

## Carol Gibson

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**From:** Milton Miller <mmiller@portofmoseslake.com>  
**Sent:** Friday, September 20, 2024 11:25 AM  
**To:** Carol Gibson; Dan Roach; Kim DeTrolio; Rich Mueller  
**Subject:** Fwd: 401 Hangar Building Report  
**Attachments:** Outlook-Bridge.Log.png; Report\_v01.pdf

Please see below what I received from western on weds about 401

Thanks  
Milt

Sent from my iPhone

Begin forwarded message:

**From:** Danielle Escamilla <danielle@wpeinc.net>  
**Date:** September 18, 2024 at 2:14:52 PM PDT  
**To:** Milton Miller <mmiller@portofmoseslake.com>  
**Subject:** 401 Hangar Building Report

Good Afternoon Milt,

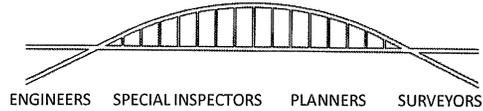
I have attached the review of the cost estimates for the 401 roof replacement project. Please let me know if you would like to discuss any of the items within the report or require any modifications.

Thank you,

Danielle Escamilla, Senior Planner

**WESTERN PACIFIC ENGINEERING & SURVEY, INC.**  
WESTERN PACIFIC PLAZA  
1224 S PIONEER WAY  
MOSES LAKE, WASHINGTON 98837

(509) 765 - 1023



WESTERN PACIFIC ENGINEERING & SURVEY

WESTERN PACIFIC PLAZA  
1224 S PIONEER WAY STE. A  
MOSES LAKE, WASHINGTON 98837  
OFFICE: (509) 765-1023

Port of Moses Lake  
Director of Facilities  
Attn: Milt Miller  
7810 Andrews Street  
Suite 200  
Moses Lake, WA 98837

**SUBJECT: Port of Moses Lake 401 Hangar – Roof Replacement Opinion of Probable Cost & Evaluation of Permit Requirements  
WPES Project #24001**

Dear Mr. Miller,

At your request, Western Pacific Engineering & Survey, Inc. (WPES) was requested to analyze the replacement costs that may be associated or reasonably assumed to be required for the refurbishment and/or replacement of the roof structure of the Port of Moses Lake 401 Hangar. Regardless of the path forward, it is advised that any repair recommendations be designed, detailed, and construction supervised by a licensed structural engineer. What is known for certain is that the roof structure has surpassed the end of its service life and that a repair, replacement or demolition option is recommended in all cases.

In 1998, The DOH Associates prepared a building structural assessment report. This report provides a thorough analysis of the building components (IE. walls, foundation, roof structure, etc.) as well as an analysis of observations made during that inspection. The analysis provided both a repair and a replacement option to the roof trusses and lateral system. The assumptions for the repair or replacement option in 1998 dollars estimated repair at around \$550,000 each but did not account for hazardous waste, Washington State Sales Tax, electrical work, mechanical work, architectural and engineering fees, permitting fees or Port administration costs. Additionally, there was a recommendation that a core sample of the top chord should be taken to verify the glue is in good condition and has a strength of no less than 50 psi. If the strength was determined to be inadequate the basis of the report would change, and the repair option would no longer be viable. \$1 in 1998 is equivalent in purchasing power to about \$1.93 in 2024 dollars<sup>1</sup>, creating an equivalent cost of approximately \$1,062,215.00, excluding the same assumptions. At the time of the report, there were many assumptions made about the integrity of components of the roof system that remain to be evaluated.

In 2012, Jacobs Engineering Group, Inc. were retained to reevaluate the roof structure and include within the assessment the structural capacity of the members and their connections considering the risks associated with the effects of checking, splitting and cracking of the members. The re-

evaluation resulted in an alternative method for replacement but did not provide an opinion of probable costs. The proposed method is possible, but still brings into question if the top chord glue is adequate or not. If the adequacy is brought into question during the design or repair process, it is possible that this option would not longer be a viable solution or could result in additional cost. Like the DOH report, at the time of Jacobs report, there were many assumptions made to the integrity of components of the roof system that remain to be evaluated.

In 2015, The DOH Associates updated the cost estimates in 2015 dollars for a roof replacement (\$2,782,785), roof replacement with expansion (\$3,262,783), roof structure repair (\$2,368,960) and roof structure repair with tail enclosure (\$3,047,006). \$1 in 2015 is equivalent in purchasing power to about \$1.33 in 2024 dollars<sup>1</sup>, creating an equivalent cost estimate of approximately \$3,146,453 to \$4,333,628 depending on roof style selected. While there was a 25% contingency added to the cost estimates, there are certain items that would need to be considered, and likely required as part of the project including Asbestos/PCP removal and abatement, fire suppression system, hangar door replacement, improvements to ramp space, parking lot area, mechanical additions, electrical additions, structural design, bid services and construction management services.

In 2018, Western Pacific Engineering & Survey, Inc. were retained to reevaluate the roof structure and provide recommendations for modifying the height of the roof system, to accommodate larger planes. During the life of the project, it was determined that the 401 structure was inadequate to meet current demands and resulted in demolition of 408's sister hangar (401). During that analysis, additional pre-demolition "Good Faith" regulated & hazardous materials surveys were conducted that resulted in findings that the structure was proven to contain greater than one percent (>1%) asbestos by laboratory analysis or assumed to contain asbestos based on existing reports. Since these structures were constructed during the same time period and utilizing the same materials, it is safe to assume the same asbestos and lead containing materials would be identified in the 401-hangar building. Regardless of the repair, replace or demolition decision made, it is safe to assume that a pre-construction regulated & hazardous materials survey be conducted prior to construction activities and protections be in place during any construction method process as regulated by local, state and federal agencies. The additional requirement is roughly estimated for both the pre-construction survey and abatement during construction to be approximately \$75,000.00 in additional cost from the estimates above.

As for the need for fire suppression and need to upgrade the facility with fire suppression services, it really comes down to a change of use/occupancy on the structure. To some extent, if the Port District is merely looking to repair/replace the roof structure and keep the current use of hangar storage, then the fire suppression additions would likely not be required, especially considering the life safety nature of the repairs. However, if the Port District leases to a tenant that, for example, stores hazardous materials, operates a repair service or otherwise creates situations that alter the use/occupancy of the structure itself it very well could trigger the need to include fire suppression into the improvements required. The Port should consider its target market and intended users as part of its evaluation. It is possible that the cost for this improvement be transferred over to the tenant and not be borne upon the Port District. No cost estimate was evaluated for this review.

When evaluating options and costs, it is also important to remember that every engineering firm that provided a report brought into question the integrity of the top chord glue. If through design or

construction the structural integrity comes into question or additional “unknowns” are identified the total cost for the repair could be substantially higher than the cost estimates provided.

For comparison, In 2022 the Port of Moses Lake made the decision to demolish the 408 “401’s sister hangar” and completed a competitive public bidding process through an RFP/RFQ submittal. The lowest responsible/responsive bidder was awarded the base bid at \$501,041.74 which included demolition, permitting and asbestos abatement. The highest bidder bid on the project at \$1,569,716.91, including Washington State Sales Tax in both instances. It is safe to assume that cost estimates would be near the same if a demolition option was selected for the 401 building.

OPINION OF PROBABLE COST

ITEM – ROOF STRUCTURE REPLACEMENT		COST ESTIMATE
DOH COST ESTIMATE	\$	2,782,785.00
INFLATION – 2015 TO 2024 DOLLARS	\$	913,310.00
ASBESTOS PRECONSTRUCTION REPORT	\$	10,000.00
ASBESTOS REMEDIATION	\$	65,000.00
STRUCTURAL DESIGN – ESTIMATE ONLY	\$	110,000.00
CONSTRUCTION MANAGEMENT SERVICES	\$	75,000.00
<b>TOTAL*</b>	\$	<b>3,956,095.00</b>

\*Assumes no fire suppression required, that top chord glue is adequate, no major additional defects and that the contingency provided in the estimate is adequate to cover WSST, permit fees and other items not currently considered.

ITEM – ROOF STRUCTURE REPLACEMENT WITH EXPANSION		COST ESTIMATE
DOH COST ESTIMATE	\$	3,262,783.00
INFLATION – 2015 TO 2024 DOLLARS	\$	1,070,845.00
ASBESTOS PRECONSTRUCTION REPORT	\$	10,000.00
ASBESTOS REMEDIATION	\$	65,000.00
STRUCTURAL DESIGN – ESTIMATE ONLY	\$	150,000.00
CONSTRUCTION MANAGEMENT SERVICES	\$	90,000.00
<b>TOTAL*</b>	\$	<b>4,648,628.00</b>

\*Assumes no fire suppression required, that top chord glue is adequate, no major additional defects and that the contingency provided in the estimate is adequate to cover WSST, permit fees and other items not currently considered.

ITEM – ROOF STRUCTURE		COST ESTIMATE
DOH COST ESTIMATE	\$	2,368,960.00
INFLATION – 2015 TO 2024 DOLLARS	\$	777,492.00
ASBESTOS PRECONSTRUCTION REPORT	\$	10,000.00
ASBESTOS REMEDIATION	\$	65,000.00
STRUCTURAL DESIGN – ESTIMATE ONLY	\$	95,000.00
CONSTRUCTION MANAGEMENT SERVICES	\$	64,000.00
<b>TOTAL*</b>	\$	<b>3,380,452.00</b>

\*Assumes no fire suppression required, that top chord glue is adequate, no major additional defects and that the contingency provided in the estimate is adequate to cover WSST, permit fees and other items not currently considered.

**ITEM – ROOF STRUCTURE****COST ESTIMATE**

DOH COST ESTIMATE	\$	3,047,006.00
INFLATION – 2015 TO 2024 DOLLARS	\$	1,000,027.00
ASBESTOS PRECONSTRUCTION REPORT	\$	10,000.00
ASBESTOS REMEDIATION	\$	65,000.00
STRUCTURAL DESIGN – ESTIMATE ONLY	\$	124,000.00
CONSTRUCTION MANAGEMENT SERVICES	\$	82,000.00
<b>TOTAL*</b>	<b>\$</b>	<b>4,328,033.00</b>

\*Assumes no fire suppression required, that top chord glue is adequate, no major additional defects and that the contingency provided in the estimate is adequate to cover WSST, permit fees and other items not currently considered.

Respectfully submitted,

Danielle Escamilla, Senior Planner  
**WESTERN PACIFIC ENGINEERING & SURVEY, INC.**