



M495 – Fast Ferry
Passenger Service
Business Plan

Final Presentation

Northern Virginia Regional
Commission

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NYGAARD

Project Overview

Project Purpose

- Continue to work with stakeholders interested in the project
- Build on previous work to create a business plan for implementing passenger ferry service on the Potomac
- Identify a business case for passenger ferry routes that adds diversity and resilience to the transportation system in the NCR while adding value to burgeoning waterfront development
- Build a financial model to test various aspects of service and capital investment and the influence on overall cost
- Identify a governance structure that could carry the business plan into implementation

M-495 Commuter Fast Ferry Stakeholder Group

Federal Government

U.S. Maritime Administration
U.S. Federal Transit Authority
U.S. Federal Highway Administration
U.S. Department of Homeland Security
Federal Emergency Management Administration
U.S. Coast Guard
National Park Service, U.S. Department of Interior
National Oceanic and Atmospheric Administration
U.S. Army Corps of Engineers
U.S. Fish & Wildlife Service

Military

Naval District Washington (NDW)
Fort Belvoir
Joint Base Anacostia-Bolling (JBAB)
Marine Corps Base Quantico
Naval Support for Indian Head & Dahlgren

State & Local Government

DC City Council
DC Department of Transportation
Virginia Department of Transportation
Virginia Dept. of Rail & Public Transportation
Virginia Rail Express
Virginia Marine Resources
Arlington County Department of Planning
Fairfax County Board of Supervisors and Planning Department
Prince William Department of Planning and Transportation
Maryland Department of Transportation
Prince George's County, Maryland
Town of Indian Head, Maryland
Charles County, Maryland Department of Economic Development

Private Industry

Business Improvement Districts (BIDS)
Hornblower
New York Cruise Lines
Penrose Group
IDI Rivergate
The Wharf
Occoquan Marina
Belmont Bay Marina
Peterson Company
MGM & National Harbor
Metal Shark Boats
Bush Construction Corp.
Washington Gas
DC Water
JBG Smith
Stantec Inc.
Phoenix Infrastructure Group

Associations (Local and National)

Transportation Research Board
Metropolitan Washington Airports Authority
National Capital Planning Commission
Passenger Vessel Association
Anacostia River Keepers
Anacostia Trust
DC Sail
Alexandria Citizen Association
Woodbridge Civic Association

Universities

George Mason University
Virginia Tech
University of Maryland

The Stakeholder Group provides the expertise and funding required to publish studies, advocate support, and engage citizens and the media in support of commuter fast ferry service in the National Capital Region



Previous Work Highlights



M-495 Infrastructure Gap Analysis (NVRC, 2019)

- 11 Terminals examined
- Extended market analysis of Woodbridge to JBAB and DC

Market Analysis Report (NVRC, 2015)

- Identified 6 corridors potentially commercially viable
- Utilized phone survey

Service Study and Route Proving Exercise (Prince William County, 2009)

- Examined 13 terminals and running times between terminals
- Recommended further study to assess market

Ferry Feasibility Study (VDOT, 2001)

- Recommended Woodbridge to Navy Yard route
- Service must operate at competitive speeds

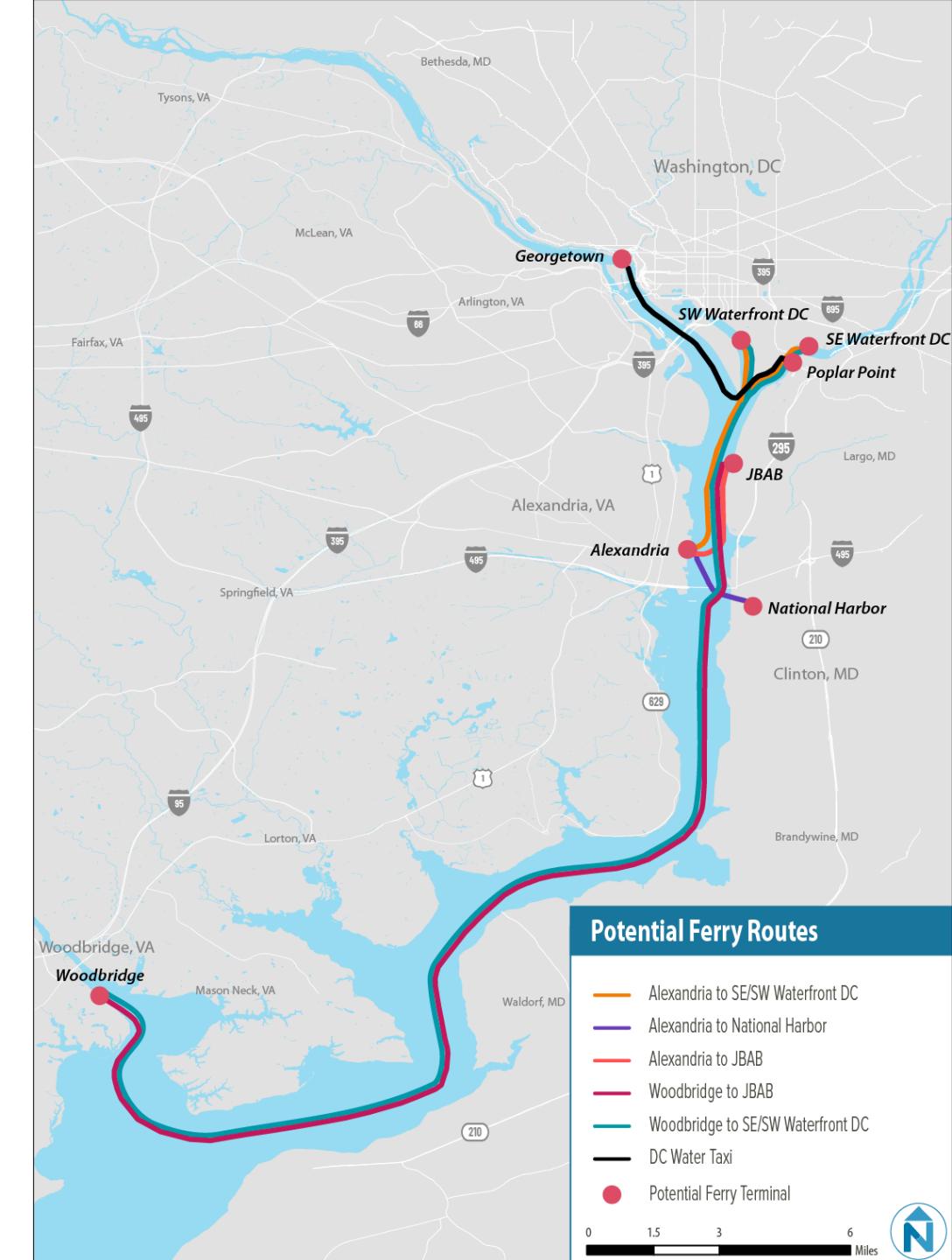
Project Results

Candidate Routes & Routes Selected for Study

TIER 1

TIER 2

ID	Origin	Destination
1	Alexandria	SE/SW Waterfront DC
2	Alexandria	National Harbor
3	Alexandria	JBAB
4	Georgetown	Poplar Point(DC River Circulator)
5	Woodbridge	SE/SW Waterfront DC
6	Woodbridge	JBAB
7	Charles County	Quantico
8	Charles County	SE/SW Waterfront DC
9	Charles County	Fort Belvoir
10	Charles County	JBAB
11	Crystal City	Poplar Point
12	SE/SW Waterfront DC	Crystal City
13	SE/SW Waterfront DC	Pentagon
14	SE/SW Waterfront DC	National Airport
15	Spotsylvania	Quantico
16	Stafford County	SE/SW Waterfront DC
17	Woodbridge	National Harbor
18	Woodbridge	Alexandria
19	Woodbridge	National Airport



Woodbridge / JBAB

ESTIMATED DEMAND

Varies based on fare, travel time, and service frequency:

85 to 839 daily riders

OPERATING COST

Varies based on vessel size, speed and number:

1 VESSEL
Time b/w Sailings
 2 HRS

\$10.7M Annual Ops Cost

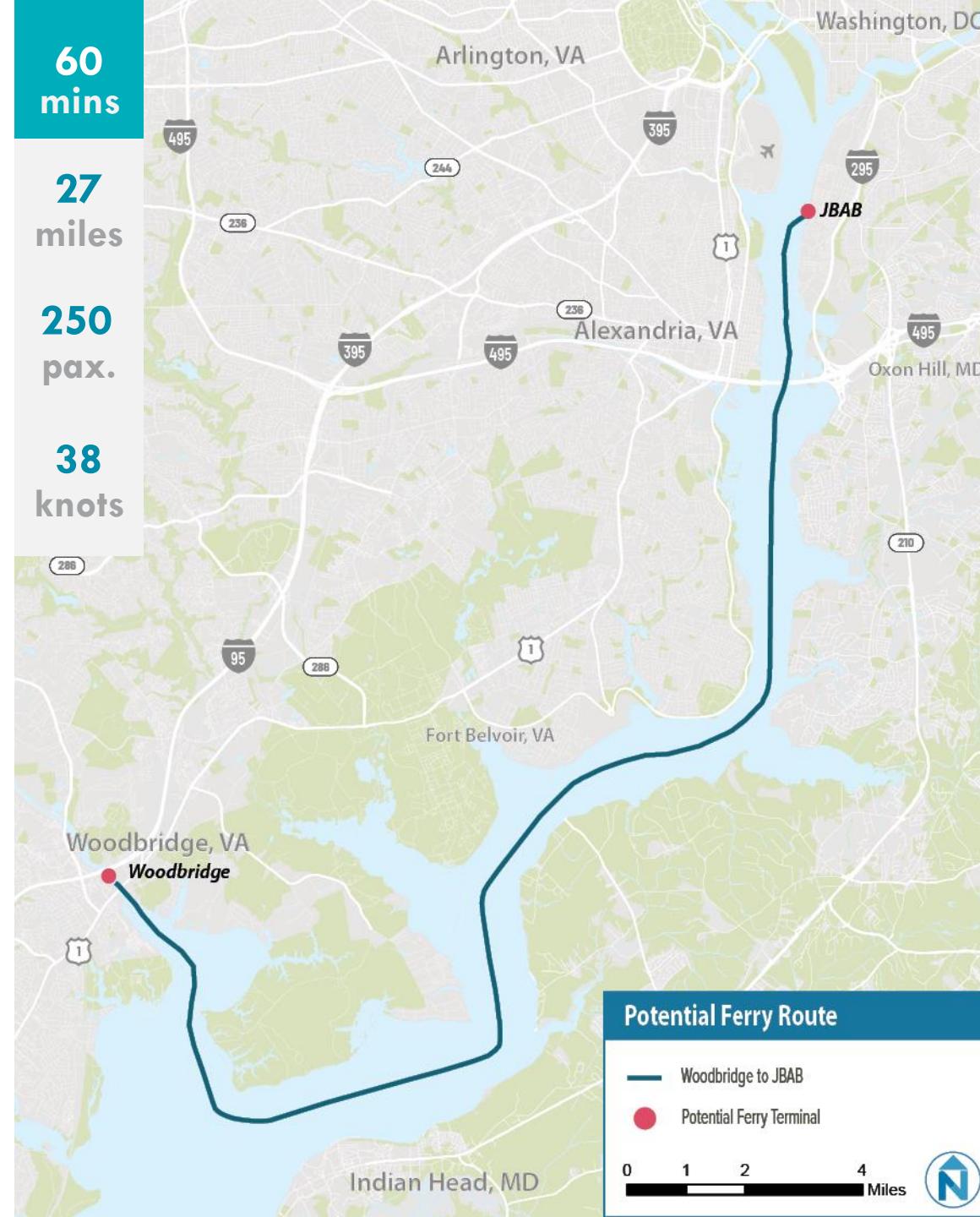
2 VESSELS
Time b/w Sailings
 1 HR

\$20.5M Annual Ops Cost

CAPITAL COST

Varies based on type and size of vessel fleet, final terminal upgrade costs, final dredging costs

\$23.5M - \$53.5M



Charles County / JBAB

ESTIMATED DEMAND

Varies based on fare, travel time, and service frequency:

2 to 14 daily riders

OPERATING COST

Varies based on vessel size, speed and number

1 VESSEL

Time b/w

Sailings

1 HR 40 MIN

\$7.6M Annual Ops Cost

2 VESSELS

Time b/w

Sailings

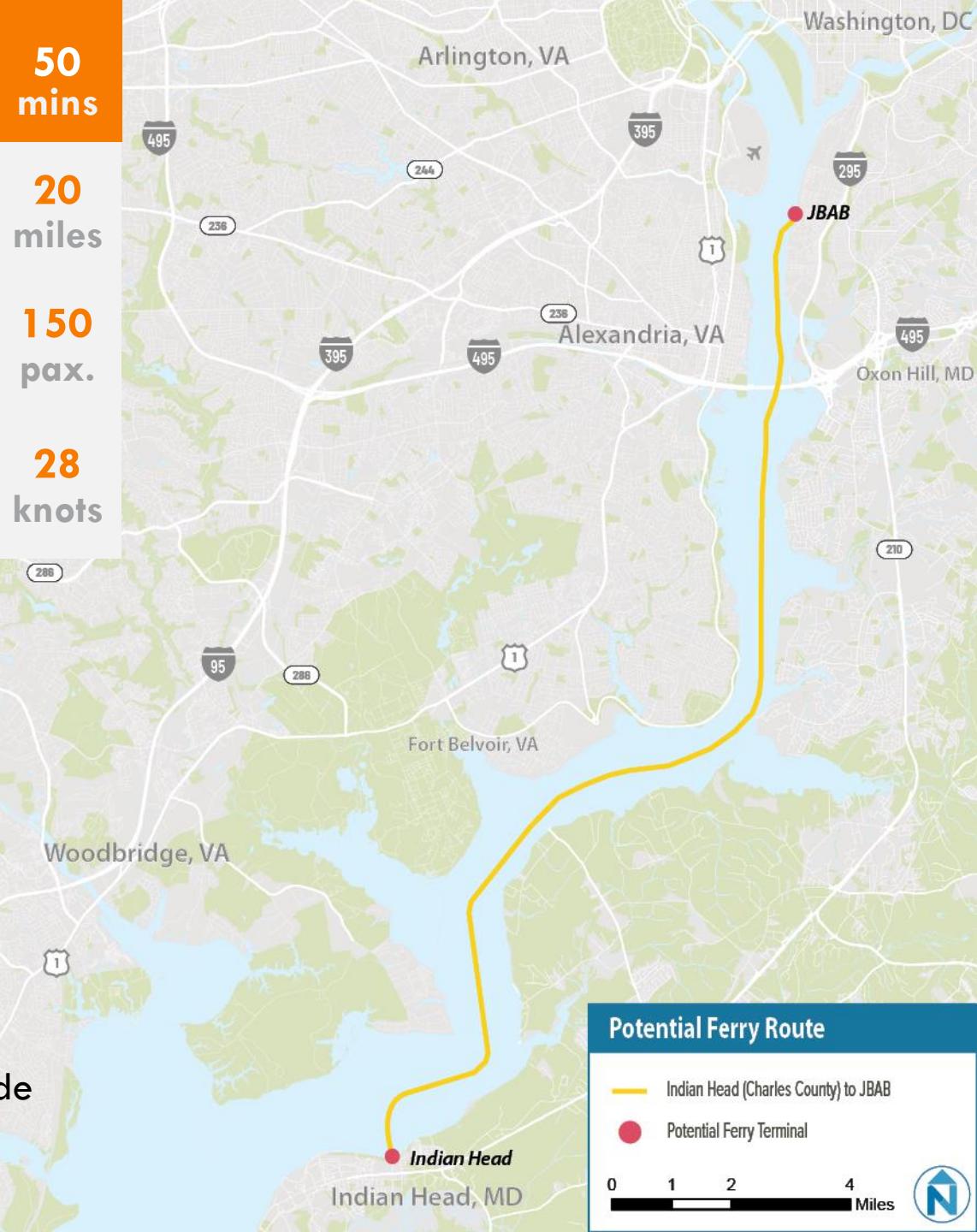
50 MIN

\$14.6M Annual Ops Cost

CAPITAL COST

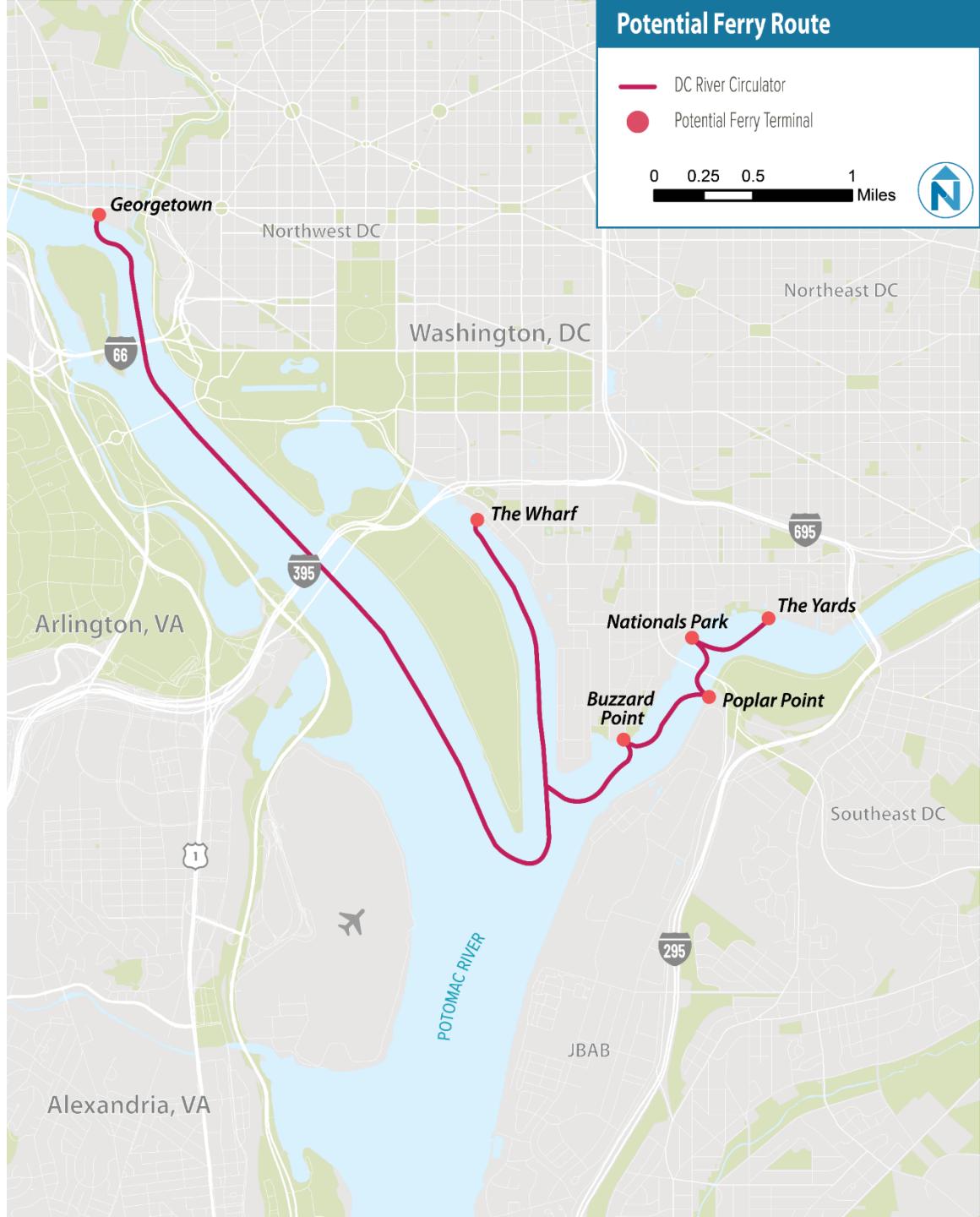
Varies based on type and size of vessel fleet, final terminal upgrade costs, final dredging costs

\$25.6M - \$47.8M



DC River Circulator

- Georgetown
- The Wharf
- Buzzard Point
- Poplar Point
- Nationals Park
- The Yards



DC River Circulator

ESTIMATED DEMAND

Varies based on fare, travel time, and service frequency:

600 to 1,000 daily riders – 4 stops

OPERATING COST – 4 stops

Varies based on vessel size, speed and number

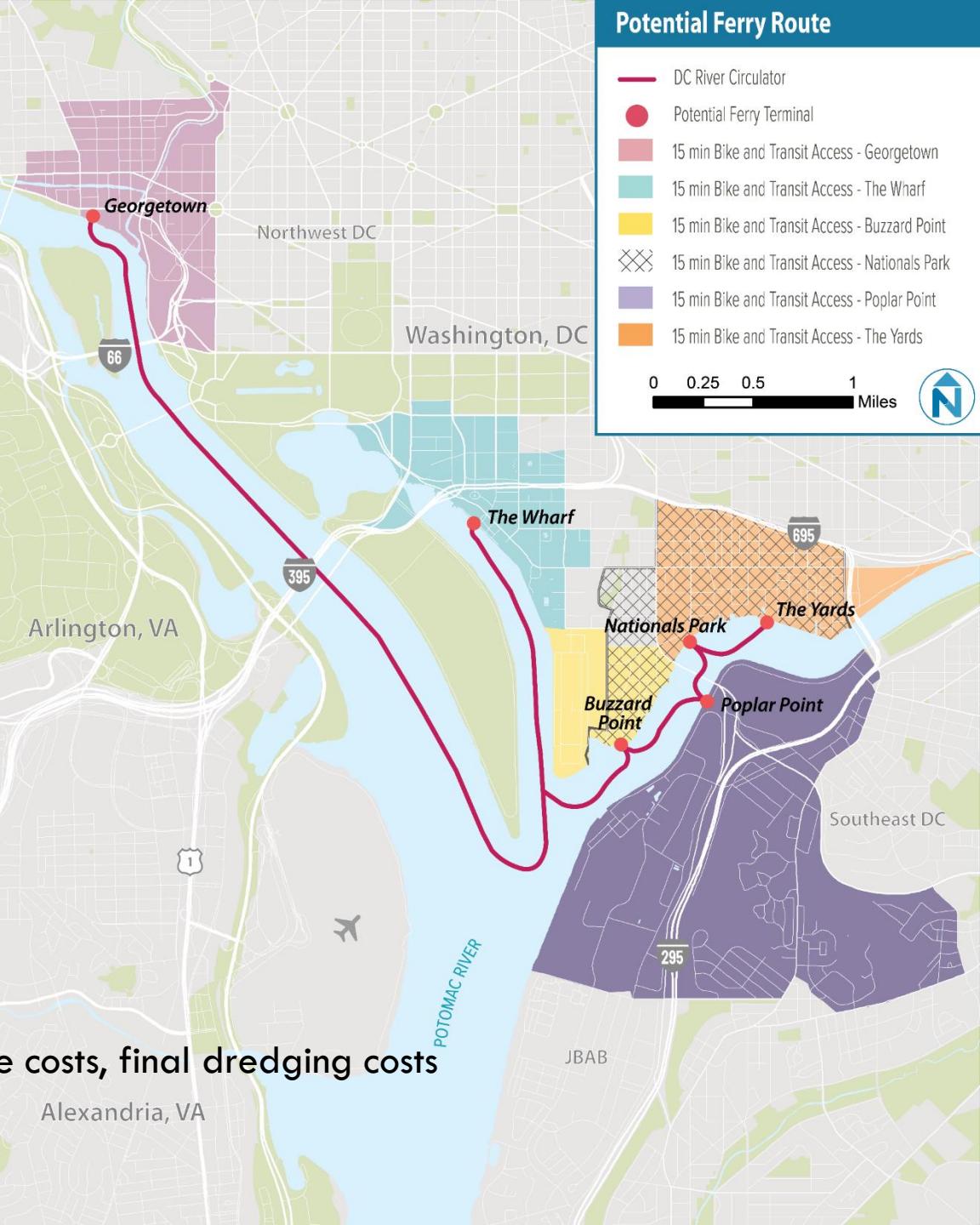
2 VESSELS	Time b/w	Sailings	1 HR
		\$2.2M Annual Ops Cost	

4 VESSELS	Time b/w	Sailings	30 MIN
		\$3.7M Annual Ops Cost	

CAPITAL COST – 4 stops

Varies based on type and size of vessel fleet, final terminal upgrade costs, final dredging costs

\$11.0M - \$32.0M



Financial Summary

Annual Ridership Required at Recovery of OPEX	Woodbridge to JBAB (Fare Price: \$10.00) Two vessels	Charles County to JBAB (Fare Price: \$5.00) One vessel	DC River Circulator (Fare Price: \$5.00) Four vessels - Four stops
Farebox Recovery with estimated ridership	25%	2%	44%
Annual Operating Subsidy Required	\$23 million	\$6 million	\$2.2 million

Lo/No Emissions Vessels

Lo/No Emission Considerations

Technology Maturity

- **Electrification**
 - Diesel vs. Hybrid vs. Electric
 - Energy Density
- **Hydrogen**
 - Immature distribution network
 - Immature technology development in marine environment

Route Specific Applicability

- High speed requirements
- Terminal power availability
- Grid capacity

Lo/No Emission Considerations

International Context

- High level of government investment and subsidy directly into lo/no emissions technology
- Current examples with different operating parameters

US Regulatory Context

- Build America
- Risk adverse/slower to adopt
- Current grant funding available

Examples of Lo/No Emission Vessels

Ferry / Location	Passenger	Propulsion System	Route Speed	Trip Time	Length
MS Medstraum ¹ Stavenger, Norway	147	All Electric	23 knots (1hr) Max: 27 knots	~35-40 minutes	~ 6 miles
Ika Rere ² Wellington, NZ	132	All Electric	20 knots	~ 35 minutes	~6.5 miles
Sea Change ³ San Francisco, CA	75	Hydrogen Fuel Cell	~12 knots; ~20 knots w/batteries	~15 minutes	~ 2 miles



Next Steps

What happens to this project?

- In the “sounding sessions” team has been actively seeking interest in assuming project leadership. So far there is no certainty, but some hope.
- No secured funding source(s). Without funding, project stops.
- Project documentation will be wrapped up tomorrow.
- High likelihood the project will be moved onto back burner until leadership interest can be established.
- Much like an orchestra, without a maestro, the performance does not happen or lacks the appeal of quality music.

Questions? / Comments?



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