

RISING TIDE for FERRIES

The World's Largest HOVs or Floating Bridges

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A rising tide lifts all boats. This familiar phrase is particularly apt for ferries in the United States today. But what are the forces behind this tide—where does the push and pull come from? The tides of change for ferries are being influenced by transportation decision makers at the national level, at the state level, and by ferry entrepreneurs and associations, as well as by innovations in technology.

Two major federal initiatives—the Transportation Equity Act for the 21st Century (TEA-21) and the Marine Transportation System (MTS)—have contributed to the rising tide of public awareness of ferries. The evidence of a sea change for this mode include the large and complex San Francisco Bay Area Water Transit Initiative; statewide ferry

plans and programs in Massachusetts, Rhode Island, and New Jersey; intermodal ferry-and-bus systems like the New York Waterway; and the issues and controversies arising from the advent of fast ferries on the nation's waters.

National Ferry Study

In response to a Congressional mandate in TEA-21, the Federal Highway Administration (FHWA) is coordinating an interagency National Ferry Study. Partners in the study include the Federal Transit Administration (FTA), the Maritime Administration (MARAD), the U.S. Coast Guard (USCG), and the U.S. Army Corps of Engineers, reflecting Secretary of Transportation Rodney Slater's ONE



Washington State has an active ferry system, serving commuters, sightseers, and commerce.

DOT vision of collaboration among the modal agencies.

This partnership is significant for ferries, which have not had a federal agency “home.” The design, construction, classification, licensing, funding, operation, ownership, and management of ferries—as well as their intermodal links and integration into transportation strategies—have fallen to the separate domains of many agencies at the local, state, and national levels. An early analysis of the jurisdictional agency roles in Boston Harbor, for example, indicated that 161 agencies had some part in the oversight of new ferry projects.

During the past 25 years, national ferry studies have been sponsored by MARAD, by FTA, and by FHWA. Wherever ferries carry vehicles, FHWA has been the lead agency; it administers the Ferry Discretionary Grant program. Wherever ferries are primarily transit vehicles in urban centers, FTA has provided the lead. For example, the agency was the source of 80 percent of the funding for the \$35 million Golden Gate Ferry System in the 1970s. Part of the Golden Gate Bridge Highway and Transportation District, the Golden Gate Ferry System continues to be a model for integrated intermodal transportation.

USCG is the key regulatory agency for vessel inspection, licensing, and rulemaking for sailing in navigable waters or transportation corridors. USCG currently is working closely with the Passenger Vessel Association of the United States on public-private partnerships to shape new rules, new roles, and new directions.

The National Ferry Study will provide valuable information for transportation planners, as well as for Congress, including a national ferry data base, reports on the opportunities for fast ferries and for alternative fuels in ferries, and summary findings from national focus groups.

The focus group participants, drawn from public agency stakeholders and private ferry operators and owners, have represented a wide range of ferry operations: small river ferries that carry only 49 passengers, a hazardous materials ferry that crosses the Detroit River, the 2,500-passenger ferries of Puget Sound and the Washington State Ferries system, the overnight ferries of the Alaska Marine Highway System, and the integrated ferry-and-bus systems of New York City. The ferry systems represented in the focus groups transport millions of passengers, automobiles, bicycles, buses, and trucks each year. Many are critical lifelines to islands, and many are privately operated.

TEA-21 also includes a provision for ferry discretionary funds, which have elicited great interest and spurred applications from many states. Several other TEA-21 funding categories are stimulating interest in ferries: congestion mitigation and air



quality, national park access, intelligent transportation systems, and transportation enhancement.

Marine Transportation System

The MTS report to Congress, published in 1999, noted that the “navigable rivers and canals were America’s first ‘interstate transportation system,’” and called on the myriad agencies, users, and beneficiaries of the nation’s waterways to strengthen the system in the new century.

As defined by U.S. DOT, the MTS “consists of waterways, ports and their intermodal connections, vessels, vehicles, and system users.” The vision statement calls for the MTS to be the world’s most technologically advanced, safe, secure, efficient, effective, accessible, globally competitive, dynamic, and environmentally responsible system for moving goods and people.

The report states that the national waterways annually carry more than 100 million U.S. residents via ferries across 35 states. In addition, 78 million recreational boaters, 5 million cruise ship passengers, 110,000 fishing boats, and military deployment operations sail the waves. The principal activity on the 25,000 miles of U.S. waterways is the movement of “more than 2 billion metric tons of domestic and international commerce,” as well as 3.3 billion barrels of oil. The waterways also include natural resources and wildlife habitats.

Increased traffic congestion has led more people to seek alternative means of transportation. For example, New York’s burgeoning ferry system includes such mainstays as Staten Island ferry (*above*), commuter ferries across the Hudson River to New Jersey, and ferry for sports spectators to Shea Stadium.

The key issues of dredging, preservation and management of the channels, and “minimizing conflicts among land uses along the waterfront and intermodal connections” apply to ferries as well as to cargo and tanker traffic. Ferries are the principal people-moving partners in any plan to transform the national waterways from a critically underserved link to an equal player in the national transportation system. For this reason, the maritime agencies responsible for waterways should participate directly in decision making about transportation funding.

In the meanwhile, the nation’s ferry systems face complex issues, such as the management of waterways traffic, access to intermodal land-based terminals, development along waterfronts, competition for funds, and integration with traditional transportation.

New Understanding of Waterways

The opportunities for moving people as well as goods are important considerations for metropolitan planning organizations shaping new regional plans for waterway corridors. In the Boston area, for instance, one-third of the access routes into the city cross over water. When waterways are seen as surface corridors and therefore as opportunities for transit and intermodal links—instead of as obstacles to transportation—ferry initiatives quickly emerge. In the last 25 years, ferry routes have

grown in Boston, and new routes now are feasible. The principal challenge for Boston ferries is that waterfront development for office and residential use is limiting landside–waterside interchanges.

A new level of understanding of the waterways and of the vehicles using them would approach a waterway as an opportunity for surface transportation rather than as a barrier, or as a variety of high-occupancy vehicle (HOV) lane—it would consider ferries not just as water transit vehicles, but as floating highway bridges, as partners in clean air attainment, as avenues to national parks, and as bicycle trail links.

With a capacity of 6,000 passengers, the Staten Island (N.Y.) ferry functions as the world’s largest floating HOV. It has a fuel consumption rate of 214 gallons per hour, which amounts to only a few tablespoons of fuel per person per trip at capacity. Fast ferries, however, approach a per person fuel consumption rate equivalent to that of airplanes. Nonetheless, ferries hold a promise as clean air vehicles.

Agency Initiatives

A partner in both the MTS and the National Ferry Study, MARAD is scheduling a conference to brief local councils of governments about the desirability of ferries as an alternative mode of transportation; it is preparing a “soup to nuts” presentation about the role federal agencies can play in ferry initiatives. Another partner, USCG, is organizing a

The public’s view of marine transportation is beginning to shift—waterways are more frequently being seen as connectors instead of obstacles and ferries are being seen as movable bridges. *Right*, bus information is posted along the ferry terminals in Seattle; *far right*, passengers disembark at Rowes Wharf Ferry Terminal in Boston after ferrying across the river with their bicycles.





series of meetings focusing on harbor safety committees as responsible players in managing the nation's 25,000 miles of navigable waterways.

Sea Changes

But what is the optimum capacity of the MTS waterways for moving people? A 1971 federal study suggested that potential daily ridership would total 1 million, based on the location of urban centers and journey-to-work patterns along the U.S. waterways. Today, there are approximately 250,000 daily ferry riders nationwide, fewer than the daily totals for ferry ridership in the city of Istanbul, Turkey.

Ferry systems can be valuable partners in providing mobility and accessibility, particularly in congested urban centers. Seattle, San Francisco, New York, and Boston have launched several new ferry initiatives in recent years. Other cities—such as Jacksonville, Florida; Portland, Oregon; Corpus Christi, Texas; Long Beach, California; and Providence, Rhode Island; as well as states such as Massachusetts, Rhode Island, Maine, and New Jersey—have been exploring the potential of ferries in intermodal transportation (see sidebar, page 8).

Ferries can play a role in achieving the environmental, safety, and national security goals expressed in Slater's ONE DOT strategic vision. Ferries serving a waterway corridor can provide a floating HOV lane and help to achieve congestion mitigation objectives.

Safety is a preeminent concern in ferry transportation. Fortunately, with USCG's strict and effective requirements for licensing vessels and crews, there have been no fatalities in ferry transportation in the United States since World War II—an enviable record among transportation providers.

When crises or disasters have occurred along waterways, ferries have served effectively for both transportation and evacuation. For example, the emergency use of available ferry vessels eased the effects of collapsed bridges in Washington State and in San Francisco Bay, and when a strike, tunnel flooding, and the World Trade Center bombing interrupted transit in New York City.

Shaking the Status Quo

During the last 15 years, fast ferries have created new transit markets throughout the United States. As the new vessels in the channel, fast ferries have raised concerns from other channel and waterfront users; for example, the size and force of the wakes and the vessel's speed. The advent of fast ferry technology has shaken up the status quo on the waterways. Waterways that have become havens for fishing, recreational boating, and the movement of cargo and containers now can be used instead of bridges to link sides of rivers, to avoid highway congestion by connecting points along a corridor, to cross a harbor, and to provide an alternative mode of urban transit.

Golden Gate Ferries' Larkspur Terminal in Marin County, California, offers ample accommodations for vessel berths, car parking, and bus stops.

Ferrying the Gulf from Studies to Initiatives

Recent significant developments in ferry transit in the United States have included such initiatives as the Savannah River Ferry system, the San Francisco Giants Pac Bell stadium ferries, and the Rhode Island ferries and terminals. These and other initiatives, however, have started with studies—the Corpus Christi Water Transportation Study, the Bay Area Water Transit System analysis, and the Cape Cod–Provincetown Ferry Study provide good current examples.

Answering the Call to Action

In 1998, U.S. Secretary of Transportation Rodney Slater called for increased use of the nation's waterways, ports, and intermodal connections as an "accessible . . . dynamic, and environmentally responsible system for moving goods and people." In December 1998, Savannah, Georgia, voted to start the first new ferry program after the secretary's call to action. Savannah's International Trade and Convention Center and Chatham Area Transit Authority have selected the River Street Riverboat Co. to operate the center's new cross-river 49-passenger-ferry service. The fleet, which soon will enter construction, is being underwritten in part with federal and state funds.

Called the "Savannah Belles" and named for prominent women in Savannah's history, the vessels will link the new convention center and its adjacent Westin Savannah Harbor Resort to downtown transportation, hotels, and historic waterfront areas. In a preliminary trial, water taxis started service in December 1999, carrying 12,000 passengers in one month. By February 2000, this had doubled to 24,000 passengers per month. In March, the Convention Center provided remote parking and water taxi connections to relieve traffic congestion during the St. Patrick's Day celebrations attended by 400,000 people. The system is designed to provide transportation for Savannah employees, visitors, and residents.

Savannah cross-river ferries will link passengers to a trolley line running the length of historic River Street "to an \$11 million transit transfer facility." Eventually, the Convention Center Authority and Chatham Area Transit plan to promote these modes, encouraging visitors to use transit while in Savannah.

On the West Coast, the April 11 opening of the San Francisco Giants Pac Bell stadium, a new "old style" waterfront ballpark, also introduced new ferry connections. Seating up to 41,000 fans, the stadium is served by trains, Bay Area Rapid Transit, trolleys, buses,

and ferries. More than 50 percent of the ballgame attendees are using transit, exceeding the city's goal. Public and private ferry operators carry approximately 1,400 people to the stadium pier for each game.

The Blue and Gold Fleet provides ferry connections to Tiburon, Sausalito, Oakland, and Alameda; the Red and White Fleet links the stadium to Richmond; and Golden Gate Ferries, with free parking at its 1,200-car park-and-ride lot in Larkspur, carries 700 riders, near capacity for a single vessel. Ferry passengers from Vallejo and other cross-bay destinations make transit connections from the Ferry Building or can walk to other transit about 20 minutes away.

Rhode Island recently launched a ferry link between Pawtucket and Providence, connecting Providence's Water Place and Providence River to the National Park Service's Blackstone River corridor. Rhode Island also is anticipating a demonstration ferry connection between Providence and the East Bay. Managed by the Rhode Island Public Transit Authority, the new ferry receives support through TEA-21 Congestion Mitigation and Air Quality demonstration funds.

Meanwhile, a new Newport ferry terminal facility is under construction. It will support ferries, water taxis, and cruise ship tenders, as well as provide harbormaster facilities.

New Directions from Studies

In Corpus Christi, the Regional Transit Authority (RTA), the city, and the port are assessing conditions, investigating alternatives, and developing an implementation plan to operate the successful seasonal ferry service year-round. The agencies seek to support the city's "bustling tourist and convention business season" by expanding excursion opportunities. RTA currently supports a harbor ferry from Memorial Day to Labor Day, linking recreational destinations. A downtown trolley and a beach shuttle support the ferry.

The Cape Cod Commission recently completed a Cape Cod–Provincetown ferry study, conducting an extended survey of ferry passengers and potential customers. Preliminary findings indicated a lack of awareness about the three current ferry services (from Gloucester, Boston, and Plymouth), the need for better advertising and signage for the terminals, and a desire for alternative Cape Cod destinations, as well as for increased frequency and faster service. Responding to the survey results, ferry operators have expanded

their website information and have integrated the packaging of transportation, connections, and destinations.

In the meanwhile, a new fast ferry service has started from Boston, lowering fares on the Boston ferry services. Fast-ferry times from Boston to Provincetown are 1.5 to 2 hours, half the travel time via conventional ferry. Automobile travelers to and from Cape Cod during this past Memorial Day weekend met delays of up to 3.5 hours, making the case for expanded use of the uncongested Massachusetts Bay waterways.

Also in the Boston area, the Boston Redevelopment Authority and City of Boston issued a comprehensive "Boston Inner Harbor Passenger Water Transportation Plan" in January, inventorying ferry facilities, services, and water transportation; as well as terminal facility conditions, needs, and design guidelines. It also included a passenger water transportation plan, a strategy for implementing it, and options for its funding.

Studies in Progress

Public authorities in other areas also are studying new ferry routes or upgraded services:

- ◆ Rochester, New York, and Toronto, Ontario, have envisioned a fast ferry across Lake Ontario for passengers, automobiles, commercial vehicles, and tour buses. The fast ferry would provide an alternative to the congested international highway routes and border crossings, cutting travel time by 2 hours. The cities will select a route operator later this year.

- ◆ Maryland and Virginia state transportation agencies are exploring Chesapeake Bay ferry crossings. A recent Baltimore newspaper editorial endorsed the Maryland Department of Transportation's investigation of the "feasibility of ... ferry service between Point Lookout, Maryland's southernmost point, and Crisfield, 30 miles across the Kedge's Strait."

- ◆ Some miles south, Virginia's Northern Neck Planning District Commission is initiating a "Mid-Chesapeake Bay Ferry Feasibility Study" to examine the technology required, the operating costs, and the market demand.

- ◆ The states of Maine and New Jersey, the Long Island Sound region, and Pensacola, Florida, also have ferry studies under way.

But what is the role of waterways within the framework of the MTS? If waterways are transportation corridors for the movement of goods and people—and therefore critical elements of the national transportation system—should transportation movements be protected, advocated, and enhanced? Or should transportation movements be restricted? What are the priorities for waterways that also serve millions of unlicensed pleasure boat users and that provide valuable habitats? These complex issues are under consideration today.

The regulatory history of the National Highway System demonstrates the need for licensing all users of the highway corridors; it is clear that similar conflicts of use must raise the same issues for the marine corridors.

Flexibility and Capacity

The waterways are "self-healing roadways," readily adaptable to required changes. An excellent example of the flexibility and capacity of a ferry fleet occurred several years ago during an international computer conference that was expected to draw 10,000 visitors each day to Boston's World Trade Center. Using its ferry fleet, Bay State Cruises provided frequent links among the conference site, Logan Airport, and two downtown piers adjacent to conference hotels. For the seven days of the conference, Bay State Cruises carried 9,000 people daily on its ferries, providing easy cross-harbor links and enhancing the conference's accessibility.

The ease with which ferries were introduced to San Francisco Bay after the 1989 Loma Prieta earthquake prompted a series of ferry studies and investments in new ferry routes. At one time, San Francisco's Ferry Building was the world's second most heavily used transportation terminal, with 250,000 ferry riders passing through daily. The Bay Area now has rediscovered its waterway corridor capacity. Legislation has established a new Ferry Authority for San Francisco Bay (see sidebar, page 10). A comprehensive Bay Area Water Transportation Initiative is under way, calling for the establishment of new ferry routes to many of the old destinations and to new ones as well.

International and Association Perspectives

The MTS vision projects the development of the "world's most technologically advanced"

system; however, ferry planners in the United States have much to learn from their counterparts in other countries. U.S. planners must do more in designing and integrating intermodal connections, managing navigational corridors, establishing systemwide information and fare policies, and incorporating technological advances. Hong Kong, China; Vancouver and Halifax, Canada; Dublin, Ireland; Helsingborg and Stockholm, Sweden; and Dover, United Kingdom, offer successful models.

Yet the U.S. ferry industry has much to contribute as well. The United States is building more fast ferries today than any other country. London-based and Australia-based international fast-ferry conferences have convened in the United States for the first time during the past two years. Ferry system planners from around the world often visit new U.S. ferry-and-bus systems, such as New York

Waterway in New York City, and integrated and accessible ferry-and-dock facilities, such as Harbor Express in Boston.

The Boston-based International Marine Transit Association, holding its 25th annual conference in Venice, Italy, this October, provides ferry owners and operators worldwide an opportunity to exchange information. Sixteen maritime magazines published around the world offer regular articles about new ferry technologies. Associations such as the Passenger Vessel Association of the United States and the International Navigation Association provide unique and technical industry perspectives. The Brussels-based International Union of Public Transport has initiated a new waterborne committee, which meets regularly.

The Society for Naval Architects and Marine Engineers recently published a white paper on fer-

Ferrying Back to the Future

MICHAEL CUNNINGHAM

The Bay Area Water Transit Authority debuted in January 2000, as the San Francisco area's first regionwide public transit operating agency. It was the result of an effort to address the region's chronic transportation and mobility challenges. Although the bay is one of the finest natural harbors in the world, it is underutilized for transportation. But this has not always been the case—before the widespread use of private vehicles, water transportation was the mainstay of the region's transit network.

As congestion increasingly has crippled the region's highways, the Bay Area is rediscovering water transit. A comprehensive water transit network has proved to be the missing piece in the Bay Area's transportation puzzle—a mode that can link all of the disparate transportation systems of the nine Bay Area counties, providing ready connectivity and mobility.

Established under the leadership of California State Senator Don Perata and Governor Gray Davis, the Water Transit Authority is developing a regional water transit implementation and operation plan. The Authority will build on the findings of the Bay Area Water Transit Task Force, a multistakeholder initiative led by the Bay Area Council and charged by the California Legislature to investigate the feasibility of expanding water transit on San Francisco Bay. The Water Transit Authority will submit its completed plan to the California Legislature for rat-

ification; after approval, it will implement and operate a world-class water transit system on San Francisco Bay.

The findings and recommendations of the Water Transit Task Force have provided the starting point for the Authority's plan. After concluding that water transit offers many benefits to the Bay Area, the task force developed a conceptual design for a new system, addressing the need for a comprehensive network of terminals and routes to connect the north, south, east, and west subregions of the Bay Area. Fully built, the envisioned system would accommodate an annual ridership of 25 to 30 million passengers, using as many as 35 to 40 terminals. A fleet of approximately 120 high-speed vessels, primarily state-of-the-art catamarans, would be deployed on 30 or more routes.

However, the expansion of water transit into a world-class system will not solve all of the region's mobility challenges—it also must invest in an array of infrastructure improvements. But with the establishment of the Water Transit Authority, the Bay Area is boldly moving back to the future, reviving an idea whose time has come again.

(The action plan developed by the Bay Area Water Transit Task Force is available on the Internet at www.bayareacouncil.org/watertransit/.)

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ries and clean air issues, and the American Association of State Highway and Transportation Officials has expanded the focus of its water transportation committee within the past three years to include the nation's ferries.

The tides of change for the ferry mode are affecting not only the United States, but also systems worldwide. As planners from traditional highway and transit agencies reach across the modal divide to welcome participation by representatives of ferries, and as waterways gain recognition as an integral part of the national transportation system, the rising tide for ferries will increase transit opportunities for all.

New York Studies Its Ferries

I. BERNARD JACOBSON

Ferry operations on New York's Long Island have become critical to planning for land use and sustainable development in five towns—including the Hamptons resorts—located at the island's east end.

A series of studies has identified ferry services as potential relief for road congestion, mitigating forces in pollution abatement, improvements for accessibility, and essential transportation links:

- ◆ The New York State Department of Transportation's (NYSDOT's) *Long Island Transportation Plan to Manage Congestion*,
- ◆ Long Island Railroad's *East End Transportation Study*,
- ◆ NYSDOT's *North Fork Recreation Travel Needs Assessment*,
- ◆ The East End Transportation Council's *Sustainable Development Strategy Study*, and
- ◆ The Long Island Sound Ferry Coalition's *Ferry Service Clearinghouse Data Base*.

These studies are educating state, regional, and local planners about the capabilities and usefulness of passenger and vehicle ferries as full partners in the transit system.

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Fast ferries are in service worldwide, including this SEABUS vessel operating between Dar es Salaam on the mainland of Tanzania and the islands of Zanzibar and Pemba.