.

NORTH

Vancouver Site

Building - General

The Vancouver Lab is the newest facility built specifically for the WSP Forensics Division. The existing building was designed in 2005 and completed in 2007. When constructed, the east portion of the upper floor was not finished out. In 2020, this "shelled" space was completed to provide a high through-put DNA lab, specifically to assist in reducing the backlog of SAK's. At that time, the gun range on the lower floor was modified to add acoustic baffles and separation form the new occupied space above.

Configuration

The general configuration of the building is a rectangular 2-story plan. At the middle of the plan is a 2-story open/common space with primary administrative functions on the south portion of the building and the lab functions on the north. The ground floor south has all the main administrative office spaces, evidence intake and storage, and a vehicle inspection bay. The east side of the ground floor is the weapons range and an area for Firearms Lab. The balance of the ground floor north is where the MA/Chemistry Lab is located.

Administrative offices for the scientists are on the second-floor south area in an open-office configuration with some private offices, shared break room and conference rooms on the perimeter. The north half of the upper floor houses the DNA Lab with the high through-put lab on the east end of the floor.

- *Security/Zoning*
  Public access is limited to an entry vestibule off the main-floor lobby. Supported agencies use this vestibule for evidence transfer. There is a room provided with opening to both the vestibule and the evidence room for secure evidence viewing. Door access and specialty security systems were noted and generally comply with recommended standards.
- *Adjacencies*
  In general, the organization of functional areas in the lab are maximized given the small overall volume of space. The staff have made accommodations to support good evidence/workflow.
- *Contamination Control*
  Separate bio vestibules are provided at all entrances to lab spaces. The mechanical systems appear to have been designed to provide needed environmental controls and isolation between the lab spaces.
- *Collaboration/Staff Support*
  The central 2-story common space between the north and south sections of the building serves as an open break room and has tables and areas than facilitate peer-to-peer collaboration. Off the entrance lobby there is a large conference room accessible to staff. A staff break room and locker rooms are provided in the upper second floor adjacent to the open office spaces.

Architecture – Exterior Envelope

The exterior walls are faced with GWB on the interior face, are insulated per code, and are faced with a masonry exterior with accents of metal panels. Windows are a combination of aluminum storefront and curtainwall and doors are hollow metal except for public entrance doors, which are storefront aluminum. There is a roll-up steel vehicle door at the vehicle evidence bay. Roofs are single-ply thermoplastic membranes over insulated bases secured to the underlying metal deck. There appears to be adequate slope to drain. Skylights are provided to access daylight at the main interior common space.

There was no observed distress on the exterior envelope systems, which appear to be in good condition and are appropriate to the intended use.

Architecture - Interior Finishes

Most interior walls are metal stud with GWB. Some fire-rated walls and shear wall are concrete masonry. Interior doors are hollow metal frames with wood doors. Interior finishes include sheet vinyl in labs, carpet in offices, and vinyl tile in storage and support spaces. Exposed concrete is used on storage and utility spaces.

There was no observed distress on the interior finish systems, which appear to be in good condition and are appropriate to the intended use.

Structure

The building structural system was not evaluated. It is assumed that systems met codes in effect when designed and appear to meet life-safety standards of seismic performance.

HVAC Systems

A detailed analysis of the HVAC system was beyond the scope of this study. The absence of persistent or reoccurring issues with the system indicate their general suitability for their current use and service in the Crime Lab.

Plumbing Systems

There were no observed deficiencies in these systems, which appear to be in good condition and appropriate to their intended use.

Emergency eye wash and safety showers are installed at all laboratory sections. Hand wash sinks at vestibules and laboratory sinks are suitable for use and seem adequate in number and location.

Laboratory gases for helium, nitrogen, and instrument grade air are piped to the laboratory equipment from localized gas cylinders. Local vacuum pumps are provided where required.

The building has sufficient provisions for toilet rooms.

Electrical Systems

A detailed analysis of the electrical and power systems was beyond the scope of this study. Distribution panels serving labs are located outside the controlled lab environment and have good accessibility. Distribution of power in the laboratory spaces is primarily horizontal surface-mounted aluminum raceways located on walls above backsplashes. Islands have power boxes at reagent shelf standards fed from the casework below. Isolated ground outlets are identified in orange.

Emergency power is provided by an exterior diesel generator set and an automatic transfer switch that is shared by the entire building. The adequacy of the stand-by power systems and its connected loads was beyond the scope of this study.

Lighting Systems

Lighting fixtures include a combination of 1x4 fluorescent pendant fixtures with LED lamps. Lighting controls are zoned and have low-voltage control systems.

Data Systems

A central Main Data Facility room (MDF) is located on the first floor. A small Secondary IDF closet located at the head of the east stair and provides data termination and equipment for the DNA lab functions. These facilities appear adequate for current use.

Observations/Deficiencies Noted

The following operational and configuration observations/deficiencies were noted:

- *Public Access*
  The CLD provides training to other (client) law enforcement agencies and this constitutes most public visitors. There is a classroom/conference room accessible from the lobby that serves both internal and external training. This space also serves as the primary all-staff conference space. It can accommodate 24-32 students, which generally meets the current need.
- *Evidence*
  The intake is provided at the secure lobby. There is an identified evidence viewing room that can be accessed from the secure side as well as the lobby. The main evidence storage area generally accommodates current need. Evidence storage space in the lab areas is generally adequate.
- *Administrative Space*
  The main administrative space and the open office on the upper floor are generally adequate for current use.
- *Microanalysis/Trace/Chemistry Lab*
  The MA lab area and its adjacent Chemistry and supporting equipment rooms are adequate for current use.
- *DNA Lab*
  The DNA lab area and its adjacent Extraction, PCR Set-Up, and Post-Amplification labs have been adequate for current use.
- *High Through-Put DNA Lab*
  This is the newest addition to the lab and was purpose-built to support the legislative mandate to reduce the backlog of SAK's. It has been in operation for approximately one year and appears to meet its operational needs.
- *Firearms Lab*
  This lab area was designed to support four scientists and one lab tech. Owing to staffing limitations, it has not yet been placed in full operation. It retains the ability to serve the FA operations it was designed for. The adjacent weapons range has received limited use, primarily by WSP officers in recurrent weapons qualification and training. With the recent acoustic improvements, it can be operational with no adverse noise in in the DNA lab located on the floor above.

- *Crime Scene Response (CSR)*
  There is one individual supporting CSR function at this location. They are provided an office space in the ground floor office area and have a vehicle inspection bay where their CSR van can remain secure.

- *Latent Prints Lab*
  There is no Latent Prints Lab at this location.

- *Questioned Documents Lab*
  There is no QD lab function at this location.

- *Toxicology Lab*
  There is no Toxicology function at this location.

SPACE ALLOCATION

The following table provides the current allocation of space within the existing lab. As there is no proposed expansion/modification of this most recent lab, no area for future space need is provided.

VANCOUVER CRIME LAB - SPACE SUMMARY

Program/Space	*Existing Area (36 FTE)*	*Notes*
Administration/Support	**2,341**	
Lab Manager	*150*	
Lab Admin Office	*406*	2 PEC
Records/Casefile Storage	*220*	-
Conference	*346*	2 upstairs
Classroom/Conference	*797*	Open to non-secure lobby
Kitchen/Break Room	*422*	Upstairs
Property/Evidence	**1,636**	
Evidence Lobby	*60*	
Evidence Viewing	*130*	Access from lobby and secure side
Evidence Office/Processing	*524*	
Evidence Storage	*692*	High-density storage shelving Fridge/Freezers
Cold Storage	*230*	
Crime Scene Response	**853**	
Office	*123*	
Vehicle/Exam	*730*	
Firearms	**2,419**	
Firearms Lab	*810*	3 Work areas (currently no personnel assigned)
FA Exam Room	*124*	
Secure Lab Storage	*94*	
Microscope Room	*210*	
Weapons Storage	*366*	High-density shelving

FA Workshop	*94*	
Program/Space	***Existing Area (36 FTE)***	***Notes***
Weapons Range	*721*	
Materials Analysis	**4,911**	
FA/QD Supervisor Office	*120*	
MA Supervisors Office	*120*	
Open Office	*830*	Current 5 workstations in common office area
Lab Vestibule	*286*	2 each
Chemistry Lab	*1,084*	5 work areas
Bulk Lab	*210*	Currently used for storage
Instrument Room	*628*	
Secure Lab Storage	*150*	
Chem Storage	*200*	
Reagent Prep/Storage	*210*	
MA/Trace Lab	*873*	4 work areas
Trace Instrument Room	*200*	
DNA	**7,886**	
DNA Managers Office	*120*	
DNA Supervisor Office	*120*	
DNA Managers Office	*120*	
Open Office	*2,323*	Current 14 workstations in common office area
Lab Vestibules	*304*	2 each
Evidence Storage	*310*	
Reagent Prep/Storage	*200*	
Exam Room	*310*	
DNA Lab	*2,844*	14 Lab stations
Instrument Room	*650*	Includes vestibule
PCR Set-Up	*175*	
Post Amplification Lab	*410*	
High Throughput DNA	**2,082**	
Open Office	*510*	7 Scientists
Lab Vestibule	*100*	
Evidence Storage	*120*	
HTP DNA Lab	*1,140*	8 Lab stations
Post Amplification	*212*	
NET ASSIGNABLE	**22,128**	

Program/Space	*Existing Area (36 FTE)*	*Notes*
Unassigned	**14,432**	
Receiving	*482*	
Chemical Storage	*156*	
Gas Storage	*108*	
DI Water System	*106*	Currently used for storage
Clean-up Laundry & Storage	*194*	
Janitor	*166*	
Circulation	*6,869*	Includes vestibule, lobby, elevator, stairs and atrium meeting space
Toilets	*787*	Includes 1 gender neutral w/shower
Lockers	*313*	
Mechanical/Electrical/Systems	*2,174*	Includes shafts, and 2nd equipment well but not roof-top and ground-mounted equipment
Walls and Structure	*3,077*	
TOTAL GROSS	**36,560**	

Existing Floor Plan/Space Assignment – FIRST FLOOR

Existing Floor Plan/Space Assignment – SECOND FLOOR

Section 05 -PROPOSED DEVELOPMENT

Washington State Patrol Forensics Division - Facilities Master Plan

5.0 PROPOSED DEVELOPMENT

5.1 General

Several of the existing facilities supporting the WSP Forensics Division have considerable deficiencies in available functional space to support its current mission and caseload. Over the next 25 years, it is expected to experience continued growth in casework and demand for its services from supported agencies. It is crucial to the achievement of the WSP's mission that a comprehensive and logical plan for addressing noted deficiencies and accommodating this growth be developed and adopted. The recommended plan in this document has been generated to respond to the space and functional needs of the existing functional needs as well as projected caseload expansion.

The recommended plan herein should not be considered "cast-in-stone" rather it should be viewed as a framework for decision making. As the needs of the WSP and the Forensics Services Division change or if planned funding sequences change, this plan should and must be re-evaluated and modified to respond to the fluid realities of program needs, changing science, funding opportunities, and the State's extended process for capital development.

This Facilities Plan proposes to address the identified space shortfall through a number of projects including new, renovation, and expansion projects. The sequence proposed for development is generated to work within the OFM capital project funding process and assures a logical process enabling continuous operation of FSD in existing facilities while new buildings/spaces are developed.

Note, all budget estimate figures are given in 2021 funds and been escalated to the anticipated completion dates. Project cost estimates are based on historical cost average per unit or area, i.e. $/GSF. It is anticipated that each project will incorporate utility/infrastructure improvements/extensions needs to support the specific project.

5.2 Near Term Development

Near-term development is defined as projects which will be requested, planned, designed, and constructed within the next 6-10 years. The proposed project include:

North Sound Crime Lab (New)

The proposed project will replace the existing lab that is co-located with the WSP District-7 Headquarters with a new lab that will be designed to include all the forensic services provided by the WSP.

As identified in the Space Allocation portion of Section 4 (page 4-25) the new lab is proposed to total 50,846-GSF. It is assumed to be located on a newly acquired site of approx. 2.5-acres located along the I-5 corridor between Everett and Burlington.

The total project cost is estimated to be $67,226,000. (See appendix A)

It is proposed that the Site Acquisition and Predesign be funded in the 2022 supplemental budget. Using Progressive Design-Build project delivery, design and construction funding is proposed in the 2023 -2025 Biennium with construction complete in spring of 2026.

Following completion of the new lab, the existing lab space in the Division-8 Headquarters will be repurposed to support Field Operations.

The summary of the project is:

New Area:	50,846-gsf
Acquisition/Predesign Cost:	$2,000,000
Funding Source:	2022 Supplemental Budget
Anticipated Project Cost:	$66,889,000
Funding Source:	2023-2025 Capital Budget
Anticipated Completion:	Spring 2026

5.3 Mid Term Plan

Mid-term development is defined as projects which will be requested, planned, designed, and constructed within the next 8-10 years. The anticipated projects include:

Cheney Expansion (Renovation)

In the mid-term phase, space deficiencies at the Cheney lab would be addressed by a renovation/expansion project. This will include renovating the remaining shelled-space and changing the training labs into an operations space supporting the MA lab function. An addition of approximately 3,000-gsf will be provided either by expanding to the southwest or by infilling the existing courtyard between the office wings.

It is proposed that the Predesign be funded in the 2026 supplemental budget. Using Progressive Design-Build project delivery, design and construction funding is proposed in the 2027 -2029 Biennium with construction complete in spring of 2029.

The summary of the project is:

Renovated Area:	2,000-gsf
Expansion Area:	3,000-gsf
Anticipated Project Cost:	$7,000,000
Funding Source:	2027-2029 Capital Budget
Anticipated Completion:	Fall 2029

5.5 Far-Term Plan

Far-term development is defined as projects which will be requested, planned, designed, and constructed within the next 10+ years. The anticipated project is:

South Sound Crime Lab (New)

The proposed project will replace the existing Olympia, Tacoma, and Seattle labs with a new lab that will be expanded to include all the forensic services provided by the WSP. As identified in the Space Allocation portion of Section 4 for Seattle, Olympia, and Tacoma, the new lab is proposed to total 95,000-GSF. It is planned to be located on vacant land that the WSP currently owns in the Spring Valley area of Federal Way.

The total project cost is estimated to be $123,900,000. (See appendix A)

It is proposed that the Predesign be funded in the 2028 supplemental budget. Using Progressive Design-Build project delivery, design and construction funding is proposed in the 2029 -2031 Biennium with construction complete in spring of 2032.

Following completion of the new lab, the existing lab space in Tacoma will be repurposed to support Field Operations and the leased space in Seattle and Olympia will be vacated.

The summary of the project is:

New Area:	95,000-gsf
Predesign Cost:	$750,000
Funding Source:	2028 Supplemental Budget
Anticipated Project Cost:	$123,150,000
Funding Source:	2029-2031 Capital Budget
Anticipated Completion:	Spring 2032

Section 06 -DEVELOPMENT STANDARDS

Washington State Patrol Forensics Division - Facilities Master Plan

6.0 – DEVELOPMENT GUIDELINES

It is assumed that the local jurisdiction will have development standards that any new project will be subject to. All planned development is subject to review and approval by the local code/permitting authorities for compliance with codes.

Future projects at for the WSP Forensics Division must meet a high level of quality and respond to context, built form, structure, and regulatory requirements. In general, the standards developed by the Department of Justice NIST Report "Handbook for Forensic Laboratory Facility, Planning, Design, Construction" should form the basis of standards for new Crime Lab facilities. Following are some general guideline highlights that should be considered for new projects.

6.1 Site Design

It is recommended that any site considered to house a new forensics laboratory contain at least 2.5 acres of relatively flat developable area,

Recommendations

1. Access: Provide access from at least two directions to ensure access to the site despite traffic conditions, street maintenance work, acts of sabotage, or other unforeseen site disruptions
2. Utilities: Ensure adequate access to utilities including water, sewer, power, data/communications, stormwater control capability.
3. Lighting: The site lighting should be designed to enhance security and discourage vandalism and unauthorized entry. Lighting comparable to that of a college campus offering night classes might serve as a guideline.
4. Parking: Provide 3 levels of parking security:

   Level 1: Provide a small visitor parking located near the entrance to the building allowing entry and departure without security barriers.

   Level 2: Fenced area for use by persons having business at the facility. For example, shipping and receiving, biological and toxic waste pickup, dumpster replacement, and evidence delivery. The area should be gated, and the gate may be left open during business hours and locked after hours. Access might be through the level 1 parking area.

   Level 3: Special parking area for CSR vehicles secured 24 h, surrounded by a security fence, and accessible by use of a proximity or card key device.

6.2 Landscape

Landscaping should be designed to enhance site security by preventing potential vandals, burglars, and saboteurs from hiding in the landscaping until after dark.

Recommendations

1. Create interest using a varied palette of native, drought-tolerant plant materials.
2. Respond to major site circulation for current and future conditions.
3. Provide a low-maintenance landscape that reduces water use.

6.3 Architecture

One of the main architectural challenges of designing a forensics lab building is to develop a building that reflects the importance of the program and the agency it serves, creating openness and daylight spaces for the occupants while while maintaining the security and functional needs.

Recommendations

1. Structural: The International Building Code defines an essential facility as "buildings and other structures that are intended to remain operational in the event of extreme environmental loading from flood, wind, snow or earthquakes". The crime lab should be designed as an Occupancy Class IV – Essential Facility.
2. Exterior Walls: Exterior wall materials should be a high-performance exterior wall system such as masonry, concrete, glass curtain wall, and metal panels systems. The exterior wall should have continuous insulation or similar systems to provide high resistance to thermal transfer. They shall be durable, long-lasting, and suitable for an important public facility.
3. Roofing: A new low-slope membrane and insulation system should be provided. To the maximum extent possible, low-slope photovoltaic panels should be located above the membrane.
4. Interior Walls: Interior non-bearing walls will typically be metal stud with gypsum wallboard. Wall at the FA Range should also be bullet-resistant and
5. Interior Openings: Frames for doors and relights will be hollow metal. Doors will be either hollow metal or solid core wood depending on location.
6. Interior Finishes:
    a. Laboratory floors: Chemical-resistant sheet vinyl or vinyl tiles with welded seams.
    b. Laboratory walls: Epoxy in all spaces considered highly biologically or chemically hazardous, such as examination rooms, bulk drug analysis, and bulk chemical storage. Semi-gloss latex enamel in all other spaces.
    c. Laboratory ceilings: Epoxy in all spaces considered highly biologically or chemically hazardous, such as examination rooms, bulk drug analysis, and bulk chemical storage. Suspended acoustical in all other spaces.
    d. Nonlaboratory spaces.
    e. Acceptable interior finish standards for offices and nonlaboratory support
7. Laboratory casework.
    a. Standard laboratory casework with utility access space behind base cabinets.
    b. Steel or wood is preferred, plastic laminate is acceptable.
    c. Maximize use of flexible laboratory casework systems.
    d. Epoxy countertops in labs, chemical-resistant plastic laminate or composite resin at other spaces.
8. Acoustics:
    a. Assembly spaces, conference rooms, offices, and toilet rooms will be sound insulated to a minimum STC = 45.

b. Primary acoustical attenuation in the building will be provided by acoustical ceilings and carpeting. Noise transmission in open areas will be mitigated through wall-mounted or overhead acoustical panels. Special attention should be made for the noise from fume hoods in the lab spaces and from the weapons range in the FA section.

9. Physical Security: Physical security of the lab is essential to maintaining proper control of evidence. Evidence lockers, safes and locking cabinets are needed throughout the lab.

10. Physical Isolation: Ensure that all lab spaces have bio-vestibules with negative air pressure and cleaning stations to prevent cross contamination. Locate between "clean" and "dirty" spaces, for example, between main circulation corridor and entrance to a laboratory section that potentially contains hazardous airborne contaminants. Provides an interlock between clean and dirty spaces with air handled through differential pressurization to prevent exfiltration of contaminated air.

11. Administrative Space: A significant amount of the forensic scientist's responsibilities include nonlaboratory tasks such as data analysis, report writing, court testimony preparation, and other administrative responsibilities. The design should provide the analyst with an administrative work area, away from the hazards of the laboratory, where these tasks can be conducted in an efficient and safe environment. Supervisors' offices, case review areas, and space for files can also be included in this environment. With the exception of the supervisors' offices, which shall be private offices, all other spaces in the administrative work area can be designed as open office systems workstations. Some analysts, such as document and latent print examiners, require additional administrative work space since a significant amount of their technical examinations can occur outside of the laboratory environment

6.4 Supporting Systems

To meet all the standards for accreditation, it is important to plan mechanical and electrical systems in the lab that can achieve the highest performance standards are required for cleanliness, temperature, humidity, and vibration controls to create an environment suitable for forensic science.

Recommendations

1. Isolate air systems: Mitochondrial DNA room(s), Firing range. PCR Amplification, Chemistry & Toxicology
2. Consider HEPA filtered exhaust
3. Provide Differential pressure of adjacent spaces and the need for positive and negative pressure in various spaces.
4. Supplemental cooling in instrument rooms and other spaces with heat-generating equipment (freezers etc.)
5. Evidence drying room exhaust may need special handling for putrid items.
6. Emergency shower and eyewashes and floor drains. In laboratory spaces.
7. Caustic (acid/alkali) waste systems, i.e., neutralization/hazardous waste systems.
8. Fume hood and biological hood plumbing utilities.

9. Water treatment systems
    a. Recirculating deionized water.
    b. Point-of-use type 1 water polisher.
10. Laboratory gas types: Hydrogen, nitrogen, helium, air, argon.

    Consider a Manifolded instrument gas systems with central instrument gas distribution systems. Include laboratory compressed air.
11. Consider laboratory vacuum systems
12. Recommend emergency power and lighting for the following spaces:
    a. Entire evidence section.
    b. All refrigerators and freezers, including walk-in units.
    c. Photography darkroom(s). Entire security section, including electronic security systems and telephones.
    d. X-ray processing room(s)
    e. Special lighting in addition to code-mandated emergency exit lighting
13. Central UPS systems for all computer-driven systems and equipment including, laboratory instrumentation, Automated Fingerprint Identification System (AFIS), Combined DNA Identification System (CODIS), Laboratory Information Management System (LIMS), Drugfire, Integrated Ballistic Imaging System (IBIS), and LABNET

6.5 Sustainability

Any new Crime Lab must be designed, as a minimum, to meet Leadership in Energy and Environmental Design (LEED) Silver standards. Strategies for implementation include an abundant use of controlled natural light, preference for locally sourced materials such as concrete block and brick, native and drought-tolerant plantings, robust well-insulated and well-sealed exterior wall and roof assemblies, and highly efficient mechanical and lighting systems.

In addition, the project should strive to achieve the goals of Net-Zero Energy, as a minimum being designed to be “Net Zero-Ready”. WSP intends to target a low Energy Use Intensity (EUI) over the life of the building. Further, projects should be designed to meet the best practices to reduce greenhouse gas emissions.

APPENDIX A - BUDGET ESTIMATES

Washington State Patrol Forensics Division - Facilities Master Plan

NORTH SOUND CRIME LAB

C-100 Budget Estimate

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated July 2019

Agency	Washington State Patrol
Project Name	**North Sound Consolidated Crime Lab**
OFM Project Number	

Contact Information	
Name	Brian Bottoms
Phone Number	(360) 704-5402
Email	brian.bottoms@wsp.wa.gov

Statistics			
Gross Square Feet	50,846	MACC per Square Foot	$713
Usable Square Feet	34,640	Escalated MACC per Square Foot	$799
Space Efficiency	68.1%	A/E Fee Class	A
Construction Type	Laboratories (Research)	A/E Fee Percentage	7.58%
Remodel	No	Projected Life of Asset (Years)	50
Additional Project Details			
Alternative Public Works Project	Yes	Art Requirement Applies	Yes
Inflation Rate	3.18%	Higher Ed Institution	No
Sales Tax Rate %	10.10%	Location Used for Tax Rate	Marysville, WA
Contingency Rate	5%		
Base Month	June-21		
Project Administered By	DES		

Schedule			
Predesign Start	June-22	Predesign End	July-23
Design Start	July-23	Design End	April-24
Construction Start	May-24	Construction End	January-26
Construction Duration	20 Months		

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Project Cost Estimate

Total Project	**$59,996,622**	Total Project Escalated	**$66,888,579**
		Rounded Escalated Total	**$66,889,000**

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated July 2019

Agency	Washington State Patrol
Project Name	**North Sound Consolidated Crime Lab**
OFM Project Number	

Cost Estimate Summary

Acquisition			
Acquisition Subtotal	**$1,450,000**	**Acquisition Subtotal Escalated**	**$1,450,000**

Consultant Services			
Predesign Services	$525,000		
A/E Basic Design Services	$1,991,860		
Extra Services	$1,529,135		
Other Services	$1,544,894		
Design Services Contingency	$279,544		
Consultant Services Subtotal	**$5,870,433**	**Consultant Services Subtotal Escalated**	**$6,415,006**

Construction			
GC/CM Risk Contingency	$1,813,515		
GC/CM or D/B Costs	$4,045,056		
Construction Contingencies	$1,813,515	Construction Contingencies Escalated	$2,039,661
Maximum Allowable Construction Cost (MACC)	$36,270,306	Maximum Allowable Construction Cost (MACC) Escalated	$40,627,344
Sales Tax	$4,438,182	Sales Tax Escalated	$4,974,871
Construction Subtotal	**$48,380,575**	**Construction Subtotal Escalated**	**$54,231,012**

Equipment			
Equipment	$3,117,600		
Sales Tax	$314,878		
Non-Taxable Items	$0		
Equipment Subtotal	**$3,432,478**	**Equipment Subtotal Escalated**	**$3,860,508**

Artwork			
Artwork Subtotal	**$203,137**	**Artwork Subtotal Escalated**	**$203,137**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$200,000**	**Project Administation Subtotal Escalated**	**$224,940**

Other Costs			
Other Costs Subtotal	**$460,000**	**Other Costs Subtotal Escalated**	**$503,976**

Project Cost Estimate			
Total Project	**$59,996,622**	Total Project Escalated	**$66,888,579**
		Rounded Escalated Total	**$66,889,000**

Cost Estimate Details

Acquisition Costs				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease	$1,200,000			
Appraisal and Closing				
Right of Way				
Demolition				
Pre-Site Development	$250,000			
Other				
Insert Row Here				
ACQUISITION TOTAL	**$1,450,000**	**NA**	**$1,450,000**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis	$75,000			
Environmental Analysis	$100,000			
Predesign Study	$350,000			
Other				
Insert Row Here				
Sub TOTAL	**$525,000**	**1.0674**	**$560,385**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$1,991,860			69% of A/E Basic Services
Insert Row Here				
Sub TOTAL	**$1,991,860**	**1.0800**	**$2,151,209**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$200,000			
Geotechnical Investigation	$40,000			
Commissioning	$180,000			
Site Survey	$35,000			
Testing	$90,000			
LEED Services	$160,000			
Voice/Data Consultant	$120,000			
Value Engineering	$50,000			
Constructability Review	$50,000			
Environmental Mitigation (EIS)	$0			
Landscape Consultant	$120,000			
Acoustic Engineer	$50,000			
Elevator Consultant	$45,000			
Independant Cost Estimating	$10,000			
Interior Signage & Wayfinding	$20,000			
FF&E Assistance/Coordination	$44,135			
Art Coordination	$20,000			
Parking/Transportation Consultant	$45,000			
Laboratory Consulting	$250,000			
Insert Row Here				
Sub TOTAL	**$1,529,135**	**1.0800**	**$1,651,466**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$894,894			31% of A/E Basic Services
HVAC Balancing	$200,000			
Staffing				
Extended CA Support	$450,000			
Insert Row Here				
Sub TOTAL	**$1,544,894**	**1.1247**	**$1,737,542**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$279,544			
Other				
Insert Row Here				
Sub TOTAL	**$279,544**	**1.1247**	**$314,404**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$5,870,433**		**$6,415,006**	

Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$1,000,000			
G20 - Site Improvements	$2,000,000			
G30 - Site Mechanical Utilities	$750,000			
G40 - Site Electrical Utilities	$750,000			
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	**$4,500,000**	**1.0956**	**$4,930,200**	
2) Related Project Costs				
Offsite Improvements	$350,000			
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention	$850,000			
Other				
Insert Row Here				
Sub TOTAL	**$1,200,000**	**1.0956**	**$1,314,720**	
3) Facility Construction				
A10 - Foundations	$1,176,920			
A20 - Basement Construction	$250,000			
B10 - Superstructure	$2,648,070			
B20 - Exterior Closure	$3,530,760			
B30 - Roofing	$1,294,612			
C10 - Interior Construction	$4,413,450			
C20 - Stairs	$235,384			
C30 - Interior Finishes	$1,941,918			
D10 - Conveying	$250,000			
D20 - Plumbing Systems	$1,647,688			
D30 - HVAC Systems	$5,884,600			
D40 - Fire Protection Systems	$353,076			
D50 - Electrical Systems	$5,001,910			
F10 - Special Construction	$353,076			
F20 - Selective Demolition	$0			
General Conditions	See Below			
Built-in Furnishings	$706,152			
Add for Essential Facilities & Security	$882,690			
Sub TOTAL	**$30,570,306**	**1.1247**	**$34,382,424**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$36,270,306**		**$40,627,344**	

5) GCCM Risk Contingency				
GCCM Risk Contingency	$1,813,515			
Insert Row Here				
Sub TOTAL	**$1,813,515**	**1.1247**	**$2,039,661**	
6) GCCM or Design Build Costs				
GCCM Fee	$975,056			
Bid General Conditions	$2,720,000			
GCCM Preconstruction Services	$350,000			
Other				
Insert Row Here				
Sub TOTAL	**$4,045,056**	**1.1247**	**$4,549,475**	
7) Construction Contingency				
Allowance for Change Orders	$1,813,515			
Other				
Insert Row Here				
Sub TOTAL	**$1,813,515**	**1.1247**	**$2,039,661**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1247**	**$0**	
Sales Tax				
Sub TOTAL	**$4,438,182**		**$4,974,871**	
CONSTRUCTION CONTRACTS TOTAL	**$48,380,575**		**$54,231,012**	

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Cost Estimate Details

Equipment				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
E10 - Equipment	$2,078,400			
E20 - Furnishings	$1,039,200			
F10 - Special Construction				
Other				
Insert Row Here				
Sub TOTAL	**$3,117,600**	**1.1247**	**$3,506,365**	
1) Non Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.1247**	**$0**	
Sales Tax				
Sub TOTAL	**$314,878**		**$354,143**	
EQUIPMENT TOTAL	**$3,432,478**		**$3,860,508**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Project Artwork	$203,137				0.5% of Escalated MACC for new construction
Higher Ed Artwork	$0				0.5% of Escalated MACC for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$203,137**		**NA**	**$203,137**	

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Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Agency Project Management	$0				
Additional Services					
Agency Capital Personnel	$200,000				
Insert Row Here					
PROJECT MANAGEMENT TOTAL	**$200,000**		**1.1247**	**$224,940**	

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Cost Estimate Details

Other Costs				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs				
Hazardous Material Remediation/Removal	$200,000			
Historic and Archeological Mitigation	$80,000			
Permits	$180,000			
Insert Row Here				
OTHER COSTS TOTAL	**$460,000**	**1.0956**	**$503,976**	

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CHENEY CRIME LAB

C-100 Budget Estimate

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2021

Agency	Washington State Patrol	
Project Name	**Cheney Lab Expansion**	
OFM Project Number		

Contact Information		
Name	Brian Bottoms	
Phone Number	(360) 704-5402	
Email	brian.bottoms@wsp.wa.gov	

Statistics			
Gross Square Feet	5,000	MACC per Square Foot	$518
Usable Square Feet	3,500	Escalated MACC per Square Foot	$682
Space Efficiency	70.0%	A/E Fee Class	A
Construction Type	Laboratories (Research)	A/E Fee Percentage	13.78%
Remodel	Yes	Projected Life of Asset (Years)	30
Additional Project Details			
Alternative Public Works Project	No	Art Requirement Applies	No
Inflation Rate	3.28%	Higher Ed Institution	No
Sales Tax Rate %	6.50%	Location Used for Tax Rate	Cheney
Contingency Rate	10%		
Base Month	August-20	OFM UFI# (from FPMT, if available)	
Project Administered By	DES		

Schedule			
Predesign Start	June-27	Predesign End	December-27
Design Start	December-27	Design End	September-28
Construction Start	September-28	Construction End	September-29
Construction Duration	12 Months		

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Project Cost Estimate

Total Project	**$5,339,070**	Total Project Escalated	**$6,999,521**
		Rounded Escalated Total	**$7,000,000**

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2021

Agency	Washington State Patrol
Project Name	**Cheney Lab Expansion**
OFM Project Number	

Cost Estimate Summary

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

Consultant Services			
Predesign Services	$80,000		
A/E Basic Design Services	$270,780		
Extra Services	$548,000		
Other Services	$301,655		
Design Services Contingency	$120,043		
Consultant Services Subtotal	**$1,320,478**	**Consultant Services Subtotal Escalated**	**$1,708,058**

Construction			
Construction Contingencies	$258,896	Construction Contingencies Escalated	$341,614
Maximum Allowable Construction Cost (MACC)	$2,588,960	Maximum Allowable Construction Cost (MACC) Escalated	$3,408,115
Sales Tax	$185,111	Sales Tax Escalated	$243,733
Construction Subtotal	**$3,032,967**	**Construction Subtotal Escalated**	**$3,993,462**

Equipment			
Equipment	$625,000		
Sales Tax	$40,625		
Non-Taxable Items	$0		
Equipment Subtotal	**$665,625**	**Equipment Subtotal Escalated**	**$878,293**

Artwork			
Artwork Subtotal	**$0**	**Artwork Subtotal Escalated**	**$0**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$200,000		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$200,000**	**Project Administation Subtotal Escalated**	**$263,900**

Other Costs			
Other Costs Subtotal	**$120,000**	**Other Costs Subtotal Escalated**	**$155,808**

Project Cost Estimate			
Total Project	**$5,339,070**	Total Project Escalated	**$6,999,521**
		Rounded Escalated Total	**$7,000,000**

Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study	$80,000			
Other				
Insert Row Here				
Sub TOTAL	**$80,000**	**1.2672**	**$101,376**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$270,780			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$270,780**	**1.2827**	**$347,330**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$50,000			
Geotechnical Investigation	$17,000			
Commissioning	$80,000			
Site Survey	$16,000			
Testing	$75,000			
LEED Services	$60,000			
Voice/Data Consultant	$40,000			
Value Engineering	$40,000			
Constructability Review	$40,000			
Environmental Mitigation (EIS)	$0			
Landscape Consultant	$30,000			
Acoustic Engineer	$15,000			
Lab Consultant	$60,000			
Independant Cost Estimating	$25,000			
Insert Row Here				
Sub TOTAL	**$548,000**	**1.2827**	**$702,920**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$121,655			31% of A/E Basic Services
HVAC Balancing				
Staffing				
Other				
Extended CA Support	$180,000			
Sub TOTAL	**$301,655**	**1.3195**	**$398,034**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$120,043			
Other				
Insert Row Here				
Sub TOTAL	**$120,043**	**1.3195**	**$158,398**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$1,320,478**		**$1,708,058**	

Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$200,000			
G20 - Site Improvements	$180,000			
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities				
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	**$380,000**	**1.2984**	**$493,392**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.2984**	**$0**	
3) Facility Construction				
A10 - Foundations	$48,000			
A20 - Basement Construction				
B10 - Superstructure	$162,000			
B20 - Exterior Closure	$174,000			
B30 - Roofing	$54,000			
C10 - Interior Construction	$296,000			
C20 - Stairs				
C30 - Interior Finishes	$260,000			
D10 - Conveying				
D20 - Plumbing Systems	$54,000			
D30 - HVAC Systems	$420,000			
D40 - Fire Protection Systems	$24,000			
D50 - Electrical Systems	$380,000			
F10 - Special Construction				
F20 - Selective Demolition				
General Conditions	$336,960			
Other				
Insert Row Here				
Sub TOTAL	**$2,208,960**	**1.3195**	**$2,914,723**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$2,588,960**		**$3,408,115**	

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7) Construction Contingency				
Allowance for Change Orders	$258,896			
Other				
Insert Row Here				
Sub TOTAL	**$258,896**	**1.3195**	**$341,614**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.3195**	**$0**	
Sales Tax				
Sub TOTAL	**$185,111**		**$243,733**	
CONSTRUCTION CONTRACTS TOTAL	**$3,032,967**		**$3,993,462**	

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Cost Estimate Details

Equipment				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
E10 - Equipment	$450,000			
E20 - Furnishings	$175,000			
F10 - Special Construction				
Other				
Insert Row Here				
Sub TOTAL	**$625,000**	**1.3195**	**$824,688**	
1) Non Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.3195**	**$0**	
Sales Tax				
Sub TOTAL	**$40,625**		**$53,605**	
EQUIPMENT TOTAL	**$665,625**		**$878,293**	

Green cells must be filled in by user

Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Agency Project Management	$0				
Additional Services	$200,000				
Other					
Insert Row Here					
PROJECT MANAGEMENT TOTAL	**$200,000**		**1.3195**	**$263,900**	

Green cells must be filled in by user

Cost Estimate Details

Other Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs					
Hazardous Material Remediation/Removal					
Historic and Archeological Mitigation					
Permits	$120,000				
Insert Row Here					
OTHER COSTS TOTAL	**$120,000**		**1.2984**	**$155,808**	

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SOUTH SOUND CRIME LAB

C-100 Budget Estimate

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated July 2019

Agency	Washington State Patrol	
Project Name	**South Sound Consolidated Crime Lab**	
OFM Project Number		

Contact Information		
Name	Brian Bottoms	
Phone Number	(360) 704-5402	
Email	brian.bottoms@wsp.wa.gov	

Statistics			
Gross Square Feet	95,000	MACC per Square Foot	$646
Usable Square Feet	61,000	Escalated MACC per Square Foot	$836
Space Efficiency	64.2%	A/E Fee Class	A
Construction Type	Laboratories (Research)	A/E Fee Percentage	6.87%
Remodel	No	Projected Life of Asset (Years)	50
Additional Project Details			
Alternative Public Works Project	Yes	Art Requirement Applies	Yes
Inflation Rate	3.18%	Higher Ed Institution	No
Sales Tax Rate %	10.10%	Location Used for Tax Rate	Federal Way, WA
Contingency Rate	5%		
Base Month	June-22		
Project Administered By	DES		

Schedule			
Predesign Start	July-28	Predesign End	December-28
Design Start	July-29	Design End	July-30
Construction Start	July-30	Construction End	December-30
Construction Duration	5 Months		

Green cells must be filled in by user

Project Cost Estimate

Total Project	**$95,916,392**	Total Project Escalated	**$123,900,097**
		Rounded Escalated Total	**$123,900,000**

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated July 2019

Agency	Washington State Patrol
Project Name	**South Sound Consolidated Crime Lab**
OFM Project Number	

Cost Estimate Summary

Acquisition			
Acquisition Subtotal	**$250,000**	**Acquisition Subtotal Escalated**	**$250,000**

Consultant Services			
Predesign Services	$600,000		
A/E Basic Design Services	$3,053,583		
Extra Services	$1,831,250		
Other Services	$2,111,899		
Design Services Contingency	$379,837		
Consultant Services Subtotal	**$7,976,569**	**Consultant Services Subtotal Escalated**	**$10,174,284**

Construction			
GC/CM Risk Contingency	$3,067,500		
GC/CM or D/B Costs	$5,446,931		
Construction Contingencies	$3,067,500	Construction Contingencies Escalated	$3,977,321
Maximum Allowable Construction Cost (MACC)	$61,350,000	Maximum Allowable Construction Cost (MACC) Escalated	$79,455,460
Sales Tax	$7,366,125	Sales Tax Escalated	$9,541,732
Construction Subtotal	**$80,298,056**	**Construction Subtotal Escalated**	**$104,014,325**

Equipment			
Equipment	$5,490,000		
Sales Tax	$554,490		
Non-Taxable Items	$0		
Equipment Subtotal	**$6,044,490**	**Equipment Subtotal Escalated**	**$7,837,286**

Artwork			
Artwork Subtotal	**$397,277**	**Artwork Subtotal Escalated**	**$397,277**

Agency Project Administration			
Agency Project Administration Subtotal	$0		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$380,000**	**Project Administation Subtotal Escalated**	**$492,708**

Other Costs			
Other Costs Subtotal	**$570,000**	**Other Costs Subtotal Escalated**	**$734,217**

Project Cost Estimate			
Total Project	**$95,916,392**	Total Project Escalated	**$123,900,097**
		Rounded Escalated Total	**$123,900,000**

Cost Estimate Details

Acquisition Costs				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease				
Appraisal and Closing				
Right of Way				
Demolition				
Pre-Site Development	$250,000			
Other				
Insert Row Here				
ACQUISITION TOTAL	**$250,000**	**NA**	**$250,000**	

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Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis	$100,000			
Environmental Analysis	$150,000			
Predesign Study	$350,000			
Other				
Insert Row Here				
Sub TOTAL	**$600,000**	**1.2484**	**$749,040**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$3,053,583			69% of A/E Basic Services
Insert Row Here				
Sub TOTAL	**$3,053,583**	**1.2681**	**$3,872,249**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)	$250,000			
Geotechnical Investigation	$40,000			
Commissioning	$240,000			
Site Survey	$35,000			
Testing	$110,000			
LEED Services	$160,000			
Voice/Data Consultant	$120,000			
Value Engineering	$50,000			
Constructability Review	$50,000			
Environmental Mitigation (EIS)	$0			
Landscape Consultant	$120,000			
Acoustic Engineer	$50,000			
Elevator Consultant	$60,000			
Independant Cost Estimating	$120,000			
Interior Signage & Wayfinding	$30,000			
FF&E Assistance/Coordination	$71,250			
Art Coordination	$25,000			
Parking/Transportation Consultant	$50,000			
Laboratory Consulting	$250,000			
Insert Row Here				
Sub TOTAL	**$1,831,250**	**1.2681**	**$2,322,209**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$1,371,899			31% of A/E Basic Services
HVAC Balancing	$240,000			
Staffing				
Extended CA Support	$500,000			
Insert Row Here				
Sub TOTAL	**$2,111,899**	**1.2966**	**$2,738,289**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$379,837			
Other				
Insert Row Here				
Sub TOTAL	**$379,837**	**1.2966**	**$492,497**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$7,976,569**		**$10,174,284**	

Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation	$2,000,000			
G20 - Site Improvements	$4,000,000			
G30 - Site Mechanical Utilities	$1,500,000			
G40 - Site Electrical Utilities	$1,500,000			
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	**$9,000,000**	**1.2881**	**$11,592,900**	
2) Related Project Costs				
Offsite Improvements	$500,000			
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention	$1,200,000			
Other				
Insert Row Here				
Sub TOTAL	**$1,700,000**	**1.2881**	**$2,189,770**	
3) Facility Construction				
A10 - Foundations	$1,900,000			
A20 - Basement Construction	$500,000			
B10 - Superstructure	$4,275,000			
B20 - Exterior Closure	$5,700,000			
B30 - Roofing	$2,660,000			
C10 - Interior Construction	$7,125,000			
C20 - Stairs	$380,000			
C30 - Interior Finishes	$3,610,000			
D10 - Conveying	$750,000			
D20 - Plumbing Systems	$2,660,000			
D30 - HVAC Systems	$9,500,000			
D40 - Fire Protection Systems	$570,000			
D50 - Electrical Systems	$8,075,000			
F10 - Special Construction	$760,000			
F20 - Selective Demolition	$0			
General Conditions	See Below			
Built-in Furnishings	$760,000			
Add for Essential Facilities & Security	$1,425,000			
Sub TOTAL	**$50,650,000**	**1.2966**	**$65,672,790**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$61,350,000**		**$79,455,460**	

5) GCCM Risk Contingency				
GCCM Risk Contingency	$3,067,500			
Insert Row Here				
Sub TOTAL	**$3,067,500**	**1.2966**	**$3,977,321**	
6) GCCM or Design Build Costs				
GCCM Fee	$1,906,931			
Bid General Conditions	$3,040,000			
GCCM Preconstruction Services	$500,000			
Other				
Insert Row Here				
Sub TOTAL	**$5,446,931**	**1.2966**	**$7,062,491**	
7) Construction Contingency				
Allowance for Change Orders	$3,067,500			
Other				
Insert Row Here				
Sub TOTAL	**$3,067,500**	**1.2966**	**$3,977,321**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.2966**	**$0**	
Sales Tax				
Sub TOTAL	**$7,366,125**		**$9,541,732**	
CONSTRUCTION CONTRACTS TOTAL	**$80,298,056**		**$104,014,325**	

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Cost Estimate Details

Equipment				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
E10 - Equipment	$3,660,000			
E20 - Furnishings	$1,830,000			
F10 - Special Construction				
Other				
Insert Row Here				
Sub TOTAL	**$5,490,000**	**1.2966**	**$7,118,334**	
1) Non Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.2966**	**$0**	
Sales Tax				
Sub TOTAL	**$554,490**		**$718,952**	
EQUIPMENT TOTAL	**$6,044,490**		**$7,837,286**	

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Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Project Artwork	$397,277				0.5% of Escalated MACC for new construction
Higher Ed Artwork	$0				0.5% of Escalated MACC for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$397,277**		**NA**	**$397,277**	

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Cost Estimate Details

Project Management					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Agency Project Management	$0				
Additional Services					
Agency Capital Personnel	$380,000				
Insert Row Here					
PROJECT MANAGEMENT TOTAL	**$380,000**		**1.2966**	**$492,708**	

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Cost Estimate Details

Other Costs				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs				
Hazardous Material Remediation/Removal	$250,000			
Historic and Archeological Mitigation	$80,000			
Permits	$240,000			
Insert Row Here				
OTHER COSTS TOTAL	**$570,000**	**1.2881**	**$734,217**	

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