



Winter Schedule Savings Concepts

Two ways to lower winter operating costs, with the impacts shown plainly

NOTE: These are draft concepts that have been developed at the request of board members to get a sense of what additional options are available beyond what was considered during last year's review of the winter schedule.



Two Concepts at a Glance



CONCEPT 1

Slow the winter Peaks boats

Run most winter crossings at reduced speed. Morning commuter boats stay at full speed; first and last boats stay where they are.

~\$37K

per winter in fuel & electricity,
~16,000 gallons of energy saved

Riders notice: slightly longer rides on off-peak trips



CONCEPT 2

Combine the late-evening runs

Retire the separate 8:30 PM down bay boat and fold Long, Great Diamond, and Little Diamond into an evening Peaks sailing.

~\$66K

per year, Sun–Thu (preliminary staff estimate).
A Fri/Sat extension could reach ~\$92K.

Riders notice: last boat moves to 5:45 PM for Cliff and Chebeague

Together, the two concepts are worth roughly \$100,000 per year in the base case.



Concept 1: Slow Steaming, in Plain Terms

Same route, same boats, a slower pace.

Protected

The first two morning boats keep full speed and today's exact times. Commuters see no change.

Preserved

First boat of the day and last boat home stay within a few minutes of today's schedule.

Slowed

All other winter crossings run about 4 knots slower. A crossing takes roughly 10 extra minutes.

Consolidated

The day still fits: 13 round trips Sun–Thu (now 14) and 14 Fri/Sat (now 15). One lightly used evening trip absorbed each day.

Why Going Slower Saves So Much

A ferry spends its energy pushing water out of the way. Push twice as fast and the water pushes back four times as hard.

The rule of thumb

The energy to make each crossing rises with the square of speed. Drop from 11 knots to 7 and the cruising energy falls to about 40%, a 60% cut on the part of the trip that speed controls.

Why it isn't the whole fuel bill

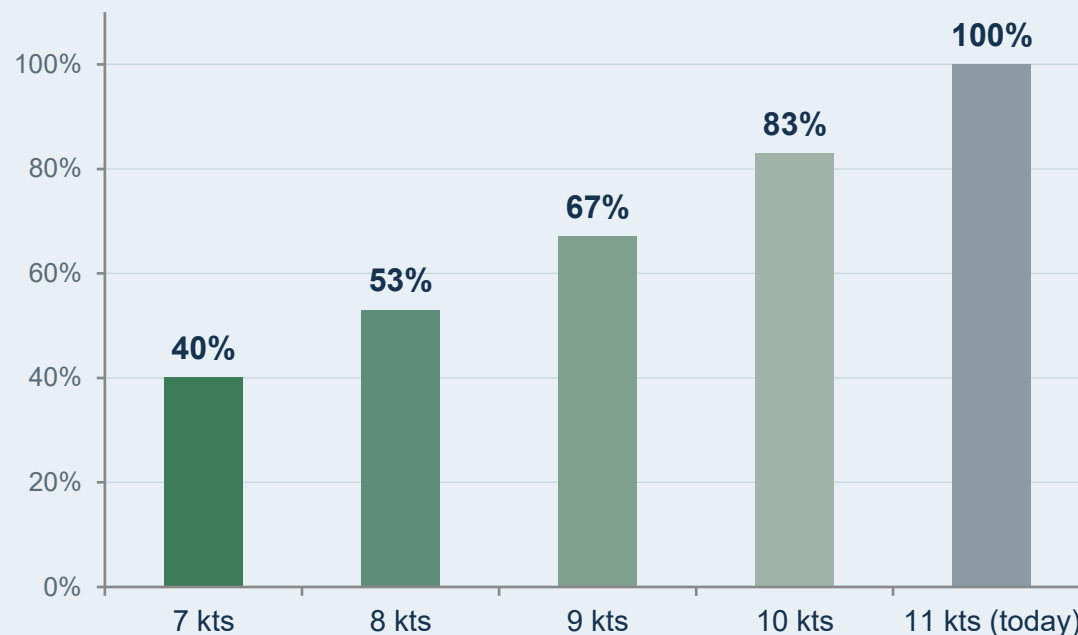
Part of every trip is docking, maneuvering, and keeping the boat warm and lit. That doesn't change with cruise speed. Net effect: roughly a third less energy per slowed trip.

The price of it

Time. The crossing takes about 10 minutes longer, which is why the busy commuter runs stay fast and the schedule gives back one lightly used trip a day.

Energy to cross to Peaks, by cruising speed

Cruising energy per 2.5-mile crossing, as a share of today's 11-knot trip



11 kts → 7 kts: 60% less cruising energy, every slowed crossing, all winter

Concept 1: What the Savings Look Like

Battery Steele changes the math, for the better and the smaller.

~16,000 gal

of energy saved per winter season

about a third of the fuel these runs burn today

~\$37K

combined dollar savings per winter

the Maquoit's ~5,000 diesel gallons (~\$18K) plus
~\$19K of avoided electricity on Battery Steele's
runs

~\$56K

**what the same plan would save in an all-
diesel fleet**

shown for context: the hybrid already banks most
of that value every day it operates

Why the hybrid shrinks the headline number

Battery Steele covers the car ferry runs, so slowing those trips saves electricity at pennies per kilowatt-hour instead of diesel at \$3.50 a gallon. The energy saved is the same; the dollars are smaller because the hybrid has already made those trips cheap. The hard-dollar diesel savings concentrate on the Maquoit's evening runs, which stay diesel.

Estimates from staff's fuel model using actual per-trip burn rates and Battery Steele's propulsion study.

Old vs. new, sailing by sailing

Portland departures, old vs. new, with the new return time from Peaks.

Held fast

Slowed

Moved

Dropped

Sunday – Thursday

#	Old	New	Peaks	Status
1	5:45a	5:45a	6:15a	Fast
2	6:45a	6:45a	7:15a	Fast
3	7:45a	7:45a	8:25a	Slowed
4	9:30a	9:30a	10:10a	Slowed
5	10:45a	10:45a	11:25a	Slowed
6	12:15p	12:15p	12:55p	Slowed
7	2:15p	2:15p	2:55p	Slowed
8	3:15p	3:30p	4:10p	Moved
9	4:30p	4:45p	5:25p	Moved
10	5:35p	6:00p	6:40p	Moved
11	7:15p	7:15p	7:55p	Slowed
12	8:15p	8:30p	9:10p	Moved
13	9:15p	—	—	Dropped
14	10:30p	10:00p	10:40p	Moved

Friday & Saturday

#	Old	New	Peaks	Status
1	5:45a	5:45a	6:15a	Fast
2	6:45a	6:45a	7:15a	Fast
3	7:45a	7:45a	8:25a	Slowed
4	9:30a	9:30a	10:10a	Slowed
5	10:45a	10:45a	11:25a	Slowed
6	12:15p	12:15p	12:55p	Slowed
7	2:15p	2:15p	2:55p	Slowed
8	3:15p	3:30p	4:10p	Moved
9	4:30p	4:45p	5:25p	Moved
10	5:35p	6:00p	6:40p	Moved
11	7:15p	7:15p	7:55p	Slowed
12	8:15p	8:30p	9:10p	Moved
13	9:15p	9:45p	10:25p	Moved
14	10:30p	—	—	Dropped
15	11:30p	11:05p	11:45p	Moved



Concept 2: One Late Boat Instead of Two

The winter evening, Sunday–Thursday: today two crewed boats leave Portland an hour apart, both mostly carrying people home.

TODAY

Peaks boat

7:15 PM

8:15 PM

9:15 PM

10:30 PM

Down bay boat

8:30 PM *a second boat and crew for five islands*

PROPOSED

Peaks boat

7:15 PM

8:15 PM

9:15 PM

10:30 PM

Down bay boat

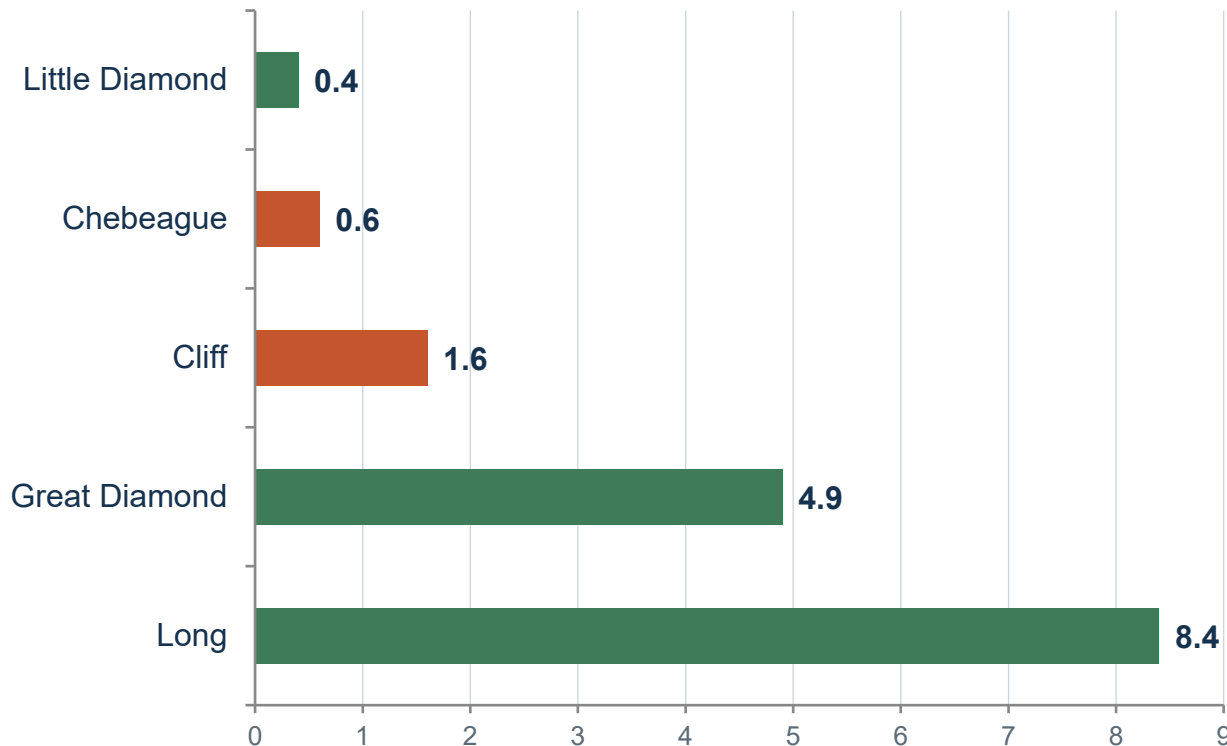
one sailing continues past Peaks → Little Diamond → Great Diamond → Long
8:30 boat retired; one vessel and crew cycle comes off the evening

Peaks riders get off first, so their trip is unchanged. Which sailing carries the loop, the 7:15 or the 8:15, if adopted, should be discussed at length with islanders.



Who Rides the 8:30 Down Bay Boat

About 16 riders a night. Roughly 14 keep a late boat under this concept; about 2, on Cliff and Chebeague, get an earlier last boat.



Average riders per run, both directions, winter Sun–Thu, FY2024–FY2026. Green: keeps a late boat. Orange: earlier last boat.

Keep a late boat

Long, Great Diamond, and Little Diamond, about 13.7 of the ~15.8 nightly riders, move to the combined sailing.

Earlier last boat

Cliff (1.6/run) and Chebeague (0.6/run), about 2 riders a night. Their last Portland departure becomes 5:45 PM.

What that adds up to

Roughly 400 Chebeague and Cliff person-trips per winter ride the 8:30. Small numbers, but real riders, shown squarely two slides ahead.

Diamond Cove: no change

The 8:30 is not a scheduled Diamond Cove stop. Its last boat is already the 4:15 PM, and this concept does not move it.

Plenty of room

The Peaks evening boat carries ~30; the combined load is ~40 on a vessel licensed for far more.

Concept 2: Two Versions, Two Price Tags

BASE: SUNDAY–THURSDAY

~\$66K / year

Consolidates five nights a week. Friday and Saturday stay exactly as they are today.

Cliff and Chebeague's last departure becomes 5:45 PM those five nights, the schedule those islands had until 2019.

Why Fri/Sat is different: those nights the Peaks run uses the car ferry, which can't make the loop stops. No vehicle service is touched.

EXTENDED: ALL SEVEN NIGHTS

~\$92K / year

Adds Friday and Saturday nights, but only by ending evening car service to Peaks on those nights.

The 5:45 PM last departure would then apply to Cliff and Chebeague all seven nights.

Real trade-offs. The next two slides show exactly who is affected and by how much.

Figures are staff's preliminary direct-cost estimates (crew, fuel, vessel hours). A detailed build-up follows if the Board wants either version pursued.



The Fri/Sat Trade-Off: Vehicles

A typical winter Friday or Saturday night: every car on the 7:15 PM and later boats, drawn to scale.

7:15 PM



7.0 avg

8:15 PM



3.9 avg

9:15 PM



2.9 avg

10:30 PM



1.8 avg

11:30 PM



0.7 avg

≈ 16 vehicles per night, both directions, mostly islanders bringing a car home

800–1,100 per winter

Total vehicles moved on the late Fri/Sat boats each season.

Half ride the 7:15

By the 11:30, most runs carry no cars; 1 in 6 late runs carries zero vehicles.

Trending down

From ~18 vehicles a night in winter 2022/23 to ~13 this past winter.

A middle path exists

Keep the 7:15 as the last car ferry and convert only the later runs, preserving the sailing that carries half the cars.

Four winters of car ferry records, FY2023 to FY2026 (Oct 14 – May 21 Fridays & Saturdays)



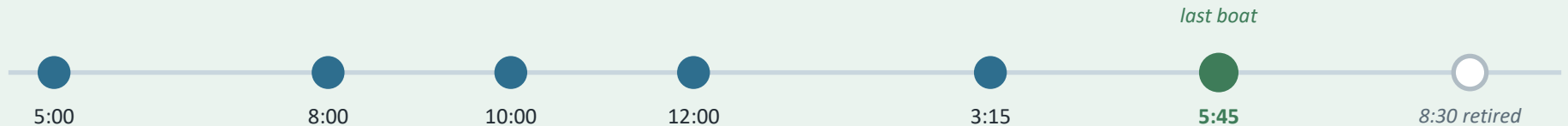
What This Means on Cliff and Chebeague

The honest picture: six of seven daily departures are untouched, and the last boat home moves from 8:30 to 5:45 PM.

TODAY



PROPOSED



2¾ hours

earlier end to an evening in Portland; the real cost of this change for these islands

1.6 + 0.6

average Cliff and Chebeague riders per 8:30 run

~400

Cliff and Chebeague person-trips per winter on the 8:30 boat

2019

the last year these islands had a 5:45 last boat; this restores that schedule, but it is still a reduction