



Bay Environment  
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## **New York Ferry Fleet Expansion Causing Waves**

A year after the September 11 attacks, many New York ferry operators are still running essentially an emergency service. A fleet of new, used, and borrowed vessels have been deployed rapidly to carry commuters across the New York Harbor while subway lines are repaired. The fleet has grown quickly and continues to expand to accommodate public transit needs.

New York Waterway, for example, has taken delivery of 14 new fast ferries over the past two years and 5 more are on order, according to spokesman Pat Smith. The family-owned ferry company operates 33 ferries that transport 66,000 people everyday between New York City and New Jersey.

But along with the recognition of the safety and transportation roles ferries are playing in this post-9/11 world, water transit is also undergoing closer scrutiny for environmental problems it generates. Recently, the New York Times published an article citing the wake problems generated by increased fast ferry traffic in New York Harbor. Air pollution is also a significant problem.

### **Wakes and Waves**

Fast catamaran ferries generate a wake that is steeper and more powerful than that of slower monohull ferries. The wake produces waves that wreak havoc on shorelines, pilings, and other structures. While a fast ferry wake shrinks substantially when the vessel is at optimum speed, traveling at slow speeds on approach to port generates significant wakes that build in height and energy on the way to the shore. In Washington State's narrow Rich Passage, fast ferry wakes grew to as high as 14 feet before slamming into bulkheads and beaches. By court order, ferries were required to slow to 12 knots to prevent property damage on shore.

Slower speeds, careful routing, and vessel design can all be utilized to address wake problems. To address New York Harbor's ferry wake issues, the Stevens Institute of Technology is now evaluating operational and design measures. In fact, recommendations are expected at the end of September. "We are going to look at the hull types, routes, and speeds," said Dr. Michael Bruno, Director of the Davidson Laboratory, an internationally known ocean engineering and naval architecture research facility. "Everyone's aim is to have the ferries as a viable transportation alternative."

## **Air Quality**

Reducing air pollution from fast ferries is a more complex and challenging issue. While most ferry riders assume that leaving their cars behind and taking the ferry to work reduces air pollution, often that is not the case. That's mainly because fast ferries operate on marine diesel engines that have been exempt from federal and state air quality standards. High-speed vessels also burn far more fuel than slower counterparts. Cars and buses are 97 percent cleaner than they were 30 years ago due to air pollution controls, while marine diesel engines have escaped regulation.

New ferry emissions standards don't take effect until 2007, after which new marine diesel engines will be required to be at least three times cleaner than today's vessels. So, while ferry service in New York removes 7,000 cars from the highways each day, cleaner air was not assured when riders chose the fast ferry designs.

In fact, independent studies have determined that today's fast ferries are far more polluting per passenger mile than cars or transit buses. Comparisons between fast ferries on San Francisco Bay with cars and diesel transit buses found high-speed vessels to be anywhere from four to ten times more polluting per passenger mile. For each passenger, the ferries emitted significantly more smog-forming emissions (nitrogen oxides), soot (particulate matter), and total hydrocarbons.

Reports from the U.S. Maritime Administration, California Air Resources Board, CALSTART, and Bluewater Network all found that fast ferries must be fitted with air pollution controls in order to benefit air quality. As a result of these studies, new technologies and fuels are becoming available to substantially reduce air emissions. In San Francisco Bay, ferry planners are mandating that any new ferries built using state funds must be 85 percent cleaner than the upcoming 2007 federal standard. In San Diego, a new low-emissions ferry demonstration project funded with state monies will test biodiesel fuel and particulate matter traps in order to reduce emissions. Beginning January 2003, all passenger ferries in California will be required to use low-sulfur, on-road diesel.

In order to make sure that New York Harbor's air quality is not degraded by a new fleet of fast ferries, policy makers should require that they utilize cleaner fuels and technologies. A first step would be to consult regional air regulators to conduct an analysis of ferry emissions in New York Harbor. Another critical move would be to begin testing, using low-sulfur diesel fuel and biodiesel.

Partnering with private ferry operators in the NY-NJ region would also make sense. New York Waterway, one of the six existing operators, has already begun repowering its fleet with the latest electronically-controlled diesel engines. Its 14 new vessels are powered by the cleanest marine diesels now on the market. But more can and should be done to protect the public health and environment.

“We are looking at biodiesel and natural gas alternatives,” said Smith of New York Waterway. “We expect to keep buying the boats and updating our boats. We are a family boating business. We are always watching for new technology.”

For more information on environmental issues and fast ferries, visit the Bluewater Network website at [www.bluewaternetnetwork.org](http://www.bluewaternetnetwork.org) or contact Teri Shore at [tshore@bluewaternetnetwork.org](mailto:tshore@bluewaternetnetwork.org).