



# City of Bainbridge Island & Bainbridge Island Fire Department

Facilities Assessment

March 05, 2014

MACKENZIE.

# Introduction

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- Area Serviced: 27.78 square miles
- Population Serviced: 23,380
- Fire Department Operations:
  - 3 Fire Stations
  - 17 Apparatus + 1 Trailer
  - 38 Full-Time Employee / 40 Volunteers
  - Total Responses per year: + 2,600
- Police Department Operations:
  - 1 Police Facility
  - 25 Employees
  - Includes overseeing security on the Bainbridge Island Ferry (18,000+ daily passengers)

# Bainbridge Island Aerial



Courtesy of "Aerial Source Data USDA - NAIP 2013 Imagery"

# Schedule

March

2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5 <i>Public Outreach Meeting #1</i>	6 <i>Programming</i>	7	8
9	10 <i>Programming</i>	11 <i>Facility Precedent Tour</i>	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31 <i>Concept Design</i>					

April

2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
		<i>Concept Design</i>				
6	7	8	9	10	11	12
	<i>Concept Design</i>					
13	14	15	16 <i>Public Outreach Meeting #2</i>	17	18	19
	<i>Concept Design</i>			<i>Concept Design</i>		
20	21	22	23	24	25	26
	<i>Concept Design</i>					
27	28	29	30			
	<i>Concept Design</i>					

# Schedule

May

2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
				Concept Design -		
4	5	6	7	8	9	10
	Concept Design					
11	12	13	14	15	16	17
	Concept Design		Public Outreach Meeting #3	Cost Estimate		
18	19	20	21	22	23	24
	Cost Estimate					
25	26	27	28	29	30	31
	Memorial Day					
	Cost Estimate					

June

2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
	Cost Estimate		Completed Work			
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

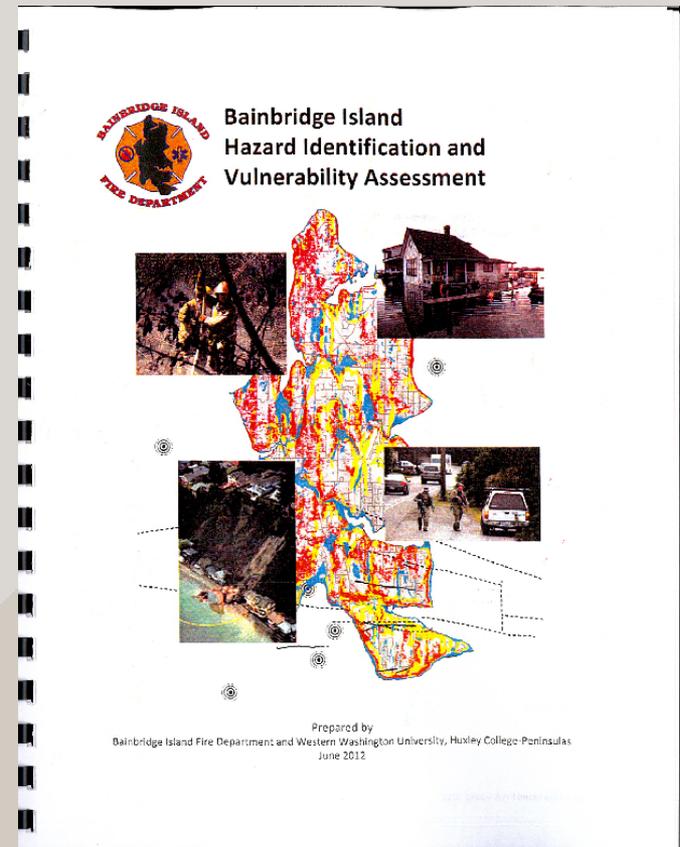
# Previous Studies/Reports

## Bainbridge Island Hazard & Identification Vulnerability Assessment

- Seismic:  
BI has multiple seismic faults below it. High likelihood of large seismic events with all 4 buildings at risk.
- Tsunami:  
Study shows that Police station is potentially vulnerable to tsunami.

## Building Inspection Reports

## Existing Plans



# Station 21



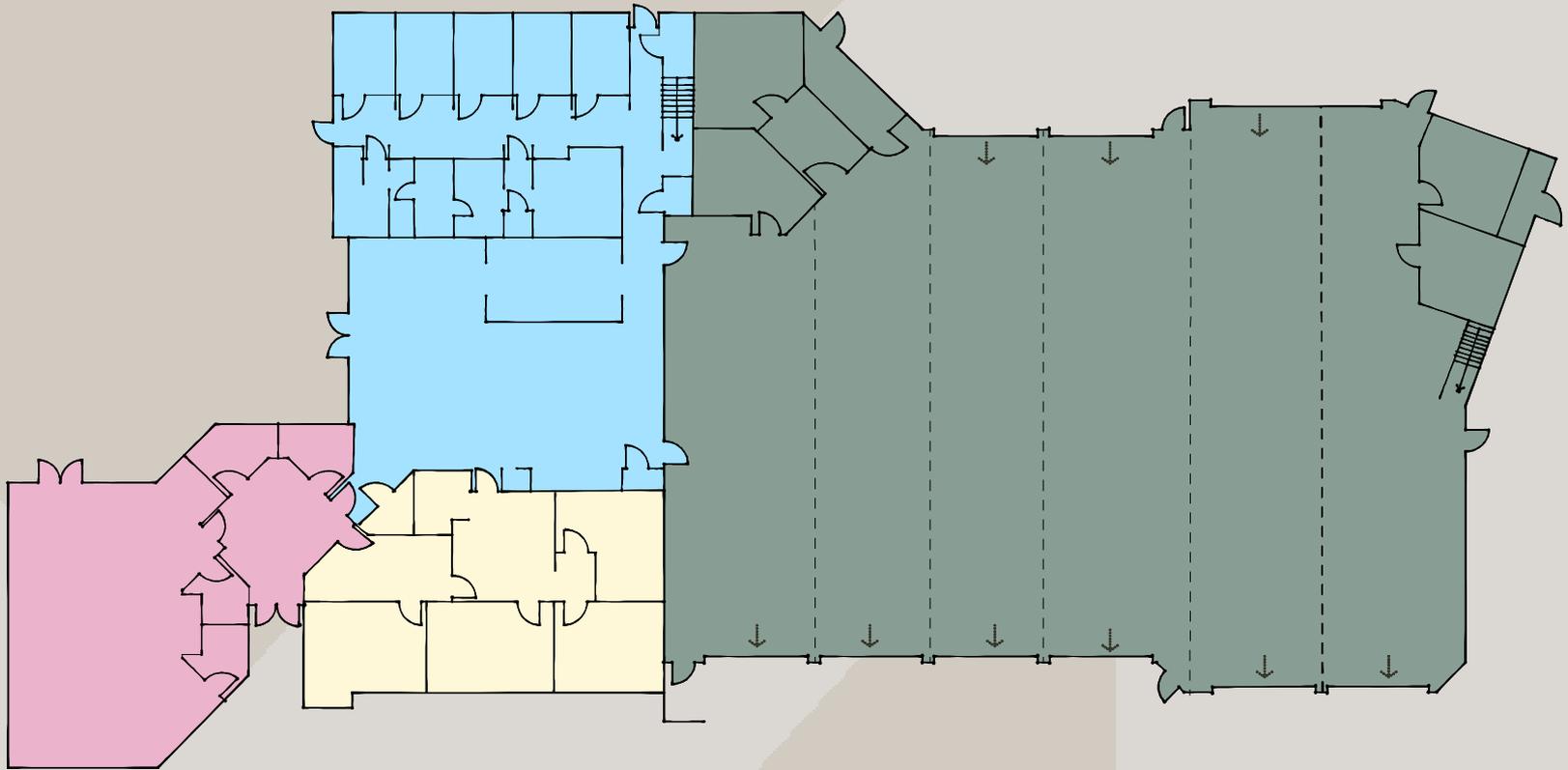
# Station 21 – Existing Site



## Station Facts

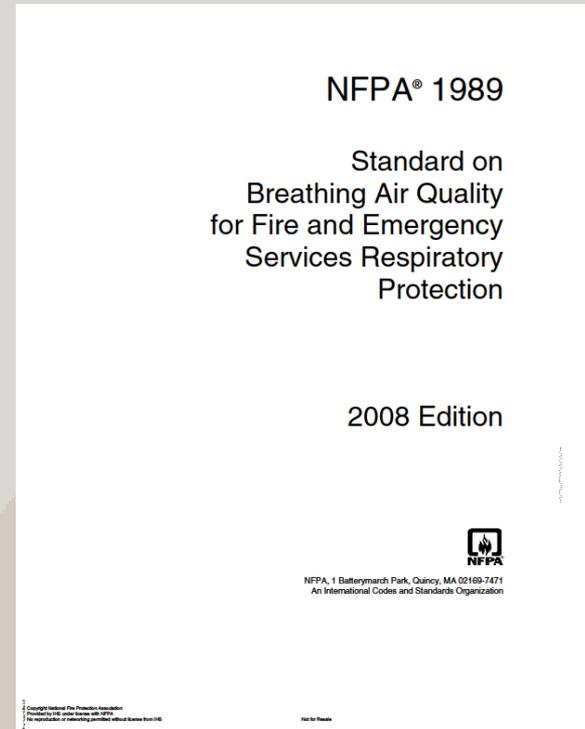
- 8895 Madison Avenue
- Year Built/Remodel: 1979/2002
- Fire Department Headquarters
- Square Footage: 14,474 SF
- Staffing: Career/Volunteer
- Construction Type: Wood Structure / Cedar Siding
- Site Size: (2) tax lots; total of 4 acres
- Parking: 72 stalls

# Station 21 – Existing Plan



# Station 21 - NFPA

- **NFPA 1** – Fire Suppression Sprinklers – YES
- **NFPA 1500** – Smoke Detectors – NO  
Carbon Monoxide Detectors – NO
- **NFPA 1581** - Minimum Sleeping Area – YES  
PPE Cleaning Areas – YES  
EMS Decontamination Room – YES  
Turnout Gear Storage  
UV exposure – NO  
Thermal exposure – NO
- **NFPA 1221** - Station Alerting and Communication System - NO



# Station 21 - WAC

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- **296-305-06507** –
  - 1 HR Separation from Apparatus Bay / Bunk Room – YES
- **296-305-06509** –
  - Apparatus Bay Configuration – YES
- **296-305-06515** –
  - Hose Tower Configuration – NO
- **296-305-06511** –
  - Indoor Air Quality – YES



**WASHINGTON STATE LEGISLATURE**

# Station 21 – Essential Facility

- Essential Facility Category IV
  - Buildings essential for continuous use after major events or disasters.
  - Increased snow / wind / seismic loading requirements.
- Facility does not meet current standard structural building requirements, let alone **essential facility** requirements.



# Station 21 - Operations

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- Current conditions do not facilitate decontamination protocol
- Insufficient number of sleeping quarters
- Inadequate access and flow to apparatus
- No patient treatment room
- IT room inadequate for an essential facility
- Insufficient administrative workspace

# Station 21 – Existing Conditions

## Structural Deficiencies

- Some of existing wood framing is water damaged
- Narrow wood shear walls that exceed code maximum exist at the apparatus bay area.
- Lack of seismic anchorage between diaphragm and walls in the generator building.



# Station 21 – Existing Conditions

## Energy Code Deficiencies

- Flashing missing in areas – wood siding damaged
- Improper placement of moisture barrier
- Moisture damaged insulation and mold growth in attic
- Make-up air louver not functioning properly
- Inadequate insulation – does not meet energy code.



# Station 21 – Existing Conditions

## Building Systems at End of Useful Life

- Exterior windows have lost thermal seals
- Corrosion of roof drains.
- Existing storm water drainage system is dysfunctional – standing water around building
- Existing exterior walls are deteriorating – water damage and rot
- Failing asphalt and hardscape surfaces (cracking and upheaving)



# Station 21 – Existing Conditions

## Support Spaces and Systems Deficiencies

- Inadequate space allocation
  - No dedicated fitness room
  - Insufficient storage
  - Turn out gear not protected from UV exposure or contaminants
  - Not enough office spaces



# Station 21 – Existing Conditions

## ADA Deficiencies

- Non-ADA compliant ramp transitions
- Door hardware not ADA compliant
- Non-ADA compliant toilet rooms and kitchen
- Non-ADA compliant door thresholds and floor transitions



# Station 22



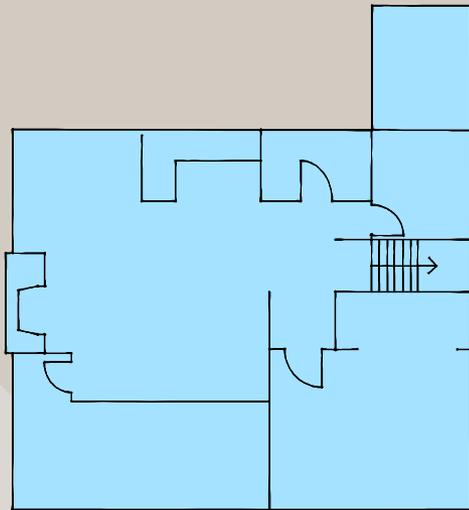
# Station 22 – Existing Site



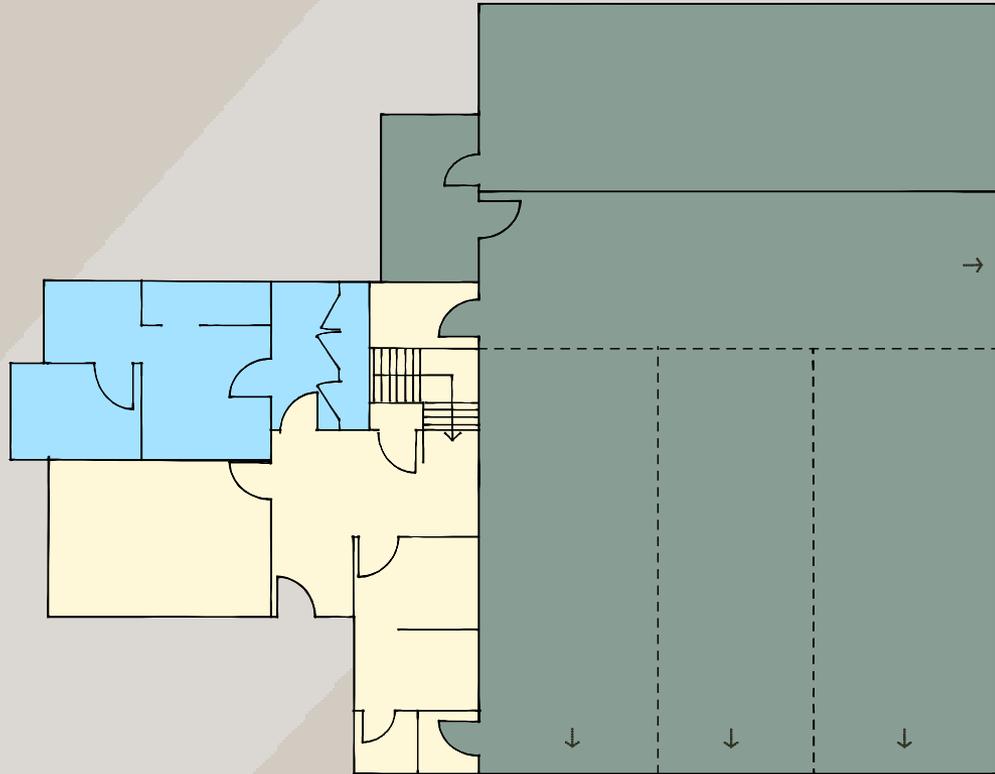
## Station Statistics

- 7934 Bucklin Hill Road NE
- Year Built: 1959
- Satellite Station w/  
Maintenance Bay
- Square Footage: 4,850 SF
- Staffing: Career/Volunteer
- Construction Type: Structural  
Clay Brick/Wood
- Site Size: 3.11 acres

# Station 22 – Existing Plan



SECOND FLOOR

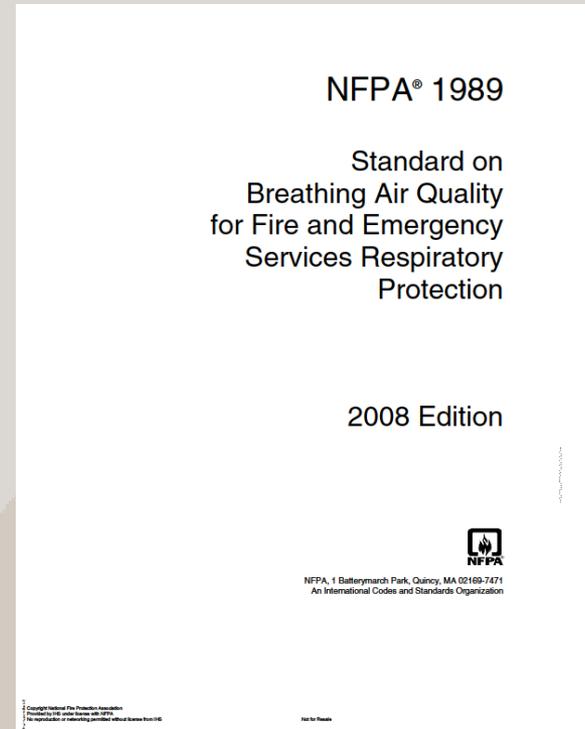


FIRST FLOOR



# Station 22 - NFPA

- **NFPA 1** – Fire Suppression Sprinklers – NO
- **NFPA 1500** – Smoke Detectors – NO  
Carbon Monoxide Detectors – NO
- **NFPA 1581** - Minimum Sleeping Area – YES  
PPE Cleaning Areas – NO  
EMS Decontamination Room – NO  
Turnout Gear Storage  
UV exposure – NO  
Thermal exposure – NO
- **NFPA 1221** - Station Alerting and Communication System - YES



# Station 22 - WAC

- **296-305-06507** –
  - 1 HR Separation from Apparatus Bay / Bunk Room – NO
- **296-305-06509** –
  - Apparatus Bay Configuration – NO
- **296-305-06515** –
  - Hose Tower Configuration – NO
- **296-305-06511** –
  - Indoor Air Quality – NO



# Station 22 – Essential Facility

- Essential Facility Category IV
  - Buildings essential for continuous use after major events or disasters.
  - Increased snow / wind / seismic loading requirements.
- Facility does not meet current standard structural building requirements, let alone **essential facility** requirements..



# Station 22 - Operations

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- Current conditions do not facilitate decontamination protocol
- Insufficient number of sleeping quarters
- Inadequate access and flow to apparatus
- No patient treatment room
- Inadequate work environment for mechanic shop

# Station 22 – Existing Conditions

## Structural Deficiencies

- Unreinforced masonry building
- Inadequate seismic anchorage between roof and masonry walls
- No continuous cross ties between diaphragm chords
- Wood ledger/top plate connections induces cross grain bending
- Damaged steel columns and slab at apparatus bay area
- Water damaged structural beams



# Station 22 – Existing Conditions

## Deficiencies

- Exposed electrical outlets/junction boxes
- Roof not properly ventilated
- Roof drains not properly installed
- Leaking skylights



# Station 22 – Existing Conditions

## Energy Code Deficiencies

- Does not meet energy code requirements
- Single pane windows and un-insulated doors
- Inadequate HVAC Systems – oil fired furnace
- Un-insulated walls and piping
- Water supply lines are galvanized piping



# Station 22 – Existing Conditions

## Building Systems at End of Useful Life

- Brick needs to be re-pointed and sealed
- Damaged concrete slab
- Water tank maintenance required
- Asbestos identified in ceiling tiles



# Station 22 – Existing Conditions

## Support Spaces and Systems Deficiencies

- No dedicated fitness room
- Offices and workspaces are too small and not secured
- Kitchen sub-standard
- Bunk rooms sub-standard
- Storage space is inadequate
- Inadequate or obstructed circulation in apparatus bays
- Turnout gear exposed to UV and air contaminants
- Inadequate space for maintenance of rigs



# Station 22 – Existing Conditions

## ADA Deficiencies

- Door hardware not ADA compliant
- Kitchen facilities do not meet accessibility standards
- Restroom facilities do not meet accessibility standards
- Stairs and railings do not meet accessibility standards



# Station 23



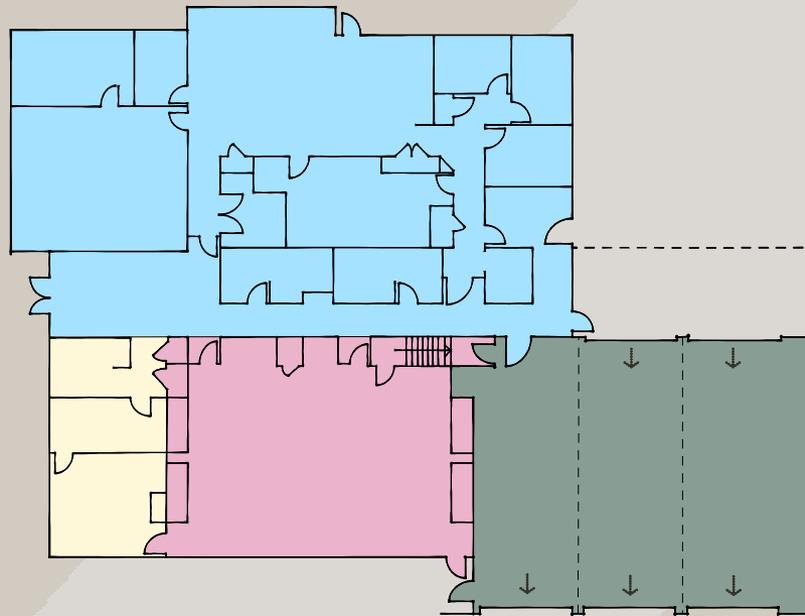
# Station 23 – Existing Site



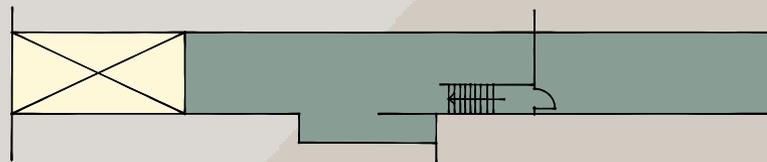
## Station Statistics

- 12985 Phelps Road
- Year Built: 1995
- Satellite Station with Training
- Square Footage: 14,171 SF
- Staffing: Career/Volunteer
- Construction Type: Wood Structure w/ Siding
- Site Size: 3.24 acres
- Parking: 20 stalls

# Station 23 – Existing Plan



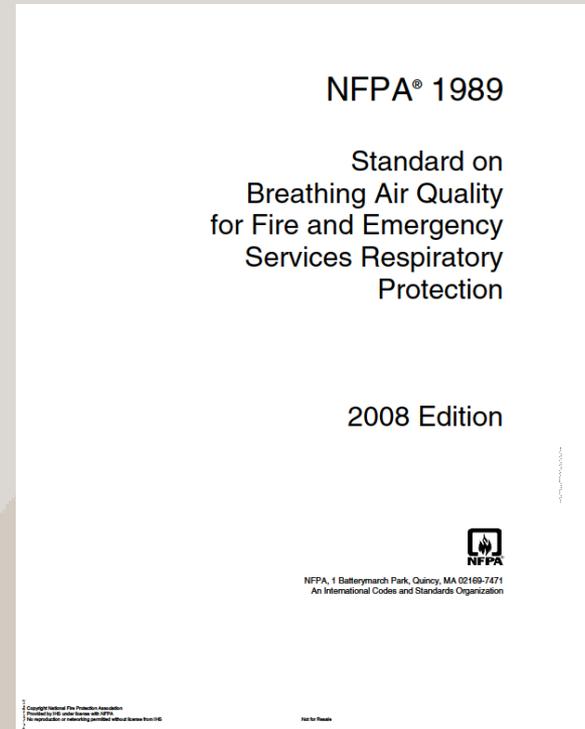
FIRST FLOOR



MEZZANINE

# Station 23 - NFPA

- **NFPA 1** – Fire Suppression Sprinklers – YES
- **NFPA 1500** – Smoke Detectors – YES  
Carbon Monoxide Detectors – NO
- **NFPA 1581** - Minimum Sleeping Area – YES  
PPE Cleaning Areas – YES  
EMS Decontamination Room – YES  
Turnout Gear Storage  
UV exposure – NO  
Thermal exposure – NO
- **NFPA 1221** - Station Alerting and Communication System - YES



# Station 23 - WAC

- **296-305-06507** –
  - 1 HR Separation from Apparatus Bay / Bunk Room – YES
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  - Apparatus Bay Configuration – YES
- **296-305-06515** –
  - Hose Tower Configuration – N/A
- **296-305-06511** –
  - Indoor Air Quality – YES



WASHINGTON STATE LEGISLATURE

# Station 23 – Essential Facility

- Essential Facility Category IV
  - Buildings essential for continuous use after major events or disasters.
  - Increased snow / wind / seismic loading requirements.
- Facility needs minor modifications to meet essential facility requirements.



# Station 23 - Operations

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- Current conditions do not facilitate decontamination protocol
- Insufficient number of sleeping quarters
- Training tower in need of minor repairs

# Station 23 – Existing Conditions

## Fire Station Deficiencies

- Inadequate lighting for security purposes
- Leaking walls and roofs
- Moisture issues in the siding
- Missing bracing for generator and main runners of suspended ceiling system for resisting seismic forces



# Station 23 – Existing Conditions

## Residence Deficiencies

- Insufficient insulation
- Inadequate roof ventilation
- New gutters and down spouts needed



# Station 23 – Existing Conditions

## Tower Deficiencies

- Spalling concrete – needs to be re-sealed
- Clogged roof drains
- Insufficient lighting
- Does not meet NFPA 1402
  - Spalling Concrete
  - No temperature monitoring devices
  - Insufficient size



# Police Station



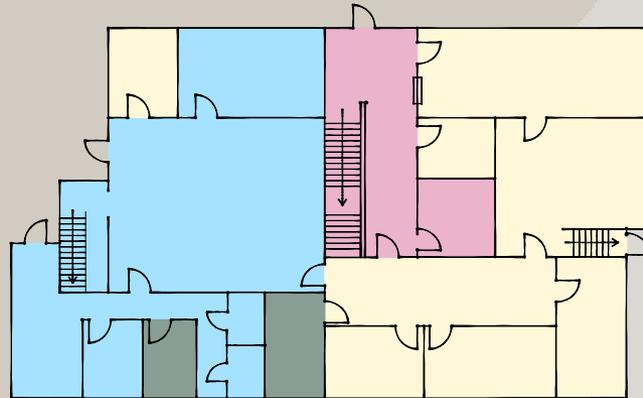
# Police Station – Existing Site



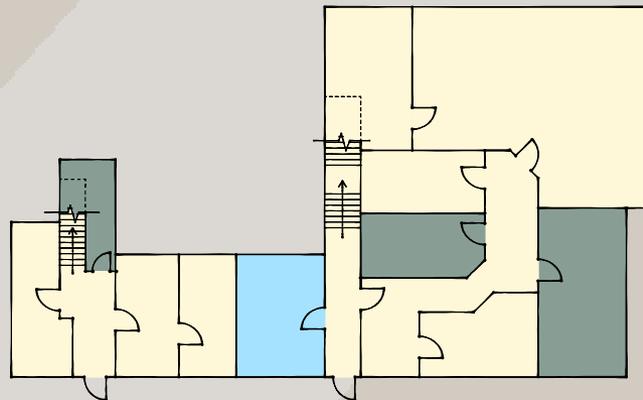
## Station Statistics

- 625 Winslow Way E
- Year Built: 1920's/operation as police facility - 1969
- Square Footage: 3,773 SF
- Staffing: Career
- Construction Type: Structural Masonry / Wood
- Site Size: 0.89 acres

# Police Station – Existing Plan



FIRST FLOOR



LEGEND

- DETECTIVES / EVIDENCE
- PATROL
- ADMINISTRATION / RECORDS
- PUBLIC

BASEMENT



# Police – Essential Facility

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- Essential Facility Category IV
  - Buildings essential for continuous use after major events or disasters.
  - Increased snow / wind / seismic loading requirements.
- Facility does not meet current standard structural building requirements, let alone **essential facility** requirements..

# Police - Operations

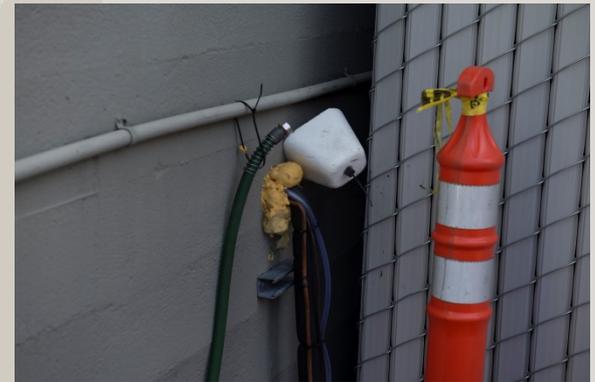
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- Exceeding general capacity / Insufficient space - leading to lack of dedicated space for key functions
- Inefficiencies between having functions split between multiple floors
- Non-functional floor plan – does not meet essential facility requirements
- Inadequate holding and suspect processing
- General security: Overall security of the building does not meet standards/best practice.
- Building Systems at end of useful life – causing impacts on operations
- Vehicular access challenges
- Pedestrian access challenges
- Entry is not inviting

# Police – Existing Conditions

## Structural Deficiencies

- Unreinforced masonry
- Inadequate roof diaphragm to masonry wall connections for shear transfer
- No continuous cross ties between diaphragm chords exist.
- Lack of seismic anchorage between diaphragm and CMU walls.



# Police – Existing Conditions

## Building Performance Deficiencies

- Single-pane glazing
- Previous sewage leaks in records room
- Improper installation of utilities
- Conduits and pipe penetrations not sealed properly and exposed to weather
- Inadequate heating – Detective's office does not have heat
- Ferry traffic potentially impacts the ability to respond to incidents



# Police – Existing Conditions

## Support Spaces and Systems Deficiencies

- No lockers rooms or showers
- Interview room being used as storage space
- Inadequate meeting space - Meetings held at fire station
- Inadequate storage – records files in hallway
- Chain of Custody Issues:
  - Employees must leave secured area to return evidence
  - Evidence tech desk located in evidence storage space.



# Police – Existing Conditions

## Security Deficiencies



# Police – Existing Conditions

## ADA Deficiencies

- Non-ADA compliant ramp transitions
- Door hardware not ADA compliant
- Non-ADA compliant toilet rooms and kitchen
- Non-ADA compliant door thresholds and floor transitions



# Next Meeting - Visioning



Thank you!

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# MACKENZIE.

ARCHITECTURE ■ INTERIORS ■ LAND USE PLANNING ■ STRUCTURAL ENGINEERING  
CIVIL ENGINEERING ■ TRANSPORTATION PLANNING ■ LANDSCAPE ARCHITECTURE

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Portland, Oregon ■ Vancouver, Washington ■ Seattle, Washington