Bristol Harbor Group, Inc.

Casco Bay Island Transit District- Down Bay Ferry Design

Cory Wood, Vice President

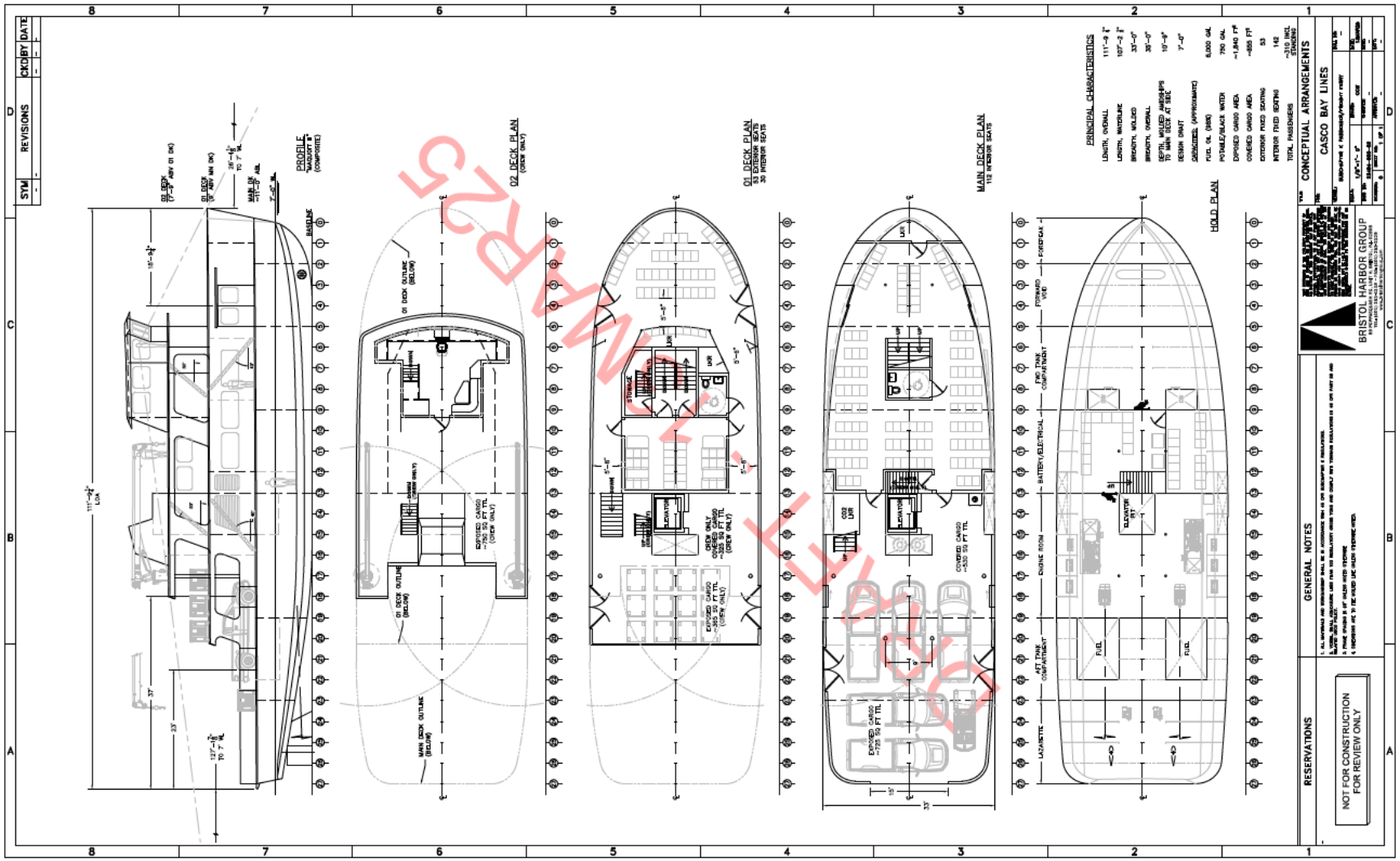
20MAY25

Casco Bay Lines
Portland, Maine

Project Update

- MAQUOIT III design development – *ONGOING*
- Weights/stability – *ONGOING*
- Propulsion System Options & Evaluation – *ONGOING*

Conceptual Arrangement



Our Core Purpose is to… Create.

Principal Characteristics

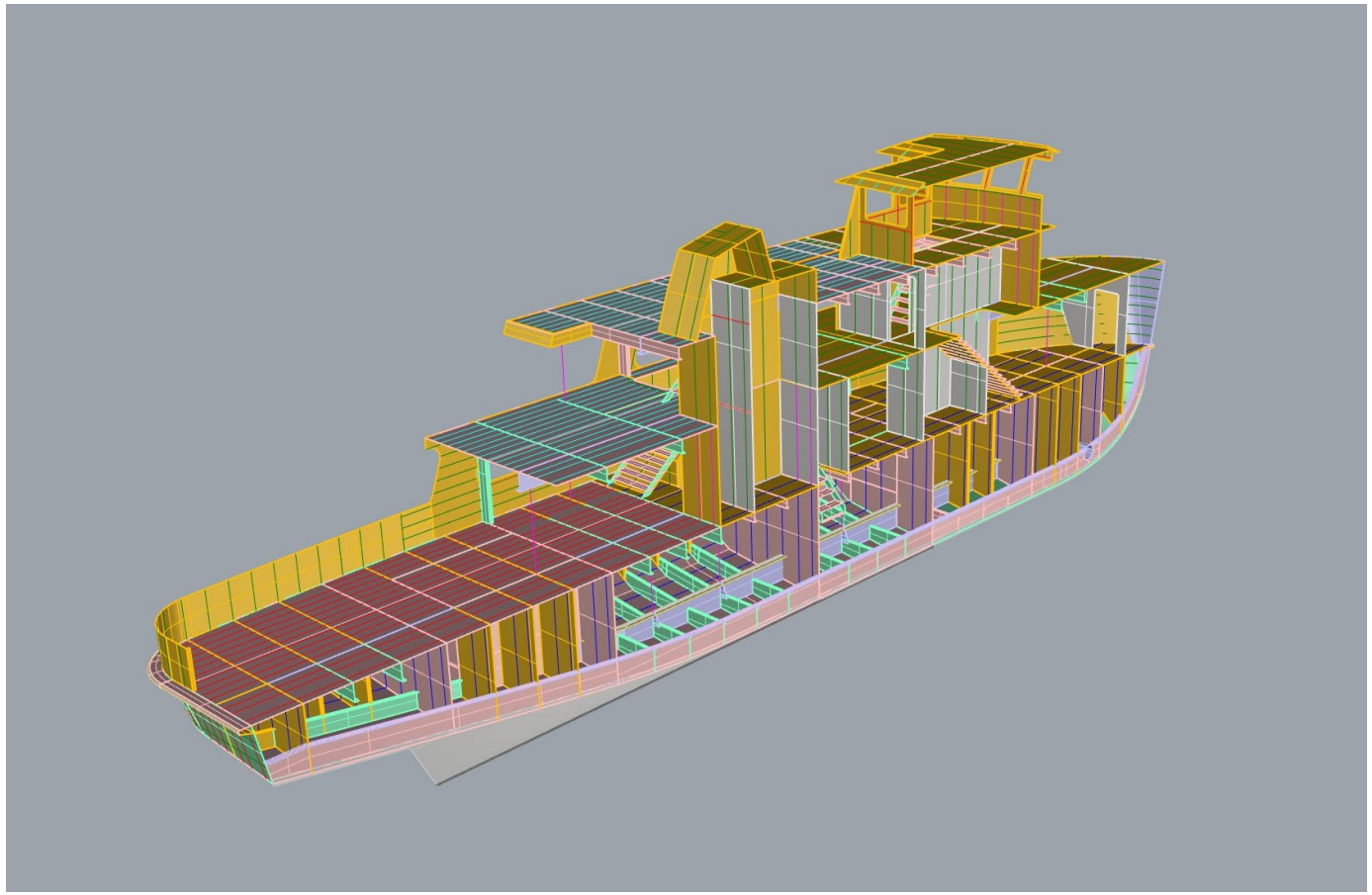
PRINCIPAL CHARACTERISTICS

LENGTH, OVERALL	111'–9 ¼"
LENGTH, WATERLINE	107'–2 ½"
BREADTH, MOLDED	33'–0"
BREADTH, OVERALL	35'–0"
DEPTH, MOLDED AMIDSHIPS TO MAIN DECK AT SIDE	10'–9"
DESIGN DRAFT	7'–0"
CAPACITIES: (APPROXIMATE)	
FUEL OIL (98%)	6,000 GAL
POTABLE/BLACK WATER	750 GAL
EXPOSED CARGO AREA	~1,840 FT^2
COVERED CARGO AREA	~855 FT^2
EXTERIOR FIXED SEATING	53
INTERIOR FIXED SEATING	142
TOTAL PASSENGERS	~310 INCL STANDING

Our Core Purpose is to… Create.

Weight Budget Development

- Developed 3D structural model
- Used to define weight budget based on historical data
- Weight budget is not the same thing as an estimate



Weight Budget

SUMMARY
Lightship Weight Estimate

ESWBS ACCOUNT	DESCRIPTION			WEIGHT LBS	LCG ft	TCG ft	VCG ft	L-Mom ft-lb	T-Mom ft-lb	V-Mom ft-lb
300	Structure			386086.4	51.37	0.00	12.73	19833258	0	4914880
400	Outfit & Furnishing			95036.7	38.00	0.00	19.00	3611393	0	1805696
500	Special Features			0.0	0.00	0.00	0.00	0	0	0
600	Machinery			89096.9	62.00	0.00	8.00	5524005	0	712775
700	Electrical			23759.2	50.00	0.00	12.00	1187958	0	285110
	Subtotal =			593979.1	50.77	0.00	12.99	30156615	0	7718461
	Subtotal (LT) =			265.2	50.77	0.00	12.99	13463	0	3446
		WT	VCG							
	Design/Build Margin	8%	0.25	47518.3	50.8	0.0	16.4	2412529	0	777851
	Total Lightship Weight =			**641497.4**	**50.77**	**0.00**	**13.24**	32569144	0	8496312
	Total Lightship Weight (LT) =			**286.4**	50.77	0.00	13.24			

Preliminary Stability Assessment

- Assumes protected waters similar to MAQUOIT II
- Stability assessment included
  - Intact
  - Damage
  - Lifting
- Lifting stability is the limitation

Vessel Comparison - Cargo, Passenger & Total Capacity

(Capacities in pounds; percentages reflect improvement over *Maquoit II* [1])

MAQUOIT II			
	Cargo (lb)	Passengers (lb)	Total (lb)
300 Passengers	60000	55500	115500
399 Passengers	40000	73815	113815

MAQUOIT III			
	Cargo (lb)	Passengers (lb)	Total (lb)
310 Passengers (Full Load)	74000 123%	57350 103%	131350 114%
178 Passengers (Increased Cargo)	106000 177%	32930 59%	138930 120%

Notes:

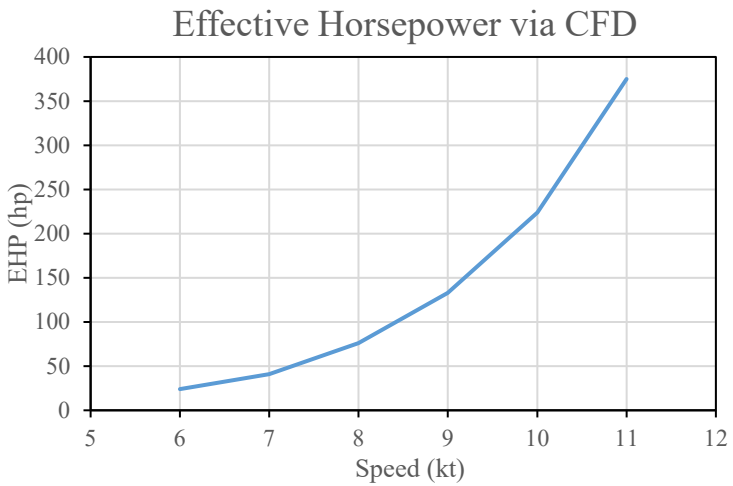
1) All percentages are relative to Maquoit II 300 Passenger case, as it reflects her maximum cargo and deadweight capacity.

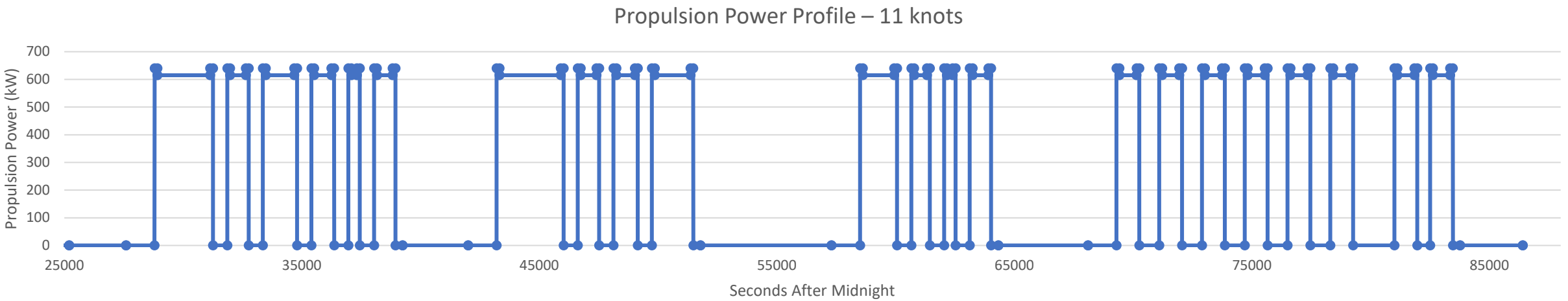
2) Maquoit II is not subject to lifting stability due to her cranes' limited off-vessel reach; Maquoit III is subject to lifting criteria, significantly affecting carrying capacity.

Propulsion System Options & Evaluation

Operational Profile Assumptions:

- Uses existing vessel schedule
- 8, 9, 10 & 11 knot transit speeds studied
  - 8 knots was minimum speed to enforce 30-minute load and unload time in Portland
- Departure time from Portland fixed. Other departure times dependent on transit speed.
- 10-minute load/unload time at each location
- 2-minute maneuvering/acceleration/deceleration
- Diesel electric without energy storage has two generators online during transit



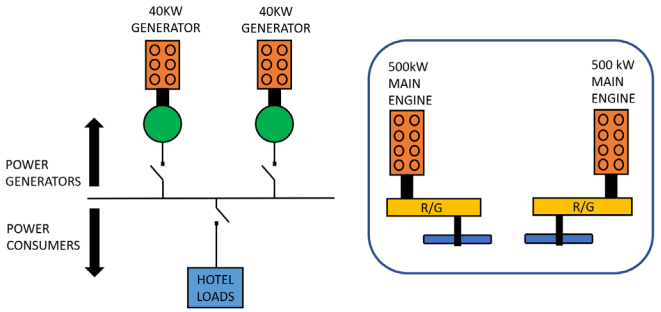


Propulsion System Options & Evaluation

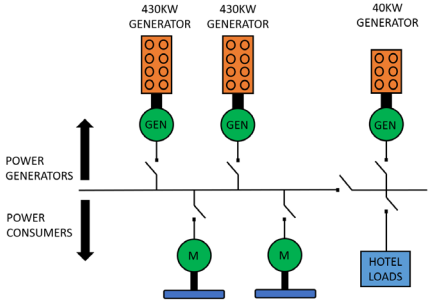
Propulsion Systems Studied:

1. Diesel mechanical system with 2 C18 engines and two house generators
2. Diesel electric system with 2 C18 generators and one house generator
3. Diesel electric system with 3 C9 generators and one house generator
4. Diesel electric system with 2 C18 generators and 1,000 kWh of NMC batteries
5. Diesel electric system with 2 C18 generators and 1,000 kWh of LFP batteries

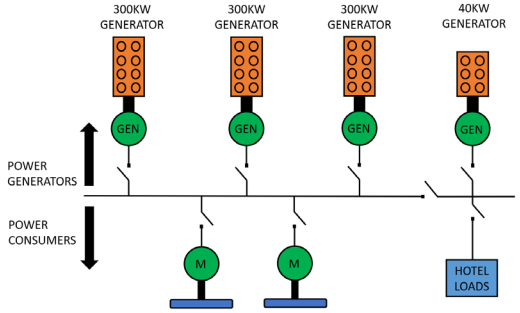
MECHANICAL:



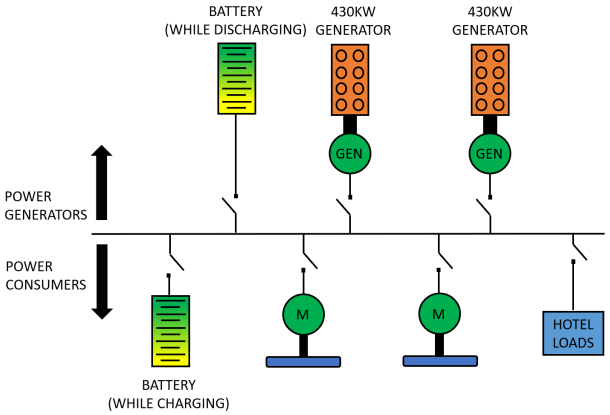
DE (2x C18s):



DE (3x C9s):



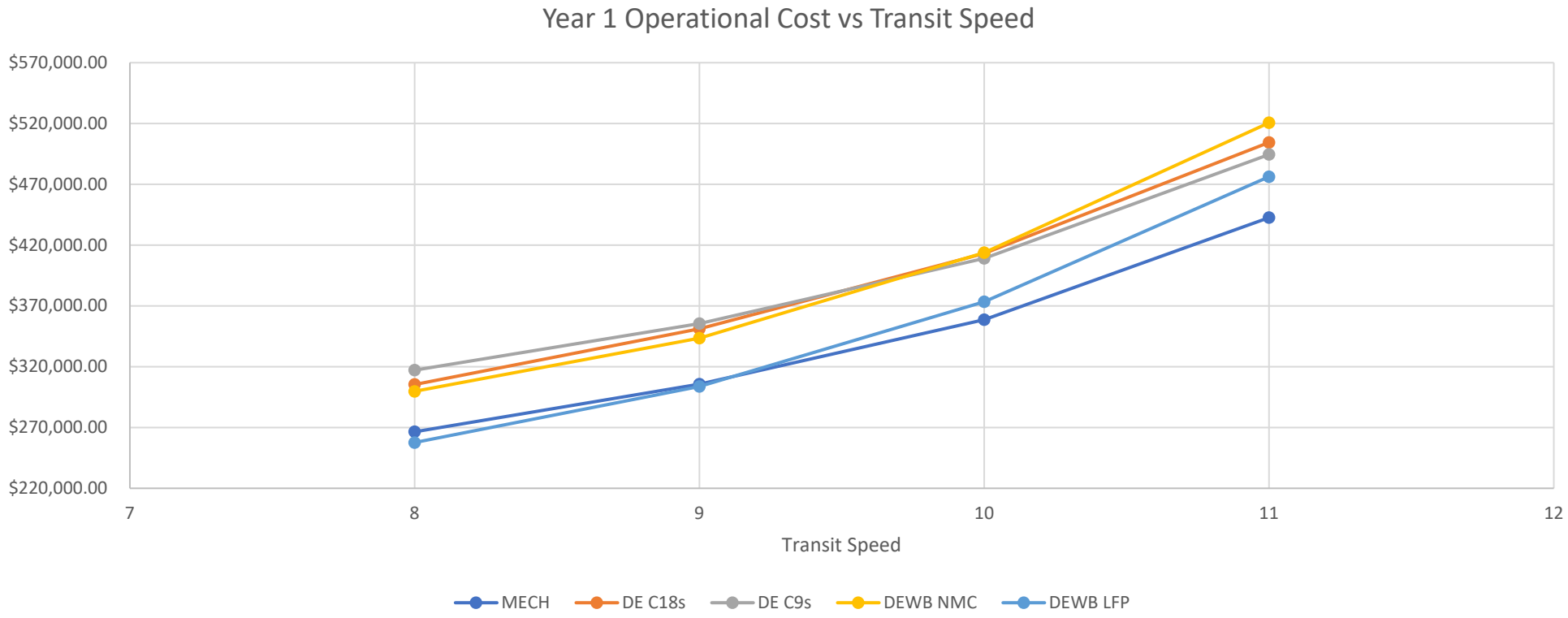
DEWB:



Propulsion System Options & Evaluation

Operational Cost:

- Includes fuel costs
- Includes engine/generator maintenance cost based on engine hours
- Includes battery replacement costs



Propulsion System Options & Evaluation

Total Lifetime Cost:

- Includes relative capital costs
  - Only propulsion system components that vary across systems (engines, generators, electrical equipment, batteries, etc..)
- 30 year lifespan of vessel (assumes average inflation of 2.57%)
- No inflation included on battery replacement