



The Chetzemoka designed by the Eliot Bay Design Group is a derivative of the Island Home. Courtesy Elliot Bay Design Group

## NEWS

# Coast to Coast for New Freight Boat

**Sara Brown**

*Thursday, April 24, 2014 - 8:47pm*

SEATTLE, WASH. — A new Steamship Authority vessel is slated to begin service in May 2016 between the Vineyard, Nantucket and Woods Hole, a quintessentially New England route. But the design process begins across the country, one of many links between the SSA and Washington state.

Elliott Bay Design Group, a Seattle-based firm that designed the ferry Island Home, is in the process of designing the boat line's newest vessel, a freight boat that will carry 384 passengers.

The company was awarded the contract for the new ferry in late December and started work Jan. 5, chief concept engineer John Waterhouse and vice president

of engineering Brian King said at an interview in February at the company's Seattle office.



Vice president of engineering Brian King. — *Sara Brown*

Elliott Bay began by working with the Steamship Authority to determine requirements for capacity and speed. “Its mission, essentially,” Mr. Waterhouse said. They’ll be involved with the project through construction, during which they answer questions and serve as the owner’s representative.

The naval architecture company’s office is on Salmon Bay in Seattle’s Ballard neighborhood. The neighborhood is dotted with maritime businesses and boats bobbed nearby in their winter berths. Except for the Olympic Mountains on the horizon, it looks like the Vineyard ferry’s destined habitat.

A picture of the Island Home is inside the entrance to the office, with a model of the ship’s hull nearby. Models and pictures of Elliott Bay’s other work are scattered around the office. Elliott Bay has been active in ferry design since it was founded in 1988. Their work on the West Coast — “which of course has a lot of ferries,” Mr. Waterhouse said — has translated to the East Coast. The company has done projects from North Carolina to California to Alaska, and has opened offices in New Orleans and Alaska.

Their architectural work includes barges, tugboats and cargo ships. Mr. Waterhouse worked on a restoration of Franklin D. Roosevelt’s presidential yacht.

For the new SSA ferry, the design work comes in phases, beginning with a sonar definition phase and then moving on to a preliminary design phase, Mr. King said.

Then the company moves on to a model test and an analysis and verification test. “It’s the phase that really tests our assumptions and makes sure we are on the right track,” said Mr. King, who is the project manager for the new ferry, which does not have a name.



Inside the Elliot Bay Design Group's company office in Seattle. — *Sara Brown*

This week, SSA general manager Wayne Lamson said the hull design is now being tested by Force Technology in Denmark. Model testing includes measuring hull resistance, wake wash, seakeeping capabilities under a variety of sea conditions and maneuverability, he said, and the tank test report should be completed by mid-May.

“It’s one of the more scientific things we do,” Mr. Waterhouse said. The physical scale model is used to validate calculations. Real world phenomena like turbulence and waves go into defining the resistance of the boat and are challenging to estimate, he said. “So it’s always good to have that physical proof of the concept in many ways.”

Using tools adopted from aerospace and other naval architecture, they are also testing the design on the computer — but they continue to rely on the traditional approach. “It’s not quite at the point yet where you can abandon the model basin,” Mr. Waterhouse said.

After hull testing, they move on to the contract design development, which lasts for several months. “That’s when we get down to all the drawings and specifications,” Mr. King said, that can be sent to a shipyard. They have to make sure the design complies with all safety and regulatory requirements imposed by the Coast Guard and the boat line. Final contract drawings and specifications are expected to be completed by the end of October.

The hull form will be similar to the ferries Martha’s Vineyard and the Nantucket.



Salmon Bay is dotted with maritime businesses and boats bobbed nearby in their winter berths.

— *Sara Brown*

The ferry will replace the freight ferry Governor, and is meant to have the flexibility to serve both the Nantucket and the Vineyard route.

It could also sire offspring of a sort. Elliott Bay designed the Washington State ferry Chetzemoka, launched in 2010. The ferry was named after the chief of the Klallam Indian tribe who died in the late 1800s.

The Chetzemoka is a derivative of the Island Home, which served as the parent design for the other ferry — one of many links between the ferry systems on opposite coasts.

“The Steamship Authority has been a great pleasure to work with,” Mr. Waterhouse said. Mr. Lamson was part of a panel that Mr. Waterhouse helped lead for Washington State ferries, and “provided a peer review of what Washington state was doing.” He praised “the ability of the two coasts to look at what are best practices and how do we improve our systems.”

“They’re really doing well by their customers by having these kinds of discussions and engaging in understanding of how can they all benefit from each other’s experience and move forward,” Mr. Waterhouse said.

“It’s interesting when you get into Islanders and their relationship with the ferry system,” Mr. Waterhouse said. “They want the boat there when they want the boat there but they also see the boat as bringing change to the Island, so you’ve got this dynamic tension going on and that’s true of any Island being served.”

“The Steamship Authority has the challenge of satisfying all of its customers. It can’t just serve one set of interests over another set of interests and I know they work very hard to be good neighbors with all of the community . . . they’re working very hard to try and find that balance and it’s a challenge.”

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