

# **WATERBORNE TRANSIT CONCEPTS STUDY**

**April 21, 2010**

# Overview:

- Summary of previous 2004/2005 Ferry Service analysis
- Results of recent study focusing on ferry service from Newport News
- Conclusions

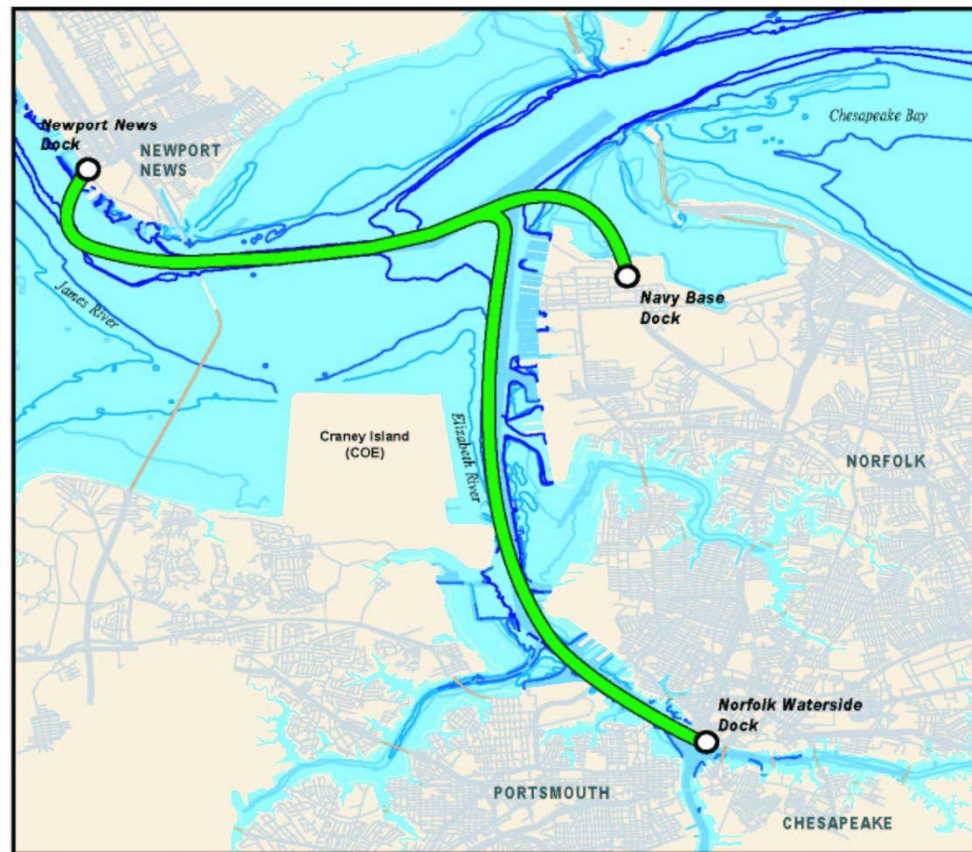
## 2004/2005 analysis:

- Ferry concepts analyzed service between:
  - Naval Station Norfolk and downtown Hampton/downtown Newport News
  - Downtown Norfolk and downtown Hampton/downtown Newport News
    - Included option for Fort Monroe
- Included coordination with the Navy regarding remote parking and transit circulator options

# Newport News Ferry Operations – Travel Time (2004/2005)

- Downtown Newport News to Naval Station Norfolk: 16 minutes
- Downtown Newport News to Downtown Norfolk: 44 minutes
- Downtown Newport News to Naval Station Norfolk and Downtown Norfolk: 60 minutes
- NOTE: Times do not include boarding and alighting.

**HRT** Potential Ferry Route - From Newport News



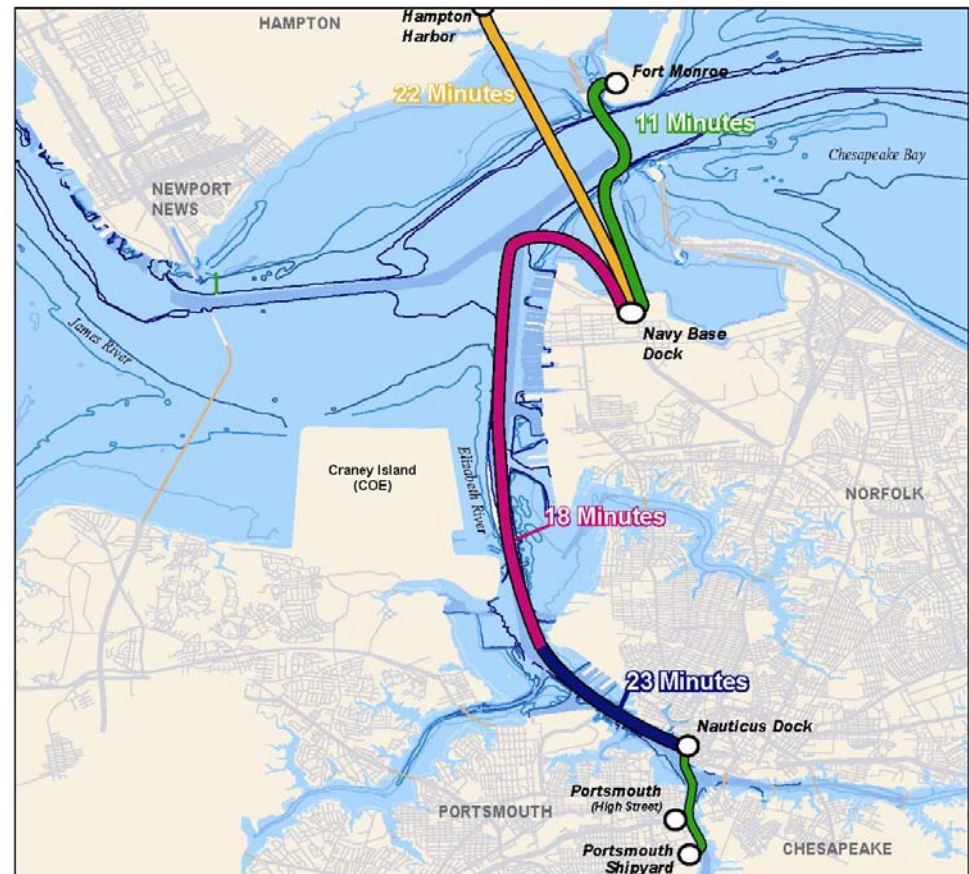
LEGEND

- Potential Ferry Route
- Potential Dock
- Shipping Channel



# Hampton Ferry Operations – Travel Time (2004/2005)

- Downtown Hampton to Naval Station Norfolk: 22 minutes (including no wake area in Hampton Harbor)
- Fort Monroe to Naval Station Norfolk: 11 minutes
- Downtown Hampton to Downtown Norfolk: 52 minutes
- Downtown Hampton to Naval Station Norfolk and Downtown Norfolk: Approximately 65 minutes
- NOTE: Times do not include boarding and alighting.



## 2004/2005 Conceptual Ridership Results from Hampton and Newport News

Link	Daily Ridership at 30 Minute Frequency	Daily Ridership at 60 Minute Frequency
Service from the Peninsula (Hampton/Newport News) to Naval Station Norfolk	2360	810
Service from the Peninsula (Hampton/Newport News) to Downtown Norfolk	1200	550
Service from the Peninsula (Hampton/Newport News) to Naval Station Norfolk and Downtown Norfolk*	2880	1055

\*Ferry vessel goes to each destination

- Capital costs and operating/maintenance costs for each option were more than \$20 million. Funding was unavailable to proceed with ferry service.

## 2009/2010 Conceptual Ferry Study for the City of Newport News

- Completed as a sub-task of a larger, on-going Planning effort for the City of Newport News
- Scope of Work: Feasibility of waterborne transit alternatives between Newport News and Norfolk
  - Assessment of existing conditions
    - Travel Demand
    - Existing transportation network
  - Review of previous work and ferry service
  - Develop Concepts options, including
    - Conceptual Capital Costs
    - Conceptual Operations and Maintenance Costs
    - Ridership (as estimated by the travel demand forecasts)
    - Connectivity to regional transit network
  - Used previous study as basis
- Provides conceptual options for ferry service, but not a detailed analysis



# Waterborne Transit Concepts (2009/2010)

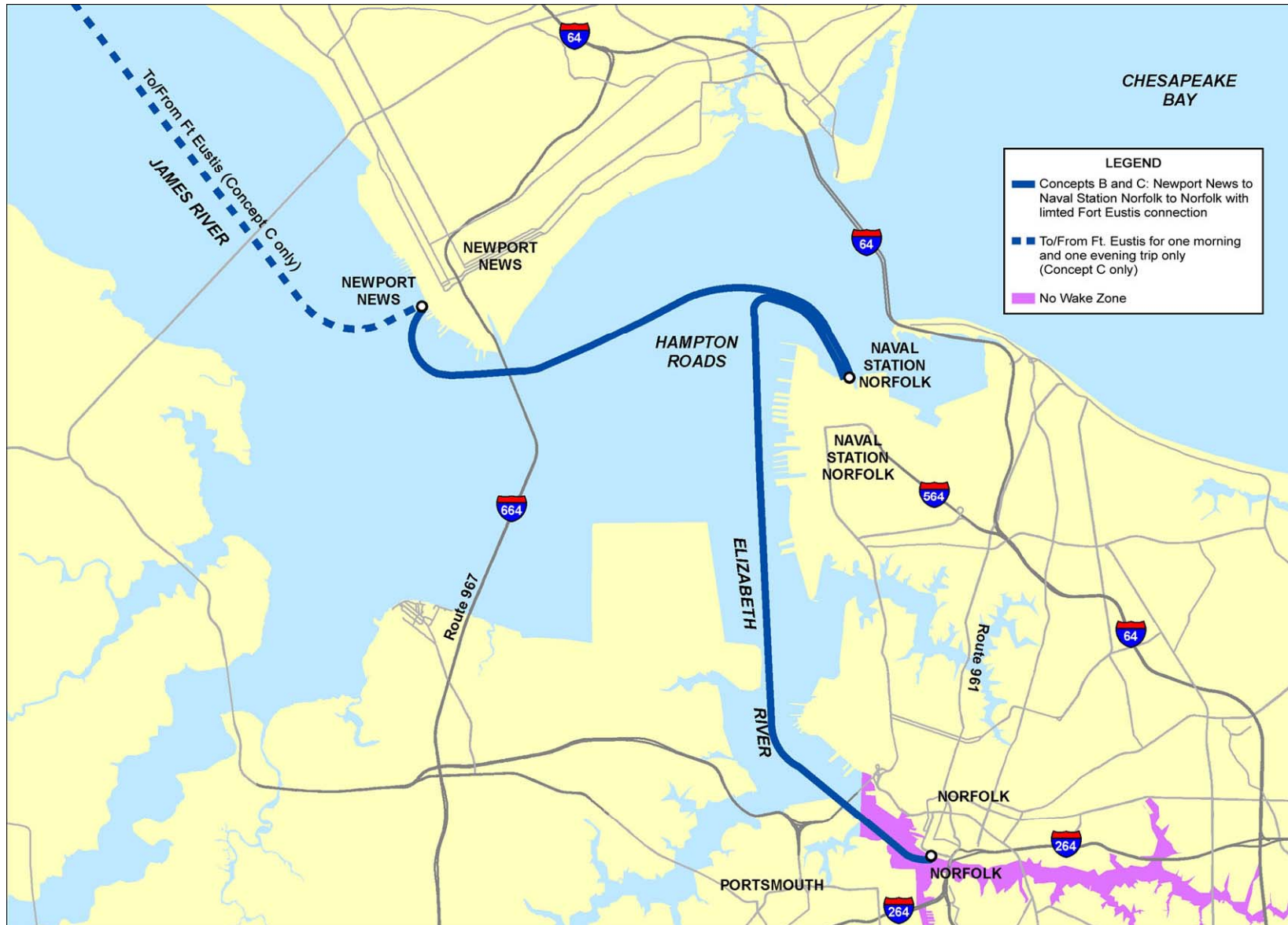
- Concept A would provide service on two routes from Newport News:
  - Route 1 between Newport News and Naval Station Norfolk
  - Route 2 between Newport News and Downtown Norfolk
  - Limited service between Newport News and Fort Eustis with one morning and one evening trip
- Concepts B and C would provide service on one route from Newport News to Naval Station Norfolk to downtown Norfolk
  - Concept C providing limited service between Newport News and Fort Eustis with one morning and one evening trip.



# Concept A



# Concepts B and C



# Ferry Service Assumptions

	Concept A	Concept B	Concept C
	<b>Route 1: Newport News to Naval Station Norfolk</b>  <b>Route 2: Newport News to downtown Norfolk</b>  <b>Includes limited service to Fort Eustis</b>	<b>Newport News to Naval Station Norfolk to downtown Norfolk returning to Naval Station Norfolk to Newport News</b>	<b>Newport News to Naval Station Norfolk to downtown Norfolk returning to Naval Station Norfolk to Newport News</b>  <b>Includes limited service to Fort Eustis</b>
<b>Peak Headways</b>	25-35 minutes	Hourly	Hourly
<b>Speed</b>	30 knots 15-25 knots (no-wake zone)	30 knots 15-25 knots (no-wake zone)	30 knots 15-25 knots (no-wake zone)
<b>Travel Time</b> <ul style="list-style-type: none"> <li>Fort Eustis to Newport News</li> <li>Newport News to Naval Station Norfolk</li> <li>Naval Station Norfolk to downtown Norfolk</li> <li>Newport News to downtown Norfolk</li> </ul>	39 minutes 17 minutes n/a 27-31 minutes	n/a 17 minutes 25-29 minutes 55-59 minutes	39 minutes 17 minutes 25-29 minutes 55-59 minutes
<b>Travel Distance</b> <ul style="list-style-type: none"> <li>Fort Eustis to Newport News</li> <li>Newport News to Naval Station Norfolk</li> <li>Naval Station Norfolk to downtown Norfolk</li> <li>Newport News to downtown Norfolk</li> </ul>	18 nautical miles 8.5 nautical miles n/a 12.5 nautical miles	n/a 8.5 nautical miles 11.5 nautical miles 19 nautical miles	18 nautical miles 8.5 nautical miles 11.5 nautical miles 19 nautical miles

# Fast Ferry Technology

- Fast ferry technology is rapidly advancing in the area of reduced wakes.
- Kitsap Transit in Washington State ordered an ultra-low wake fast ferry in 2009 for an area environmentally sensitive to wake impacts. The catamaran style vessel uses hydrofoil assisted technology to reduce wake heights and decrease wake energy.
- The Newport News conceptual ferry study assumed a range in speed of 15-25 knots in the no-wake zone. One specific vessel has not been selected. Capital costs increase with advanced technology. A balance will need to be found between speed, travel time and ridership.

# Ferry Concepts Summary

	Concept A	Concept B	Concept C
	<b>Route 1: Newport News to Naval Station Norfolk</b>  <b>Route 2: Newport News to downtown Norfolk</b>  <b>Includes limited service to Fort Eustis</b>	<b>Newport News to Naval Station Norfolk to downtown Norfolk returning to Naval Station Norfolk to Newport News</b>	<b>Newport News to Naval Station Norfolk to downtown Norfolk returning to Naval Station Norfolk to Newport News</b>  <b>Includes limited service to Fort Eustis</b>
<b>Capital Costs<sup>1</sup></b>	<b>\$14.9 M</b>	<b>\$14.0 M</b>	<b>\$14.9 M</b>
<b>O&amp;M Costs<sup>2</sup></b>	<b>\$6.2 M</b>	<b>\$5.6 M</b>	<b>\$5.6 M</b>
<b>Ridership 2034 (average week day)</b>	<b>1184-1644</b>	<b>572-810</b>	<b>659-957</b>

Source: Parsons, Connetics Transportation Group, and AECOM December, 2009

<sup>1</sup>Capital Costs assume:

- Adequate parking is available at Newport News and downtown Norfolk. Naval Station Norfolk would be served primarily by shuttle service. A 40 space park and ride lot is included for Fort Eustis.
- Construction of two docks with two berths each at Newport News. Existing dock facilities would be utilized at Naval Station Norfolk, downtown Norfolk, and Fort Eustis.
- Purchase of a total of four vessels, including one spare, for each concept.
- Two additional buses would be purchased to provide shuttle service in Newport News and at Naval Station Norfolk.

<sup>2</sup>Operating and Maintenance Costs assume:

- Concept A would operate from 5:25 AM through 11:02 PM with three vessels in operation an average of 16 hours per day. Concept B would operate from 5:45 AM to 9:56 PM and Concept C would operate from 5:45 AM to 9:19 PM. Concepts B and C have three vessels in operation an average of 14 hours per day.
- Fuel and some personnel costs are based on hours of operation with higher costs for Concept A due to longer hours of operation. Administrative personnel costs, insurance, marketing, and maintenance are based on number of vessels in operation and are the same for all three concepts.
- Shuttle buses would operate in conjunction with ferry at Newport News and Naval Station Norfolk.

# Conclusions

- Based on the key geographic features of the region, a waterborne ferry system is a feasible transit service concept in providing regional connectivity.
- The costs were developed at a conceptual level to facilitate comparison of costs and ridership potential. Based on the ridership results, Concept A provides the optimal passenger service concept for frequency and travel time.
  - The ridership estimates could vary based on the selected ferry vessel which may alter service travel times.
  - Further detailed cost and ridership analyses, including associated landside transit service connections would be needed prior to a specific service concept approval or implementation.
  - Connection to landside transit services and development of needed ferry terminal would require further definition and analysis.



# Conclusions (continued)

- Coordination with the Navy would be needed, including a reassessment of safety and security concerns.
- Ridership estimates are based on commuter travel patterns. Vessel technology must provide competitive travel times and address the restrictions created by no-wake zones approaching downtown Norfolk.
- Land use connections and planning would need further analysis.
- The Transit Vision Plan, Phase II, currently underway, includes ferry service from Newport News and Hampton to the Southside as a key element in regional transit system for Hampton Roads.



# Alameda Harbor Bay Ferry

