EXH. SB-06
DOCKET TP-25____
2025 PSP GENERAL RATE CASE
WITNESS: SCOTT BREWEN

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND PILOTS,** **Respondent.**	**Docket TP-25____**

FIFTH EXHIBIT (NONCONFIDENTIAL) TO THE PREFILED DIRECT TESTIMONY OF

SCOTT BREWEN

ON BEHALF OF PUGET SOUND PILOTS

JULY 29, 2025

PSP - PRA TJN - 3 Jun 22

Juan de Fuca **Refit Recommendations**

	Above Deck / Main Deck Level	Action	Source	**2022 EST**	**2024 EST**
1	Remove Fendering System-Tires, tire support brackets, D Rubber. Replace or repair components with new if needed. Check hull and deck structure covered by fendering system and repair as needed if deficiencies are found. Repair elongated holes in guard strake (use GPO3 bushings) where needed. When re-installing fender system components, rebed all metal brackets and fastenings. Use new 316L stainless bolts, washers, and nuts.				T&M
2	Re-surface main deck and flybridge deck using provided coating system specifications for type of paint, color and grit		NBC	$22,000	$27,500
3	Remove all exterior bedded and through-bolted metal brackets, railings, fixtures, hardware, and deck hatch bases. Prepare surfaces and openings for re-bedding and re-attachment of same. Repair or replace metal items with like if damage or deterioration is evident. Re-attach with 316L SS bolts, washers, and nuts.		NBC	$11,000	$13,750
5	Repaint Deckhouse and mast using provided coating system specifications for type of paint, color, and lettering.		PLTPS		$125,000
6	Replace all electrical plugs and switches,low and high voltage. Inspect Pauluhn fixtures for condition to determine if they are reusable.				T&M
7	Forepeak deck hatch - remove hatch ring and re-bed. Replace gasket and bushing for handle. Service lubricate and replace other parts as needed.		NBC	$1,920	$2,400
8	Replace gasket, lubricate and adjust dogs for hatch to anchor storage compartment forward of windshield.			$960	$1,200
9	Remove life sling units and brackets on foredeck.			$300	$375
10	Replace and rewire House Side Deck Lighting with LED lights.		MP&C		T&M
11	Replace Liferafts (with owner provided) Allow for new brackets.	Yes			T&M
12	Repair dogged access panel and replace gasket in aft control station pedestal to stop leaks.				T&M
13	Add welded stn stl strut from control station pedestal to hand rail immediately aft, to support pedestal and strengthen. (some cracking at deck)				
	SUBTOTAL			**$36,180**	**$170,225**
	Flybridge Level				
1	Rebuild flybridge console to owner spec. Fabricate watertight cover to contain flybridge electronics and controls.				T&M
2	Replace flybridge VHF radio.		MP&C	$1,000	$1,250
3	Remove speakers. Plug speaker penetrations in console face.		NBC	$960	$1,200
4	Remove, refurbish, and reinstall searchlights.			TBD	T&M
5	Remove diving board hinges, inspect site for possible leaks, fix leaks, re-install. Repair missing diving board latch, port side aft. Replace cables, damaged swage fitting. Lubricate slam latches or replace with a better one to avoid future damage.		NBC	$4,280	$5,350
6	Improve wireways and ducting penetrations through wheelhouse roof under console to prevent water from using those pathways. Remove abandoned circuits. Address condensation issue/add ventilation.				T&M
7	Enclose new Hamilton Control Heads per Tim Nolan Marine Design plans (raised tilted panel and Bread Box cover).	Yes		$5,500	$6,875
	Remove Mast. Strip down of all electronics, bolted bracketing, wiring. Rebuild or replace hydraulic cylinder, replace hydraulic fittings and hoses. Surface blast, repair deteriorated metal, prep for new coating system inside and out.				
8	Remount new electronics package.			$8,300	$10,375
9	Rebuild or replace horn with similar unit.			t.b.d.$200	
10	Replace both Bolsters in Boatmen steering stations.			$800	$1,000

11	Remove HVAC Blowers and replace with new under flybridge console. Inspect and replace ducting.			$8,000		$10,000
12	Renew self-adhesive non-skid on aluminum hatches, main deck.				T&M	
13	Replace Hepworth Windshield Wipes. Blades, linkage, motors, hoses.			$5,000		$6,250
	SUBTOTAL			**$33,840**		**$42,300**

Inside Wheelhouse

1	Remove headliner, wall panels , associated firring, wiring, piping, and ducting. Inspect to identify and remediate leaks from above. Watertest upon completion.			$3,000		$3,750
2	Inspect console framing and structure for deterioration and water damage. Repair or replace as needed.			$2,500		$3,125
3	Remove (carefully) aft corner cabinet modules and store for subsequent re-installation.				T&M	
4	Inspect all high and low voltage electrical wiring, top to bottom. Plan for 25% replacement.		MP&C	See wiring below	T&M	
5	Inspect all electrical plugs and switches – high and low voltage. Plan for 25% replacement.		MP&C	$5,000		$6,250
6	Re-use Eknes passenger seating. Replace cushions for seating with new, if needed, from manufacturer.		PSP			$1,500
7	Replace Helm and Copilot Seats. (Upgrade to Stidd?)	Yes	PSP	$24,000		$30,000
8	Replace Sliding stairway hatch UHMW guides. Upgrade to Nylatron			$1,800		$2,250
10	Install complete new communication and nav-electronics packages.		MP&C			$73,787
11	Remove radio modems, asscoiated equipment, and wiring.		MP&C	$3,000		$3,750
12	Replace all lighting fixtures with marine grade LED lighting. Function, switching, color, and dimming schemes should be duplicated.		MP&C	$11,950		$14,938
13	Install New Foor Covering, similar to original product.			$57,000		$71,250
14	Engineer and install HVAC ductwork for new system.			$15,600		$19,500
15	Inspect Wheelhouse Entrance Door for condition and watertightness. Replace gasket.			$500		$625
16	Replace wall panels and headliner with new. Same appearance and materials if possible. Firring as needed.		labor only	$15,000	materials	$18,750
	SUBTOTAL			**$139,350**		**$249,475**

Below Deck - All Spaces

1	Remove sound treatment material in overhead and on side shell as needed to repair or install other equipment. Allow for up to 25% replacement.			$57,200		$71,500
2	Inspect all below deck wiring. Replace as needed. Allow for up to 25% replacement.		MP&C	See wiring below	T&M	
3	Replace all light fixtures with marine grade LED light fixtures to provide similar or better / brighter lighting, both low voltage and high voltage systems.		MP&C			$2,000
4	Service all WT bulkhead door hatch latch mechanism and hardware. Replace all sealing gaskets. Check to make sure door is securely bedded and bolted to bulkhead surfaces.					$1,500
5	Check diaphragm material for soundness where bulkheads and deck meet to make watertight connection inboard of fenderstrake. (Should be elastic, not brittle)					$1,000
6	Clean and recoat all prevously painted surfaces.					$10,000
	SUBTOTAL			**$57,200**		**$86,000**

Bilges

1	Check all high bilge level alarm sensors for condition and function. Replace if necessary.		MP&C	included above		
2	Remove Water Puppy on-demand bilge pump system. Remove plastic piping. Repair all holes where system penetrated bulkheads to restore watertight integrity of compartments.	YES		$2,000		$2,500
3	Clean and recoat all prevously painted surfaces.				T&M	
	SUBTOTAL			**$2,000**		**$2,500**

Forepeak Void

1	Inspect Watertight Hatch and deck ring. If required, remove hatch ring and re-bed. Replace gasket and bushing for handle. Service lubricate and replace other parts as needed.		$4,000	$5,000
2	Clean and recoat all prevously painted surfaces.		$10,400	$13,000
	SUBTOTAL		**$14,400**	**$18,000**

Storeroom

1	Update CO2 system and components as needed. Remove bottles for pressure check and re-certification. All components of fire suppression and engine room air intake and exhaust shutdown system to be updated.		$10,000	$12,500
2	Inspect potable water tank mounting. Remove and Re-bed deck fill where leaking. Replace fill hose and clamps.		$2,500	$3,125
3	Clean and recoat all prevously painted surfaces.		$5,500	$6,875
	SUBTOTAL		**$18,000**	**$22,500**

Head

1	Inspect Incinolet. Relocate incinolet within space.		$4,000	$5,000
2	Clean and recoat all prevously painted surfaces.		$4,500	$5,625
	SUBTOTAL		**$8,500**	**$10,625**

Stairwell and main bus/breaker panel space

1	Inspect Watertight Escape Hatch. If required, remove hatch ring and re-bed. Replace gasket and bushing for handle. Service lubricate and replace other parts as needed.			$600
2	Clean and recoat all prevously painted surfaces.		$3,500	$4,375
	SUBTOTAL		**$3,500**	**$4,975**

Tool Room

1	Inspect Bilge Pump. Replace or re-build pump as needed. Check motor.		$1,500	$1,875
2	Clean and recoat all prevously painted surfaces.		$7,500	$9,375
	SUBTOTAL		**$9,000**	**$11,250**

Fuel Tank Room

1	Inspect fuel tanks in place. (look for signs of corrosion in sump) Repair if needed.	tbd	$5,500	$6,875
2	Inspect condition of fuel level gauges.	tbd	$1,100	$1,375
3	Replace all valves and hose.		$3,500	$4,375
4	Clean and recoat all prevously painted surfaces.		$7,500	$9,375
	SUBTOTAL		**$17,600**	**$22,000**

Engine Room

1	Check WT Door between Engine Room and Pump Room for tightness and strength. Make a filler block where WT BHD has been cut away	Inspect boats to locate	$3,500	$4,375
2	Check Blue Sky Hatch Bases for watertight integrity. Clean all dog fastening hardware, inspect and replace as necessary if deformed or damaged. Replace gaskets with new material.		$5,500	$6,875

3	Upgrade engine ventilation system to Delta T to reduce pressure drop in engine room and reduce rise in temperature. Upgrade will include new moisture eliminator intakes in deckhosue buttresses, and marine grade Halon-activated shutters, replacing Munters demisters and current shutters. Kanalflakt fans in aft dorade boxes will be replaced with marine grade variables speed fans and marine grade fire dampers activated by the fire suppression system. New system is automatic and activated by sensors.	NBC	$50,000		$62,500
5	Replace Lube Oil Spinners and metal particle detectors.	PSP		T&M	
6	Retain fuel manifolds w/ filters.		$3,500		$4,375
7	New MAN D2862LE435 Tier III Port & Starboard Engines	NL P&E			$413,938
8	New Twin Disc MG6599SC Reduction Gears	NL P&E	$157,074		$180,973
9	Repower Ancillary Parts and MAN Engine Technician Labor	NL P&E	$28,651		$28,651
10	Install new drivlines per engineering spec				$14,000
11	Replace Anodes	JS	$1,700		$2,125
12	Replace bulkhead shaft seals.			T&M	
13	Replace engine mounts with new units.			T&M	
14	Retain Eco Vent Crankcase Blowby Filter units above engines. Refurbish for reinstall. Take apart, clean, paint and replace filter elements. Replace all hose and soft connector fittings.	NBD		T&M	
15	Replace heat wrapped exhaust piping per engineering specifications.			T&M	
16	Replace all hoses in engine room.			T&M	
17	Replace Hamilton Jet/Engine Control Modules with AVX	HWJ	$40,000		$50,000
18	Rough Estimate of Install of Tier III Package				$500,000
	SUBTOTAL		**$289,925**		**$1,267,812**

Waterjets, pump room & overhang

1	Inspect Waterjet units and repaired as necessary depending on results of inspection. Complete refurbishment of waterjet hydraulic system.	HWJ	$42,502		$53,128
2	R&R Cathodic / Corrosion Monitoring system			T&M	
3	R&R waterlift mufflers and exhaust piping components as necessary.		$25,000		$31,250
4	Remove and Re-bed Watertight Hatch Deck Ring. Replace Hatch Gasket and service or replace hardware needed.		$3,500		$4,375
5	Remove and Replace Deteriorated Insulation.			T&M	
6	Remove and Replace flood light glass windows in transom with glue-in style glass	NW Plastics		T&M	
7	Replace older halogen flood light fixtures with comparable or brighter LED fixtures.	MP&C	$1,350		$1,688
8	Clean and recoat all prevously painted surfaces.		$7,500		$9,375
	SUBTOTAL		**$79,852**		**$99,815**

Hull – Sideshell – Transom and Bottom

1	Inspect all outside hull surfaces for damage or deterioration and repair as necessary. Run moisture check on all surface below waterline.		tbd		
2	Repaint hull, from waterline to deck level using provided coating system specifications for type of paint, color, and lettering.	PLTPS	$37,500		$46,875
3	Remove bottom paint and recoat using provided coating system specifications for type of paint, color.	PLTPS			$60,000
4	Disassemble manlift. Inspect for wear and replace metal and HDPE bushings and bearings as needed.			T&M	
5	Remove, Replace and Re-bed all through hull fittings. Check hull penetration for water incursion.			T&M	
6	Add Humphree Interceptors per customer spec to outboard edges of frog perch	TJN/JPS	$13,000		$16,250
7	Install Humphree Actuator in custom WT box on frog perch	TJN/JPS	$18,000		$22,500
	SUBTOTAL		**$68,500**		**$145,625**

Wiring General

Inspect all high and low voltage electrical wiring, top to bottom of vessel . Plan for 25% replacement.	MP&C	**$203,403**	**$254,254**

Shipyard Costs

Blocking: Block vessel, connect shore power, and set up stairs. (Remove when complete)	$5,600
General Protection, Safety & Ventilation: Vessel safety inspections. Set up safety lines. Cover open hatches.	$1,825
Haul out and Launch	$1,850
Cranes for generators and engines	$6,060
Facility fee at $185 per day fpr 180 days	$33,300
SUBTOTAL	**$48,635**

TOTAL		**$ 2,455,990.56**
Time and Materials Est. - Add 25%		**$ 613,997.64**
		$ 3,069,988.20
Sales Tax @ current rates for Port Angeles		**$ 292,141.00**
		$ 3,362,129.20

Notes:

1 The addition of the Humphree Interceptors is a way to improve speed. Very effective on Long Beach Pilot Boats, increasing speed by as much as 2 knots in the light condition in the 18 knot range.

2 Source Initials:
JS Joe Semler
TJN Tim Nolan
JPS Jacobsen Pilot Service
MP&C Marine Power & Controls
NL P&E NL Power & Energy
PLTPS Platypus

3 In some cases (Liferafts, Gearboxes, Waterjets) there are A and B options for the same item number, indicating that there is a choice between "Service" vs "Replace" or "Service" vs "Rebuild", in which the cost of one or the other should be counted, but not both.

4 Northen Lights 25kW Generators are currently unavailable for US market. 30kW Generators require 4" exhaust

5 Wiring cost based on 25% of Nordlund's Time and Materials Estimate to dewire/rewire entire boat