



Fire Infrastructure Site and Facility Assessment
Study Review

Mount Vernon Fire Department

SITE AND FACILITY ASSESSMENT

January 29, 2020

Cost Comparison Summary

Consolidated Cost Tables from previous pages, for use as a reference.

DECEMBER 2018 COST SUMMARY

	STATION 1	STATION 2	STATION 3
PROJECT HARD COSTS	\$16,548,045	\$1,982,086	\$3,220,165
PROJECT SOFT COSTS	\$5,619,851	\$1,043,393	\$1,400,517
INDIVIDUAL TOTAL PROJECT COST	\$22,167,896	\$3,025,479	\$4,620,682
COMBINED TOTAL PROJECT COST	\$29,814,057.62		

JANUARY 2020 COST SUMMARY

	STATION 1	STATION 2	STATION 3
PROJECT HARD COSTS	\$18,112,514	\$2,232,020	\$3,626,216
PROJECT SOFT COSTS	\$6,061,560	\$1,127,895	\$1,536,005
INDIVIDUAL TOTAL PROJECT COST	\$24,174,074	\$3,359,915	\$5,162,221
COMBINED TOTAL PROJECT COST	\$32,696,210.19		

TASK 2 COST SUMMARY

	STATION 1	STATION 2	STATION 3
PROJECT HARD COSTS	\$14,821,699	\$3,724,659	\$3,626,216
PROJECT SOFT COSTS	\$5,038,061	\$1,732,476	\$1,536,005
INDIVIDUAL TOTAL PROJECT COST	\$19,859,760	\$5,457,135	\$5,162,221
COMBINED TOTAL PROJECT COST	\$30,479,116.53		

TASK 3 COST SUMMARY

	STATION 1	STATION 2	STATION 3
PROJECT HARD COSTS	\$15,258,796	\$2,232,020	\$3,626,216
PROJECT SOFT COSTS	\$5,256,805	\$1,127,895	\$1,536,005
INDIVIDUAL TOTAL PROJECT COST	\$20,515,601	\$3,359,915	\$5,162,221
COMBINED TOTAL PROJECT COST	\$29,037,736.99		

Outline

Current Market

Review of Space Allocation

Review of Costing

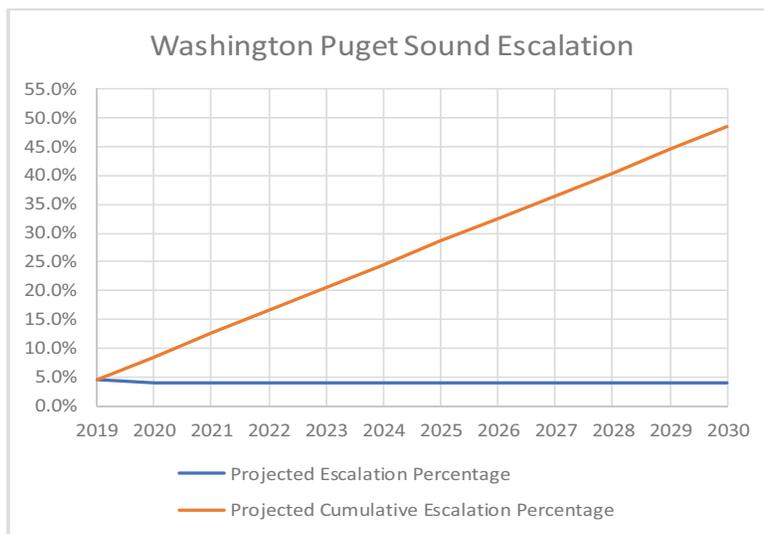
Review of Requested Alternative Cost Models

Review of Value Engineering Options

Q&A

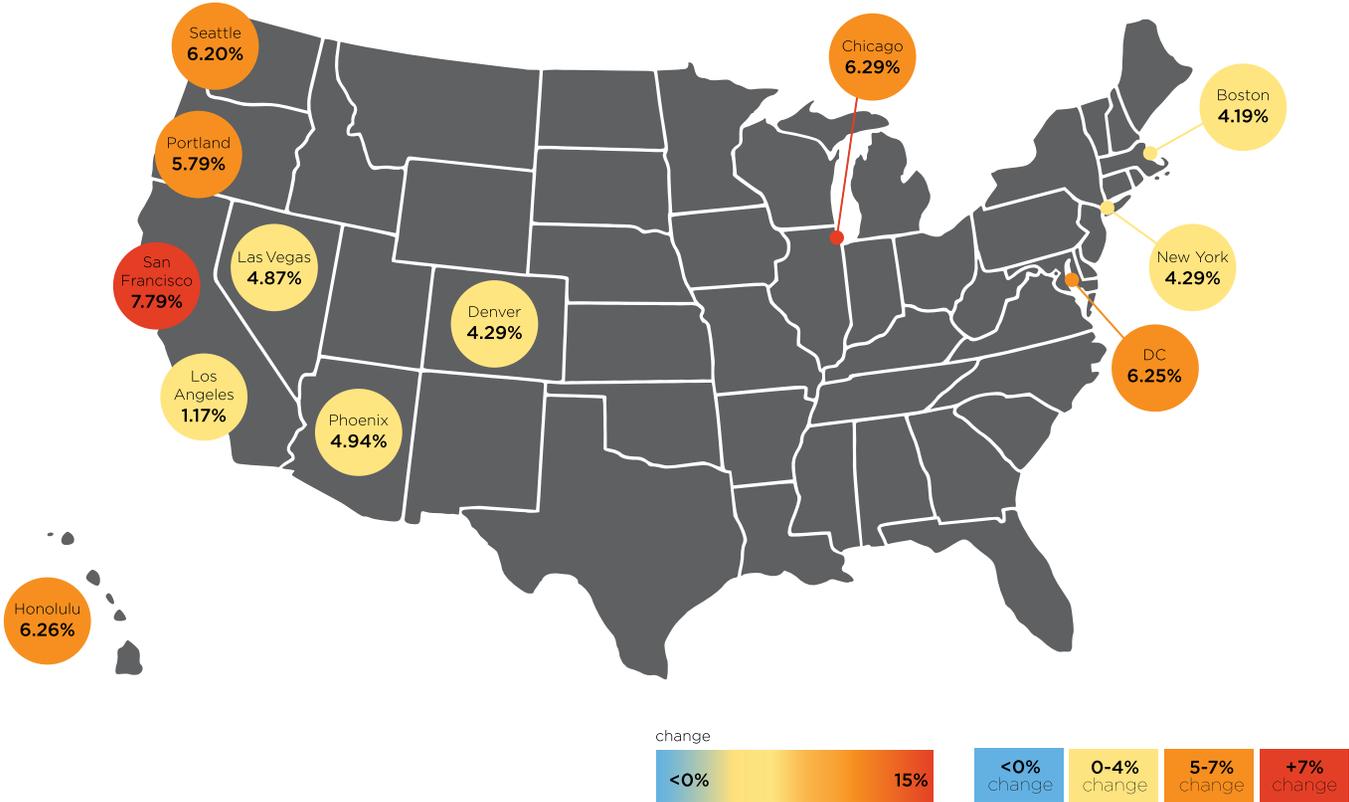
1.4 Escalation Projection

Year	Projected Escalation Percentage	Projected Cumulative Escalation Percentage
2019	4.5%	4.5%
2020	4.0%	8.5%
2021	4.0%	12.5%
2022	4.0%	16.5%
2023	4.0%	20.5%
2024	4.0%	24.5%
2025	4.0%	28.5%
2026	4.0%	32.5%
2027	4.0%	36.5%
2028	4.0%	40.5%
2029	4.0%	44.5%
2030	4.0%	48.5%



UNITED STATES

COMPARATIVE COST INDEX



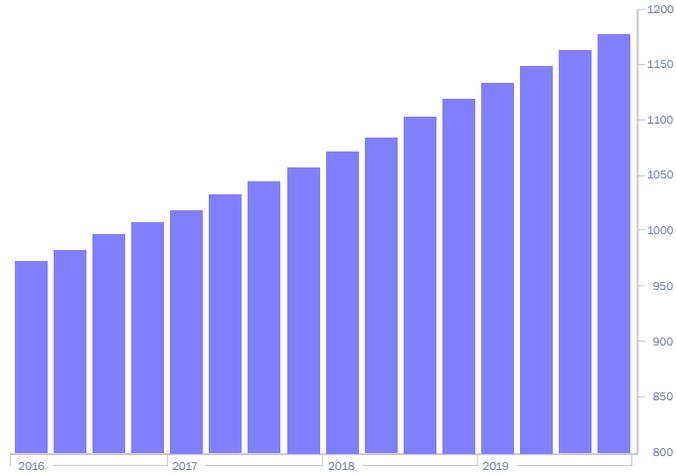
Source: RLB|Robinson Fourth Quarter 2019
North America
Quarterly Construction Cost Report

Turner Building Cost Index

2019 Fourth Quarter Forecast

“We continue to see the construction market fairly busy with several large projects starting in the fourth quarter of 2019.”

Attilio Rivetti
Vice President



Texas Southern University – New Library and Learning Center
Houston, Texas

Quarter	Index	Δ%
4th Quarter 2019	1177	1.29
3rd Quarter 2019	1162	1.13
2nd Quarter 2019	1149	1.23
1st Quarter 2019	1135	1.34

Year	Average Index	Δ%
2019	1156	5.5
2018	1096	5.6
2017	1038	5.0
2016	989	4.8
2015	943	4.5
2014	902	4.4
2013	864	4.1
2012	830	2.1
2011	812	1.6
2010	799	-4.0
2009	832	-8.4
2008	908	6.3
2007	854	7.7

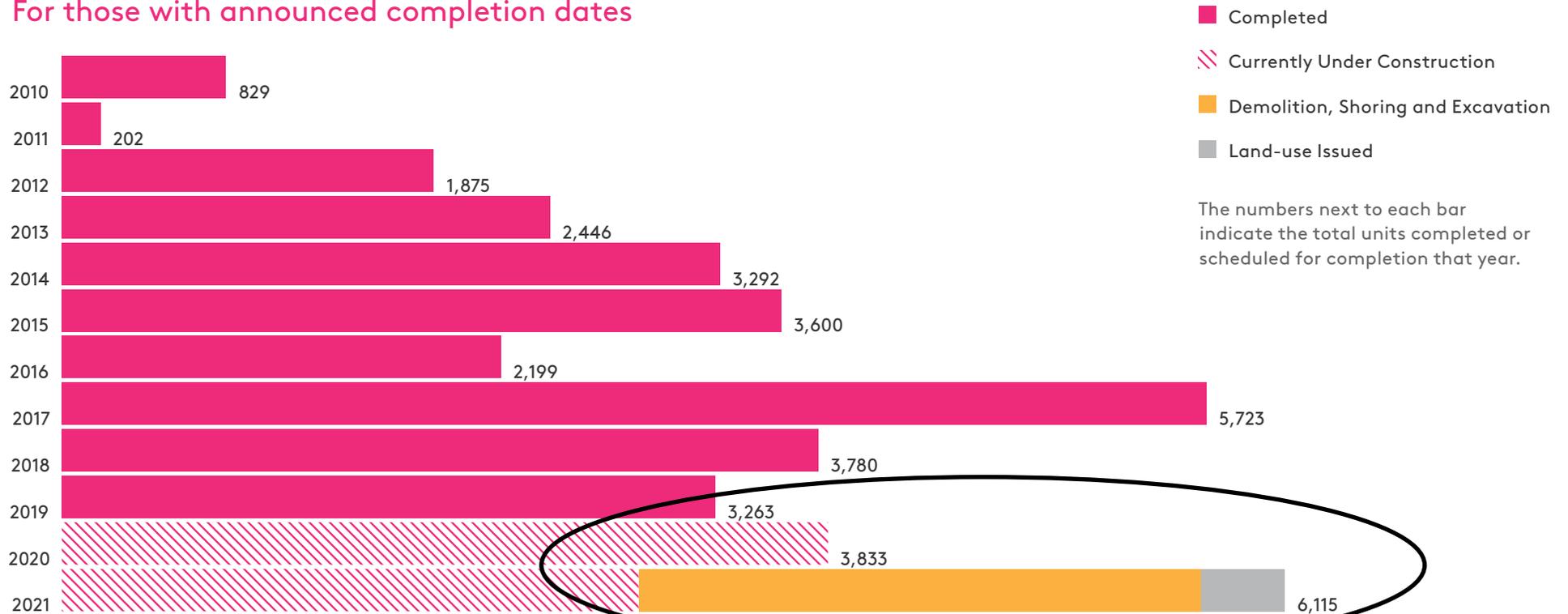
The Turner Building Cost Index is determined by the following factors considered on a nationwide basis: labor rates and productivity, material prices and the competitive condition of the marketplace.

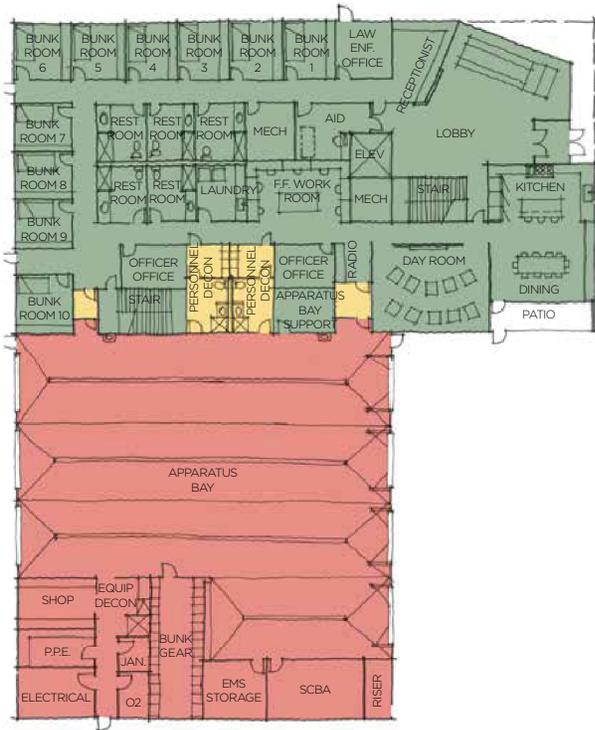
February 25, 2020

DSA: Construction in downtown Seattle slowed a bit in 2019, but pipeline is big

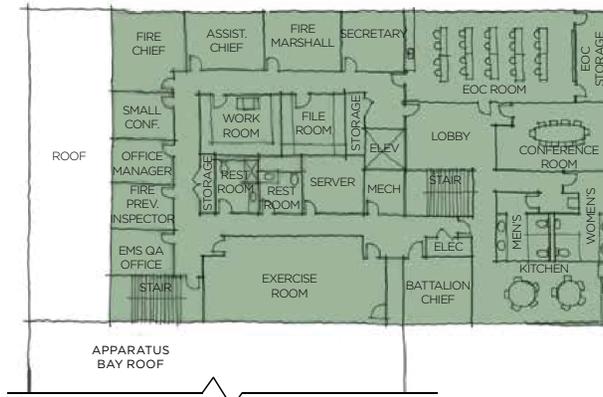
By JOURNAL STAFF

Residential Units by Status and Completion Year For those with announced completion dates



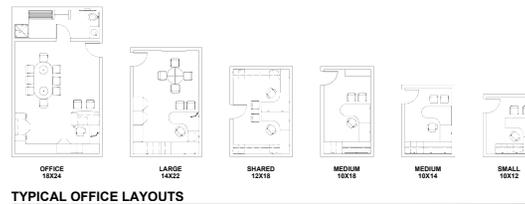
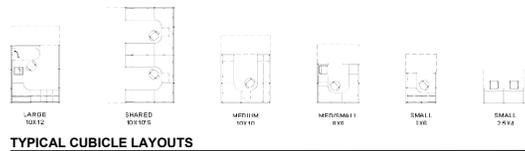
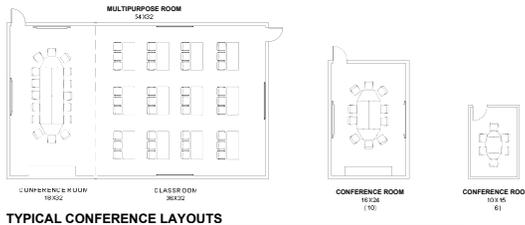


FIRST FLOOR PLAN
1/32" = 1'-0"



SECOND FLOOR PLAN
1/32" = 1'-0"

02-12

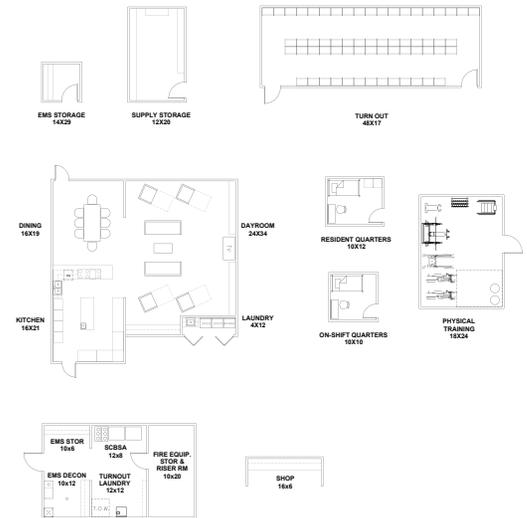


Space Standards

SCALE 1/16" = 1'-0"

City of Mount Vernon
December 14, 2018

02-13



SCALE 1/16" = 1'-0"

Space Standards



8. RESTROOMS

- Tile grout on walls and floor is a sanitary and maintenance problem



9. DAYROOM

- Room is undersized for current staffing levels
- Room does not provide for a diversity of uses



10. KITCHEN/DINING

- Both the kitchen and the dining room are undersized for staff
- The kitchen sink is pushed into a corner beyond the face of the cabinet
- Finish materials are outdated and showing signs of wear
- Existing appliances have exceeded or are near their expected life spans



11. KITCHEN/DINING

- More room is needed for refrigerators and counter workspace
- Kitchen does not meet accessibility standards

Station 2 Facility

12. EXERCISE ROOM

- Exercise room is being used as a circulation path between Apparatus Bay and the Living Quarters
- Carpet is collecting contaminants and being used for exercise routines
- Room is undersized for the staff size
- Space needs additional open area for flexibility of use



13. PUBLIC LOBBY

- No security at reception desk - open pass through
- Non-ADA compliant counter
- More space is needed for seating
- No dedicated aid room with controlled security into the station



14. PUBLIC RESTROOMS

- Tile grout on walls and floor is a sanitary and maintenance problem



15. MUSEUM

- Finished floor is cracking where the substrate does not provide isolation from the underlying concrete



Station 2 Facility

Mount Vernon Fire Department – Station 1

November 19, 2018

- If the soils have insufficient bearing capacity to support the loading on the slab, the slab will have to be structural, with piles placed at a given spacing all throughout. Spacing and type will have to be determined later with input from a geotechnical engineer.

A20 BASEMENTS – Not Used**A2010 Basement Excavation**

- Not Used

A2020 Basement Walls

- Not Used

B. SHELL**B10 SUPERSTRUCTURE****B1010 Floor Construction**

- Elevated Deck:
 - 3" metal decking with 2 ½" concrete for a 5 ½" total section. Wide flange columns at approximately 30'x30' grid. Wide flange joists spaced at approximately 6'-0" o.c.

B1020 Roof Construction

- Main Roofs: Roof deck to be 1 ½" deep metal decking. Framing in apparatus bay to be open web steel joists that clear span and are spaced at about 6'-0" o.c.
 - Framing in living quarters to be steel wide flange beams and columns. See Floor Construction section above for spacing and layout.

B20 EXTERIOR ENCLOSURE**B2010 Exterior Walls**

- Assume the building exterior walls will be comprised of the following:
 - 8" thick structural brick: Color TBD
 - Metal Wall Panels: Concealed faster panels by AEP Span, Prestige Series. Color TBD.
 - Cast in Place Concrete: Integral Color TBD
 - Large Metal Clad Roof Overhangs: Aluminum ACM panels over metal stud framing by North Clad. Color TBD

**MEMORANDUM**

November 8, 2018

Project Name: Fire Station #2 - Mount Vernon
Sazan Project #: 532-1862

Subject: Preliminary Mechanical Design Criteria Specification

Sazan Group provided a facility assessment to Fire Station #2, approximate size 12,697 sf located at 1901 N Laventure Rd. Mt. Vernon, WA 98273. Based on that assessment, the following design criteria specifications were developed to support the preliminary recommendations on system upgrades and the new 1,303 sf addition.

HVAC System:

1. Demolition of four outdoor condensing units, four indoor gas furnaces with cooling coils and associated air distribution system.
2. Demolish thirteen electric wall heaters with integral thermostats bedrooms, dining and the offices.
3. Demolition of Honeywell control system with 9 temperature sensors.
4. Demolish gas radiant heaters in the Apparatus areas.
5. Demolish kitchen exhaust hood system.
6. Provide VRF system with fourteen temperature zones served by fan coils, ceiling or wall cartridges.
7. Provide 500 CFM Dedicated Outside Air System (DOAS) with gas heater.
8. Provide auto fume exhaust system (Plymovent or equal) to capture the fumes directly at the tailpipe of vehicles in the Apparatus area.
9. Provide three 200 MBH gas unit heaters in the Apparatus area.
10. Provide kitchen exhaust hood and associated ductwork.
11. Provide 1,600 CFM ceiling exhaust fan with associated duct to serve the new Exercise Room.
12. Provide two 380 CFM ceiling exhaust fan with associated duct to serve the new Personnel Decon rooms.
13. Provide two 250 CFM ceiling exhaust fan with associated duct to serve the new restrooms.

Plumbing System:

1. Demolish plumbing system in two restrooms located adjacent to the Lobby.
2. Demolish kitchen sink and associated piping.
3. Demolish hose bibb at the exterior wall of the Dining/Kitchen.
4. Demolish hose bibb at the exterior wall of the SCBA room.
5. Provide new faucets at existing lavatories.
6. Provide plumbing system for the two new restrooms.
7. Provide plumbing system for the two new Personnel Decon rooms.
8. Provide kitchen sink with garbage disposal.
9. Provide hose bibb at the exterior wall of the new Kitchen.
10. Provide hose bibb at the exterior wall of the new Exercise room.
11. Modify plumbing distribution system (Cold water, Hot water, Hot water recirc, Waste & Vent) to accommodate the new plumbing fixtures.

Fire Protection System:

1. Modify sprinkler system based on the new architectural floor plan.

600 Stewart Street
Suite # 1400
Seattle, WA 98101
206.267.1700

111 SW Fifth Avenue
Suite # 2120
Portland, OR 97204
503.416.2400

sazan.com

END OF MEMORANDUM



DECEMBER 2018 COST SUMMARY

	STATION 1	STATION 2	STATION 3
PROJECT HARD COSTS	\$16,548,045	\$1,982,086	\$3,220,165
PROJECT SOFT COSTS	\$5,619,851	\$1,043,393	\$1,400,517
INDIVIDUAL TOTAL PROJECT COST	\$22,167,896	\$3,025,479	\$4,620,682
COMBINED TOTAL PROJECT COST	\$29,814,057.62		

TASK 2 COST SUMMARY

	STATION 1	STATION 2	STATION 3
PROJECT HARD COSTS	\$14,821,699	\$3,724,659	\$3,626,216
PROJECT SOFT COSTS	\$5,038,061	\$1,732,476	\$1,536,005
INDIVIDUAL TOTAL PROJECT COST	\$19,859,760	\$5,457,135	\$5,162,221
COMBINED TOTAL PROJECT COST	\$30,479,116.53		

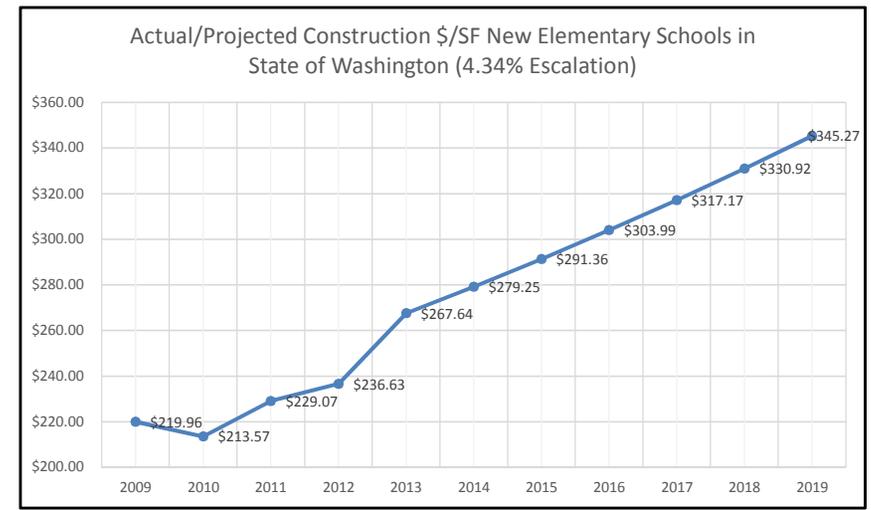
JANUARY 2020 COST SUMMARY

	STATION 1	STATION 2	STATION 3
PROJECT HARD COSTS	\$18,112,514	\$2,232,020	\$3,626,216
PROJECT SOFT COSTS	\$6,061,560	\$1,127,895	\$1,536,005
INDIVIDUAL TOTAL PROJECT COST	\$24,174,074	\$3,359,915	\$5,162,221
COMBINED TOTAL PROJECT COST	\$32,696,210.19		

TASK 3 COST SUMMARY

	STATION 1	STATION 2	STATION 3
PROJECT HARD COSTS	\$15,258,796	\$2,232,020	\$3,626,216
PROJECT SOFT COSTS	\$5,256,805	\$1,127,895	\$1,536,005
INDIVIDUAL TOTAL PROJECT COST	\$20,515,601	\$3,359,915	\$5,162,221
COMBINED TOTAL PROJECT COST	\$29,037,736.99		

District	Project	Bid Date	Area	Contract Cost/SF
Bellevue	Ardmore Elementary Repl (N/L)	04/23/09	70,330	\$247.38
Issaquah	New Elementary #15	05/09/09	72,576	\$226.92
Kennewick	New Cottonwood Elementary	07/02/09	50,899	\$202.82
Everett	Jefferson El Repl (N/L)	08/11/09	38,850	\$200.34
Highline	McMicken Heights El Repl (N/L)	09/30/09	69,979	\$254.68
Snohomish	Riverview El Repl (N/L)	11/17/09	76,536	\$261.48
Snohomish	Machias El Repl (N/L)	12/01/09	72,340	\$261.99
Average w/ 7% Tax				\$236.52
Average w/o Tax				\$219.96
Bellevue	Spiritoridge El Repl (N/L)	04/06/10	66,358	\$249.01
North Franklin	Connell El Repl (N/L)	04/15/10	66,066	\$171.68
Moses Lake	New Park Orchard El	05/06/10	46,850	\$210.92
Federal Way	Sunnycrest El Repl (N/L)	05/13/10	49,352	\$224.22
Federal Way	Lakeland El Repl (N/L)	05/27/10	46,111	\$234.52
Everett	James Monroe El Repl (N/L)	06/08/10	72,809	\$226.47
Bethel	Spanaway Elementary Repl (N/L)	08/17/10	47,804	\$206.81
Lake Washington	John Muir Elementary Repl (N/L)	10/09/10	61,924	\$313.53
Average w/ 7% Tax				\$229.65
Average w/o Tax				\$213.57
Bethel	Clover Creek Elementary Repl (N/L)	03/24/11	63,121	\$208.65
Spokane	Westview Elementary Repl (N/L)	04/14/11	59,029	\$191.60
Everett	View Ridge Elementary Repl (N/L)	05/17/11	68,778	\$238.79
Lake Washington	Carl Sandburg Elementary Repl (N/L)	06/02/11	68,507	\$316.67
Lake Washington	Helen Keller Elementary Repl (N/L)	06/07/11	59,624	\$304.55
Othello	New Elementary	07/26/11	59,870	\$181.21
Tacoma	Geiger Elementary Replacement (N/L)	08/04/11	67,823	\$282.70
Average w/ 7% Tax				\$246.31
Average w/o Tax				\$229.07
Lake Washington	A.G. Bell Elementary Replacement (N/L)	05/16/12	66,281	\$303.11
Spokane	Jefferson Elementary Replacement (N/L)	05/31/12	59,845	\$220.14
Meridian	Meridian Elementary (Irene Reither)	07/24/12	60,704	\$216.39
Lake Washington	Benjamin Rush Elementary Repl (N/L)	2012 gccm	71,951	\$342.59
East Valley 90	Terrace Heights Elementary Repl (N/L)	08/23/12	56,875	\$189.97
Average w/ 7% Tax				\$254.44
Average w/o Tax				\$236.63
Central Kitsap 401	Jackson Park Elementary Repl (N/L)	05/02/13	60,836	\$310.62
Pasco 1	New Elementary #13	05/02/13	70,891	\$235.76
College Place 250	New College Place Elementary (N/L)	05/09/13	75,156	\$202.67
Bellingham 501	Birchwood Elementary Repl (N/L)	05/21/13	42,870	\$281.89
Clover Park 400	Clarkmoor Elementary Repl (N/L)	07/02/13	77,166	\$349.88
Clover Park 400	Greenwood Elementary Repl (N/L)	07/02/13	67,747	\$380.27
Evergreen 114	New Crestline Elementary	07/09/13	62,404	\$253.44
Average w/ 7% Tax				\$287.79
Average w/o Tax				\$267.64



11/26/2014
9:17 AM



Mt. Vernon

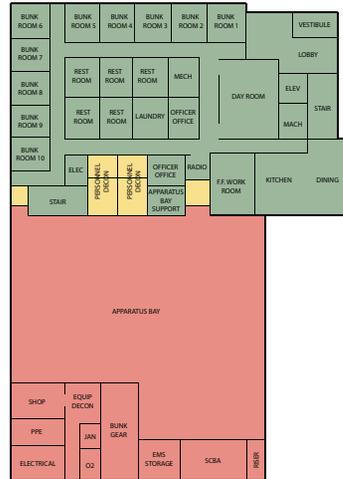
FIRE STATION #1 - REVISED FLOOR PLAN - VALUE ENGINEERING OPTIONS

	Base Cost	Markups	Escalation	TOTAL
1. Revise Partitions to Wood Stud Framing	(\$110,512)	(\$30,316)	(\$24,377)	(\$165,206)
2. Revise Floor, Roof, and Stair Systems to Wood Framed Construction	(\$1,103)	(\$303)	(\$243)	(\$1,649)
3. Revise Structural Brick Wall System to Brick Veneer	(\$178,979)	(\$49,099)	(\$39,480)	(\$267,559)
4. Reduce Brick Square Footage	(\$5,050)	(\$1,385)	(\$1,114)	(\$7,549)
5. Replace all Brick Walls with Fiber Cement or Metal Panel Walls	(\$136,076)	(\$37,329)	(\$30,017)	(\$203,422)
6. Revise Cast Concrete Cornices to Manufactured Metal Coping	(\$9,175)	(\$2,517)	(\$2,024)	(\$13,716)
7. Revise Butt-Glazed Entry Storefront to Typical Mullion Type	(\$4,125)	(\$1,132)	(\$910)	(\$6,167)
8. Revise Entry Doors from Double-Swing to Single-Swing Storefront Doors	(\$5,500)	(\$1,509)	(\$1,213)	(\$8,222)
9. Revise Wood Entry Soft to Fiber Cement Soft	(\$5,425)	(\$1,488)	(\$1,197)	(\$8,110)
10. Reduce Parapet Heights Throughout and Center RTU's to Ease Screening	(\$81,313)	(\$22,306)	(\$17,937)	(\$121,556)
11. Reduce Sidelite Count throughout Interior	(\$3,250)	(\$892)	(\$717)	(\$4,858)
12. Revise Polished Concrete Floors at App Bay and Utility Functions to Sealed Concrete	(\$45,104)	(\$12,373)	(\$9,949)	(\$67,426)
13. Remove Photovoltaic Panels and Backbone from Roof	(\$315,387)	(\$86,519)	(\$69,570)	(\$471,477)
14. Reduce Casework Scope	(\$45,350)	(\$12,441)	(\$10,004)	(\$67,794)
15. Reduce / Re-Design Concrete Entry Element	(\$18,500)	(\$5,075)	(\$4,081)	(\$27,656)
16. Reduce / Remove Concrete Seatwalls	(\$5,000)	(\$1,372)	(\$1,103)	(\$7,475)
17. Reduce Brick Square Footage from Site Fence	(\$9,823)	(\$2,695)	(\$2,167)	(\$14,684)
18. Revise Floor, Roof, Stair and Wall Systems to CLT construction	\$446,682	\$122,537	\$98,532	\$667,751

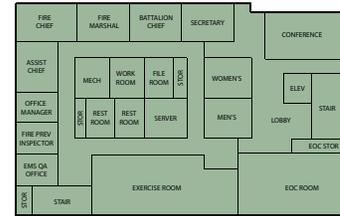
Task #3: Station 1 Value Engineering

Task 3 surrounds evaluation of the current Station 1 design in an effort to reduce overall project costs through value engineering strategies with minor program reduction that retains station function.

Programmatic elements to be removed from Station 1 without impacting station function include the Community Paramedic Office / Aid, Law Enforcement Office, Conference Room - Small, Lunch Room / Kitchen, Museum / Historic Truck (to stay at Station 2), Unisex Restroom (shower removed, water closet and lavatory remain), Exterior Patio. After all was completed, the resulting square footage for Station 1 finished out at 21,766 sf.



STATION 1 FIRST FLOOR PLAN



STATION 1 SECOND FLOOR PLAN

The Value Engineering Studies conducted for Station 1 included an exploration of alternative structural systems, cladding, and removal / deletion of various building and site elements. A full list of these studies can be found on pg. 03-11.

Station 2 remains as designed from previous efforts (December 2018) for Task 3, with exception to the re-addition of the Museum / Historic Truck to the Lobby Area.

See the table below for the updated cost summary, including the changes mentioned above for Station 1. The full Cost Estimate Document has been included in Appendix C, and expanded Cost Summary Documents have been included in Appendix D.

TASK 3 COST SUMMARY

	STATION 1	STATION 2	STATION 3
PROJECT HARD COSTS	\$15,258,796	\$2,232,020	\$3,626,216
PROJECT SOFT COSTS	\$5,256,805	\$1,127,895	\$1,536,005
INDIVIDUAL TOTAL PROJECT COST	\$20,515,601	\$3,359,915	\$5,162,221
COMBINED TOTAL PROJECT COST	\$29,037,736.99		

	Station 1	Station 2	Station 3	Total/Notes
Existing SF		12,679	5,973 SF	
Original Hard Cost	\$16,548,045	\$1,982,086	\$3,220,165	\$21,750,296
Original Proposed SF	24,000 SF (new)	16,986 SF (4,307 SF new)	11,607 SF (5,634 SF new)	
Cost/SF	\$689 (\$505 bldg) (\$184 site)	\$462 (\$428 bldg) (\$34 site)	\$571 (\$529 bldg) (\$42 site)	
Cost Escalated	\$18,112,514	\$ 2,232,020	\$ 3,626,216	\$23,970,750
Difference	\$ 1,564,469	\$ 249,934	\$ 406,051	\$ 2,220,454
Cost/SF	\$755	\$520	\$643	
Task 2	\$14,821,699	\$ 3,724,659	\$ 3,626,216	\$22,172,574
SF	16,400 SF	15,898 SF (5,830 SF new)	11,607 SF (5,634 SF new)	
Difference	(\$ 3,290,815)	\$ 1,492,639	\$ 0	(\$ 1,798,176)
Cost/SF	\$903	\$528	\$643	
Task 3	\$15,258,796	\$ 2,232,020	\$ 3,626,216	\$21,117,032
SF	21,766 SF	16,986 SF (4,307 SF new)	11,607 SF (5,634 SF new)	
Difference	(\$ 2,853,718)	\$ 0	\$ 0	(\$ 2,853,718)
Cost/SF	\$701	\$520	\$643	



Mt. Vernon

Q&A

DECEMBER 2018 COST SUMMARY

	STATION 1	STATION 2	STATION 3
PROJECT HARD COSTS	\$16,548,045	\$1,982,086	\$3,220,165
PROJECT SOFT COSTS	\$5,619,851	\$1,043,393	\$1,400,517
INDIVIDUAL TOTAL PROJECT COST	\$22,167,896	\$3,025,479	\$4,620,682
COMBINED TOTAL PROJECT COST	\$29,814,057.62		

TASK 2 COST SUMMARY

	STATION 1	STATION 2	STATION 3
PROJECT HARD COSTS	\$14,821,699	\$3,724,659	\$3,626,216
PROJECT SOFT COSTS	\$5,038,061	\$1,732,476	\$1,536,005
INDIVIDUAL TOTAL PROJECT COST	\$19,859,760	\$5,457,135	\$5,162,221
COMBINED TOTAL PROJECT COST	\$30,479,116.53		

JANUARY 2020 COST SUMMARY

	STATION 1	STATION 2	STATION 3
PROJECT HARD COSTS	\$18,112,514	\$2,232,020	\$3,626,216
PROJECT SOFT COSTS	\$6,061,560	\$1,127,895	\$1,536,005
INDIVIDUAL TOTAL PROJECT COST	\$24,174,074	\$3,359,915	\$5,162,221
COMBINED TOTAL PROJECT COST	\$32,696,210.19		

TASK 3 COST SUMMARY

	STATION 1	STATION 2	STATION 3
PROJECT HARD COSTS	\$15,258,796	\$2,232,020	\$3,626,216
PROJECT SOFT COSTS	\$5,256,805	\$1,127,895	\$1,536,005
INDIVIDUAL TOTAL PROJECT COST	\$20,515,601	\$3,359,915	\$5,162,221
COMBINED TOTAL PROJECT COST	\$29,037,736.99		