DRAFT MEMORANDUM

May 2007

TO: Beth Alden, Team Leader, Hillsborough MPO

FROM: Scott Schneider, Intern

RE: Water Transit Services

This memorandum summarizes the research conducted to evaluate how waterborne transit services in metropolitan areas are successful. Both commuter and recreational/tourist vessels were analyzed. Comparisons were drawn to determine how waterborne services compare to other modes of transportation with respect to ridership and efficiency of services. I interviewed the following operators:

New Smyrna Beach Water Taxi 162 N. Causeway New Smyrna Beach, FL. 32169 Phone:386-428-4828 Website: www.guym.com/taxi	**Vancouver SeaBus** 1600 - 4720 Kingsway Burnaby, BC V5H4N2 Phone: 604-990-2402 http://www.translink.bc.ca/transportation_services/ Email: golierp@dnv.org
Baltimore Water Taxi 1735 Lancaster Street Baltimore, MD. 21231 Phone: 410-563-3901 Website: www.thewatertaxi.com Email: edkaneswatertaxi@comcast.net	**Washington State Ferry** 2901 Third Avenue Suite 500 Seattle WA 98121-3014 Website: http://www.wsdot.wa.gov/ferries/ Email: CourseM@WDOT.WA.GOV
Seattle Water Taxi (Elliott Bay Water Taxi) Department of Transportation 201 S. Jackson St., KSC-TR-0426 Seattle, WA 98104-3856 Phone: 206-684-1753 http://transit.metrokc.gov/tops/oto/water_taxi.html Email: Mike.Beck@metrokc.gov	**Golden Gate Ferry System** San Francisco Bay Area Water Transit Authority Pier 9, Suite 111, The Embarcadero San Francisco, CA 94111 Phone: (415) 291-3377 Website: www.watertransit.org Email: castleberry@watertransit.org
Chicago Water Taxi Wendella Boats 405 North Wabash - 1513 Chicago, IL 60611 Phone: 312-205-4051 Website: www.wendellaboats.com Email: wendellag@sbcglobal.net	**Bay Link Ferry System** Vallejo Baylink P.O. Box 2287 Vallejo, CA. 94592 Phone: (415) 291-3377 Website: www.baylinkferry.com Email: castleberry@watertransit.org

Miami MPO Stephen P. Clark Center 111 NW 1 Street, Suite 910 Miami, FL. 33218 Phone: 305-375-2069 Website: www.miamidade.gov/mpo Email: guerraj@miamidade.gov	

Additional information was gathered from a feasibility study of waterborne transportation conducted for the Pinellas County MPO in 2003. While conducting these telephone/email interviews, the following areas were discussed.

- Routes
- Travel Time
- Access to public transportation
- Headways
- Hours of Service
- Fares
- Funding
- Positive Impacts

Routes

The majority of the operators I interviewed provide a simple connection from point A to point B. For example, the SeaBus connects downtown Vancouver with the North Shore suburbs, and the Seattle Water Taxi connects Seacrest with Pier 55. The SeaBus is a popular alternative to bus and automobile because the neighborhood around the SeaBus terminal is tremendously dense. The exceptions are three services which make multiple stops: New Smyrna Beach Water Taxi, Baltimore Water Taxi, and the Washington State Ferry. New Smyrna Beach serves a total of 3 stops, while Baltimore serves 17.

The New Smyrna Beach Water Taxi is recreation-oriented, geared towards residents and tourists. According to the operator, many riders will ride the taxi both ways and make it a day outing. There are two vessels and each one can accommodate up to 40 riders and up to three bicycles. The route serves the North Causeway, Ponce Lighthouse Park, Inlet Harbor Restaurant and Marina, and Riverside Park.

The Baltimore Water Taxi serves both commuters and tourists, approximately a 40/60 split respectively. Depending on the season, the service operates three to fourteen boats a day, ranging in size from 26 passengers to 84 passengers. For locals, it provides the most direct route to development on the

waterfront, condominiums, and townhouses. Tourists ride the taxi to the Aquarium, Little Italy, Fort McHenry, and Maritime Park.

The feasibility study conducted for Pinellas County concluded that its focus ought to be placed on social/recreational trips, because of the travel distances between these destinations around the peninsula. The recommendation was for Pinellas County to provide point-to-point destination-oriented services utilizing a fleet of eight vessels, capable of carrying up to 70 passengers each. Six destinations were recommended, based on factors such as redevelopment underway, proximity to employment and shopping, and intermodal connectivity. The six sites were John's Pass, Downtown St. Petersburg, Clearwater, St. Petersburg/Clearwater Airport, Dunedin, and Downtown Gulfport.

The Washington State Ferry is the largest ferry system in the United States. It serves eight counties within Washington and the Province of British Columbia. The ferry's existing system has 10 routes and 20 terminals and is served by 28 vessels. Each weekday morning, more than 75,000 Puget Sound residents commute to work or school on board a Washington State Ferry. Most of the routes have two vessels assigned to them for the bulk of the day, then drop down to one boat for the later evening time periods. For example, the Fauntleroy/Vashon/Southworth route provides 3 vessels during commuting hours and drops down to 2 during the early morning and evening hours.

Travel Time

Many of the systems I interviewed maintained travel time intervals of 12-15 minutes regardless of whether the vessel is traveling from point to point or landing to landing. For example, the Seattle Water Taxi seats 149 passengers and takes approximately 12 minutes to make the crossing. This has become a viable alternative for accessing recreational activities (attending sports events, biking, and beach access). On the other hand, New Smyrna Water Taxi, Golden Gate Ferry System, and the Bay Link Ferry System had greater travel times.

The New Smyrna Water Taxi's round-trip voyage takes approximately two hours, but many riders get off at one of the three landings to visit the tourist destinations. The travel time is similar to traveling by automobile. There is no bridge directly into Ponce Inlet, so automobile users must travel an extra exit if they choose to visit the landings by car.

The Golden Gate Ferry System departs San Francisco and offers services to both Sausalito and Larkspur in Marin County, using five vessels plus spares. Trips range from 30-50 minutes and can accommodate 725 passengers and up to 25 bicycles. Bicycle racks are available at the Larkspur and San Francisco Ferry terminals. Compared to other methods of transportation, ferry travel time is about the same during peak hours, and during off peak hours it is faster to drive. Seventy percent of the ridership is based on commuters during peak hours.

The Bay Link Ferry System which operates out of the City of Vallejo offers services to San Francisco as well. This ferry system has four vessels available and can provide room for up to 300 passengers per trip. Over eighty percent of the ridership of Bay Link is commuter based. This is a 55 minute trip and covers the northeast corner of the Bay to the Ferry Building in San Francisco. These services to Downtown San Francisco are also attractive because parking downtown can cost $15-$50 per day.

The Miami Waterborne Transportation Service, which has not yet been approved for implementation, has estimated its travel time to be 59 minutes from Haulover Park to Downtown Miami on the north side, and 28 minutes from Matheson Hammock Park to Downtown Miami on the south side. To minimize travel time, the use of catamaran-style ferries or a hovercraft is being considered. These vessels could include sonar-based manatee protection systems, a consideration in zones where vessel speeds are typically limited in order to preserve the manatee population.

The feasibility study for Pinellas anticipated that travel times would to be long. The report indicates that if hovercraft vessels were used, their benefits in terms of speed would be minimal and the impact of noise on waterfront communities would be substantial.

Access to Public Transportation

To my surprise, only a few of the systems I interviewed discussed intentional connections to bus and rail. The SeaBus, Seattle Water Taxi, Washington State Ferry, and Chicago Water Taxi were the only ones to plan for connections. At the Waterfront Station in Vancouver, there are connections to the SkyTrain and West Coast Express. In North Vancouver, the SeaBus stops at Lonsdale Quay, in addition

to being an important tourist destination, with a hotel, public market, and bus loop. The North Shore buses connecting to the SeaBus are all timed to the SeaBus schedule.

The Seattle Water Taxi provides service between downtown Seattle waterfront and the West Seattle Junction which acts as a transit center. Traffic congestion is a huge issue between the main arterial of West Seattle and Downtown Seattle including the West Seattle Bridge and the Alaskan Way Viaduct. The cost of parking downtown and the traffic congestion make this a competitive transportation alternative for residents of West Seattle. There is also a free West Seattle shuttle that connects the dock at Seacrest Marina Park to West Seattle Junction from May through September. The uniqueness of the service makes it an attractive alternative to the bus.

The Chicago Water Taxi operates on a closed loop route on the Chicago River, shuttling passengers between Madison Street on the south branch; LaSalle Street and Michigan Avenue on the main branch; and River East on the main branch in Ogden Slip. It provides a connection to Metra (the commuter rail service) at Union Station and Olgilvie Transportation Center, which are served by a combined 9 Metra lines. Since its launch in 1962, the water taxi has served over four million rail commuters. The water taxi is an economical and quick alternative to congested road traffic, currently operating two vessels.

The Washington State Ferry System coordinates with bus and rail and is monitored to ensure its routes are not duplicative. Schedules are coordinated to facilitate transfers. When the vessel is delayed, transit operators are notified so that passengers will still be able to make their connections. Fare collection technologies are coordinated regionally. WSF also participates in regional forums for boards and staff to develop transit policy. WSF provides significant time savings to driving around in an automobile.

Baltimore Water Taxi, which has been in operation for over 26 years, is actively researching cost effective solutions to provide transfers to services on land. The owner identifies this as a high priority due to the increased demand for commuter services to residents during the months of April to October.

The study conducted for Pinellas County also identified the importance of providing intermodal transportation connections. By integrating the vessels into the existing infrastructure and providing a connection to local buses and commercial destination, the probability for a positive community impact

would be greatly enhanced. Additionally, it would present an atmosphere where it would not appear the county was endorsing one private provider over another.

Regarding the other operators interviewed, no direct connections to public transit routes were identified in part because they serve downtown districts with many walking destinations. For example, the Golden Gate Ferries and Bay Link Ferries drop you directly into Downtown San Francisco, with dense employment within four blocks of the ferry terminals. Miami plans on following a similar approach.

Headways

The majority of the taxis and ferries examined operate on headway intervals of 15-20 minutes during the day to accommodate commuter and tourist demand. For example, the Seattle Water Taxi operates on 20 minute intervals during commute hours, and hourly throughout the rest of the day, during its season. Focusing strictly on commuting, the Washington State Ferry has a frequency of 30-50 minutes. The Baltimore Water Taxi offers continual service from all 17 landings at headways of 15-20 minutes.

The SeaBus in Vancouver runs every 15 minutes in each direction, until 6 p.m. on the weekdays and 6:30 p.m. on the weekends. It guarantees 12-minute travel time at 15 minute headways most of the day, and reports it has over a 99% on-time performance. Over 50 crossings are made each day. On Monday through Saturday during the daytime, both ferries operate, with two ferries departing simultaneously from opposite termini and passing each other halfway. During the evening hours and on Sundays, service is reduced to 30 minute headways with only one ferry operating.

Systems with longer headways include the Golden Gate Ferry System, which operates on 45 minute headways. This could be attributed to travel times of 50 minutes with only 5 vessels available. The Miami Waterborne Transportation anticipates 60-minute headways, facing travel time challenges as mentioned above due to manatee protection zones.

Hours of Service

One factor that all of the services share in common is operating seven days per week, though the hours may be different on weekends vs. weekdays. The only exception is Miami, which does not plan to operate on weekends at all because of parking availability and parking requirements.

Those that serve a heavily populated area operate earlier in the morning and later at night. For example, the Golden Gate Ferry Larkspur to San Francisco route departs Larkspur as early as 5:30 a.m. and runs until 10:05 p.m. during the week. The SeaBus departs the Waterfront/Lonsdale Quay around 6 a.m. and runs until 1:00 a.m. The Seattle Water Taxi operates from 6:50 a.m. until 7:10 p.m., and it operates as late as 11 p.m. on Friday and Saturday. The Baltimore Water Taxi provides early service to commuters at some landings, and otherwise operates 10 a.m. until 8 p.m., with later hours on Saturday.

Since most of these water transit services are located in states that experience changing of the seasons, schedules vary depending on the time of year.

Fares

Fares also vary from vessel to vessel, as shown below.

Name of Waterborne Vessel	Fees Assessed
New Smyrna Beach Water Taxi	One way fare ($5.00). All day fare ($10.00)
Baltimore Water Taxi	All day Adult ($8). All day kids ($5). Annual Pass ($80). Commuter Fee (Annual Pass+ $3 per day).
Seattle Water Taxi (Elliott Bay)	One way fare ($3) or riders can show their bus pass and ride for no additional charge.
Chicago Water Taxi	One way fare ($2). 10 Pack Pass ($15). Monthly Pass ($45)
SeaBus Vancouver	One way fare ($3). 10 pack ($23). Monthly Pass ($82) *All fares converted into USD. *These fees represent 2 zone fares for those traveling from Vancouver (yellow zone) to North Vancouver (red zone).
Washington State Ferry	Commuter Route (Central Sound District): Round Trip Adult ($6.70). Round Trip Car and Driver ($14.45). 10X frequent user pass ($53.60). Monthly Pass ($86.80).
Golden Gate Ferries	One Way fare ($7). 20 ticket pass ($72-85).
Bay Link Ferry System	One way fare ($11.50). 10 ride punch card ($89.75). Monthly Pass ($247.25) includes all ferries and buses.

Fares were also examined in the Pinellas County feasibility study. To serve a variety of users, the recommendation was to provide single-trip passes as well as day, week, month, and year passes. Fare structures were based on the Seattle Ferry and were to be based on vessel size.

Funding

Boat equipment is expensive to buy and to operate, but may be less costly than a bridge. Following is a brief description of some of the capital and operational costs associated with running each of these successful water-borne transit systems.

New Smyrna Beach Water Taxi – The taxi is owned by the City and operated by the Marine Discovery Center. The City was granted funding from the Florida Department of Transportation (FDOT) to cover the purchase of the equipment, and to pay for initial operations not to exceed a period of two years. There are also incentives in place if the taxi begins to show profit. The taxi has been in operation for less than 200 days, and at this time operating costs are reported to be approximately $140,000, including insurance and liability. Each water taxi costs approximately $150,000.

Baltimore Water Taxi –This service is significantly funded through fares. Last year, approximately, $2.6 million in revenue came from fares. Each vessel costs approximately $350,000, and the operator anticipates the need to purchase 9 new catamarans in the next three years. There is also an identified need for an additional $600,000 per year in order to get and keep qualified captains and mates.

Seattle Water Taxi – Funds for operation come from fares and from King County's transit operating budget. During the service period of May-September, the cash fares cover about 40% of the service costs. Currently, the county contracts with a local charter company, Argosy Cruises, at a cost of $3,033-$1,900 per day for the service of one 149-passenger vessel with a top speed of 10 knots. This price covers the cost of labor (crew, captain, administrative support) as well as providing the boat and dock access on the Downtown Seattle Waterfront. It does not include general upkeep at the site and any repairs due to damage caused by the Water Taxi, which are covered by the county. If the county decides to purchase its own vessel for this service, the cost is estimated at $3.5 million. Additionally, that would require construction of a permanent dock facility, which has been estimated to cost $2 million, not including land.

Washington State Ferry –The Washington State Ferry is operated through fares and state funding. Approximately 73% of WSF's operating and maintenance budget comes from fares. The balance of the operating subsidy is generated from state gasoline taxes. Approximately 80% of WSF's capital budget comes from state gas tax sources, and the remainder is funded through federal grants. Three replacement vessels were recently purchased, at a cost of approximately $110 million.

Vancouver SeaBus – Funding for the SeaBus comes from the farebox, property taxes, gas taxes, and advertising. Operating costs are approximately $7 million CDN annually for two ferries. TransLink is in the process of purchasing a third vessel with a 400-passenger capacity for approximately $37 million CDN. Additional costs are the capital costs for the docks and the maintenance facilities.

Bay Link Ferry –The fares collected for 2003/2004 covered 59.3% of the $7,347,582 actual cost to run this service. The remaining 40.7% of costs were covered by transit subsidies generated from tolls on the northern bridges of the San Francisco Bay Area. Operational costs included wages, fuel, and other supplies. Bay Link is dependent upon federal and state grants for capital investments and system improvements. The funding sources behind most of those grants are federal and state taxes levied on the sale of gasoline and diesel fuel.

Golden Gate Ferry – Like Bay Link, the Golden Gate Ferry system runs long distance, high speed routes, and for planning purposes, $1,000/hour operating cost is estimated for its shorter routes. Approximately 40-70% of its funding comes from the farebox. The service receives roughly $6 million dollars a year from bridge tolls. Golden Gate Ferry System recently received bids for two 149-passenger, low-emission vessels at $8 million a piece.

Miami Waterborne Transportation – Funding sources investigated for this project include Ferry Boat Discretionary Board Program funds, Transportation Regional Incentive Program funds, and local People's Transportation Plan funds. The capital cost is estimated at $13-$16 million, including the vessels, docking and terminal facilities. Operating costs are estimated by proposers at $2.5-$4.5 million per year, depending on the type of vessel. This cost includes all operating and maintenance expenses including insurance and fuel.

Pinellas County Water Taxi – This study recommended a public-private partnership, with a private operator owning and maintaining the vessels, and public subsidy to keep fares at a reasonable level that can attract riders. Public funding was also suggested to cover the costs for providing passenger amenities (shelters, benches, parking), creating appropriate signage, and marketing the service. In order to establish a reasonable fare structure, a public subsidy of $1,000,000 was suggested to contribute to start-up costs and an additional $400,000 would be needed to offset the operating costs. The initial private cost investment was estimated at $2 million. These figures would cover operation of these vessels for a period of 3 years.

Positive Impacts

Chicago Water Taxi –The water taxi has been in operation since 1962 and has carried an estimated 4 million rail commuters. The schedules are easy to read and service updates can be disseminated via email, SMS text messaging, and a website. In 2001, the city conducted a Chicago Area Transportation Study (CATS), which concluded the water taxi provides a measurable benefit in the reduction of auto emissions and auto congestion in the downtown district. As a result, federal funding was awarded for the construction of a new vessel to expand the frequency of services.

New Smyrna Beach Water Taxi – Has been in operation for less than 200 days. Over 9,000 residents and visitors have utilized the service.

Baltimore Water Taxi – Over 400,000 residents and visitors ride the Baltimore Water Taxi annually. Despite the fact it does not provide direct access to land borne transportation, it is unique because it covers 12 miles of land/undeveloped areas that would otherwise be an arduous process using an automobile because of congestion.

Washington State Ferry –In 1999, the Washington State Ferry carried over 11 million vehicles and over 26 million people. Additionally, for some routes, WSF is the only access to the mainland. For example, the San Juan Islands and Vashon Island have no alternative bridges.

Golden Gate Ferry System – Over 8,000 commuters and tourists ride a Golden Gate Ferry each day. Annual ridership is close to 2 million for the Larkspur route and close to half a million for Sausalito.

Bay Link Ferry System –Aside from the normal routes on a Bay Link Ferry, each day a few trips go directly to the Fisherman's Wharf/Pier 39 tourist area. When the San Francisco Giants play, special trips are coordinated using the ferry as well. Each day roughly 5,000 passengers commute to San Francisco downtown area using this vessel.

Thanks To:

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