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NORTH CAROLINA

House Select Committee on Strategic Transportation Planning and Long Term Funding Solutions

February 1, 2016

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Multimodal Special Projects Engineer

Key Items

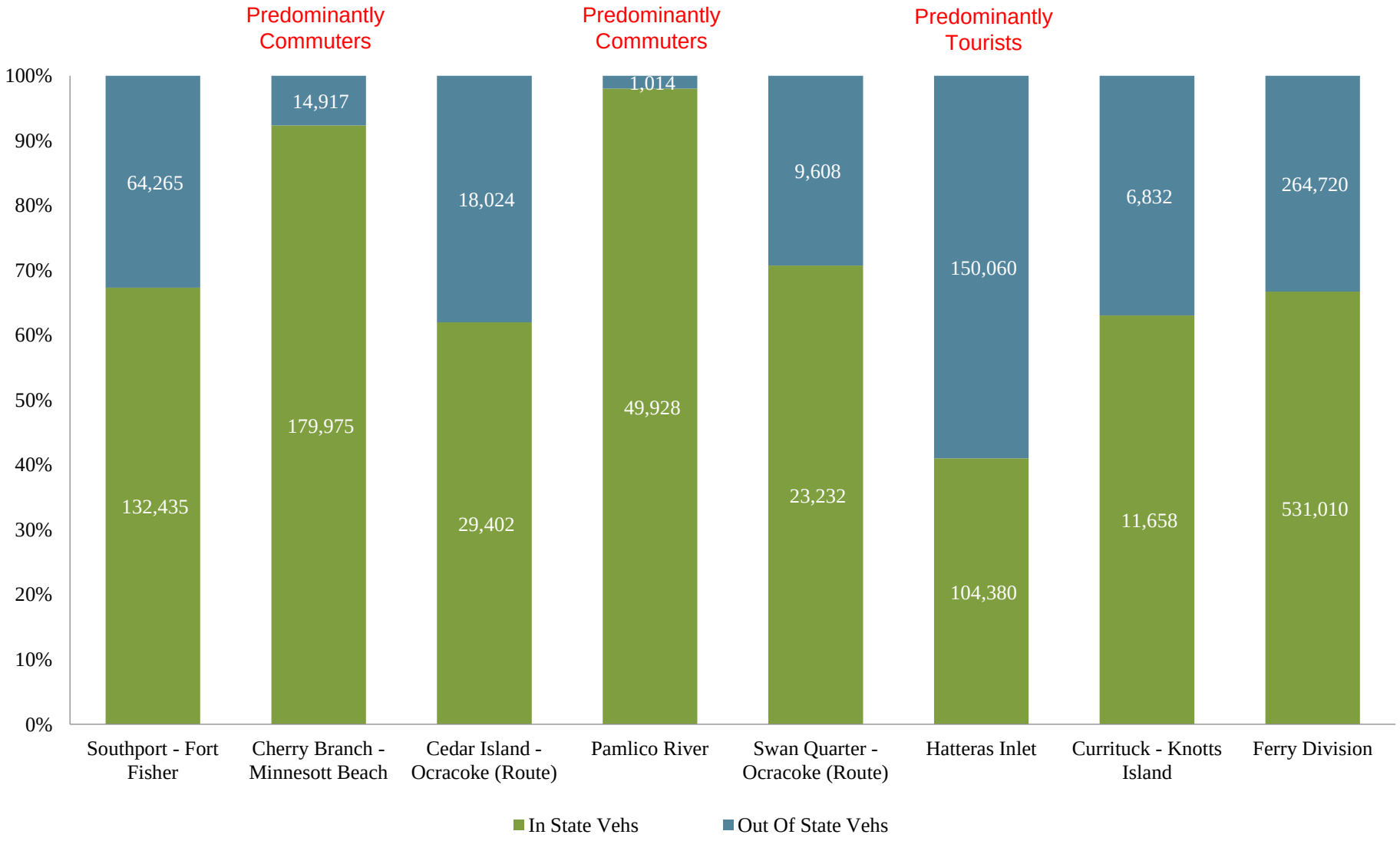
- Ferry System Overview
  - System-wide Overview
  - Vessel Overview
- Overview of 2014 Ferry Div. Long Range Asset Management Plan
- SPOT3.0 Overview/Project Summary
- SPOT4.0 Update
- Update on 2016 Ferry Div. Long Range Asset Management Plan

System-wide Overview

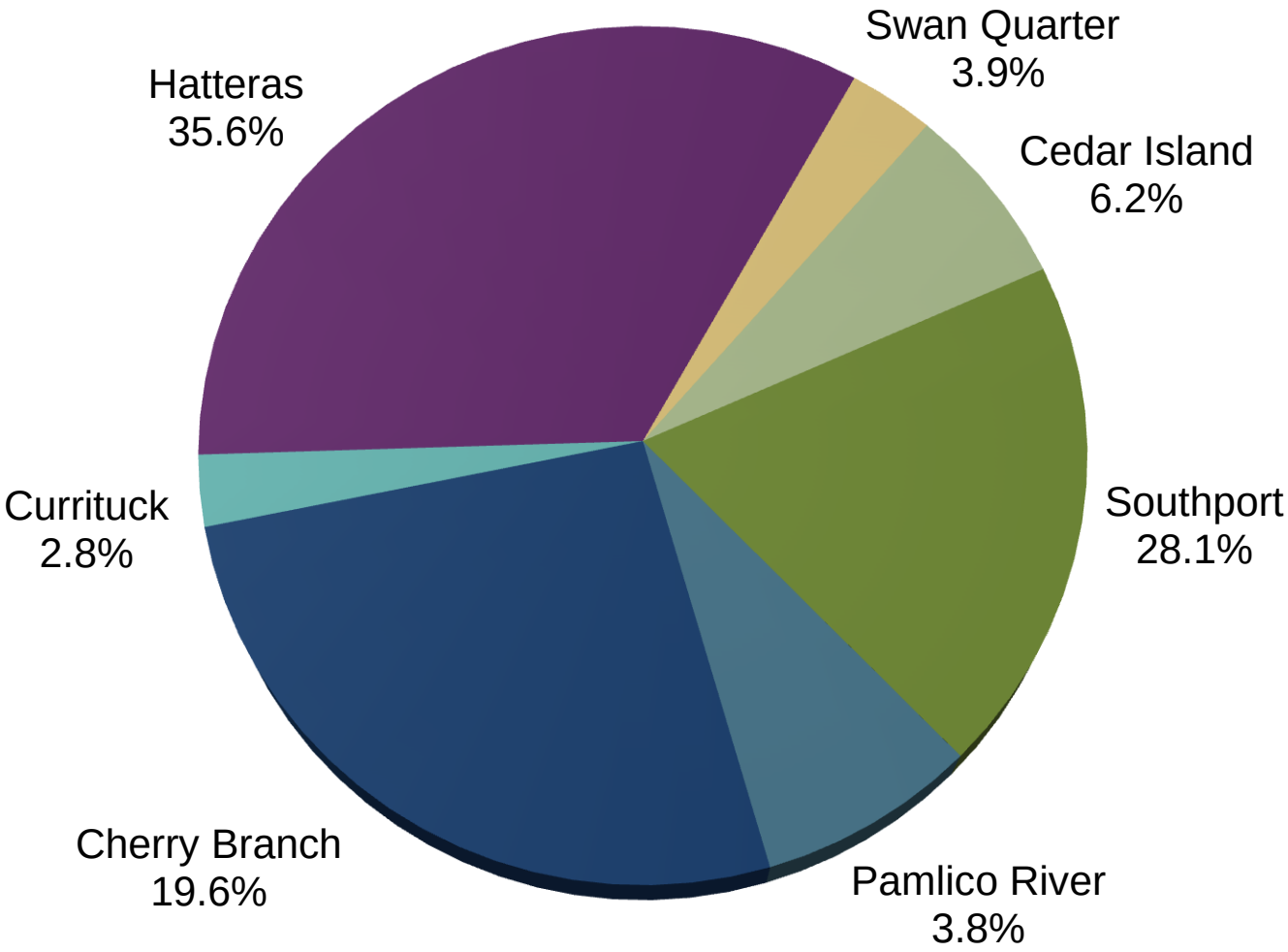
System-wide Overview

- 2nd largest state operated ferry system in the US
- 7 scheduled routes
- 1 emergency route
- 12 terminals
- State owned shipyard
- 4 field maintenance shops
- 21 ferries (5 sound class, 9 river class, & 7 hatteras class)
- Support Fleet (4 tugs, 3 barges, 1 crane barge, & 1 dredge)

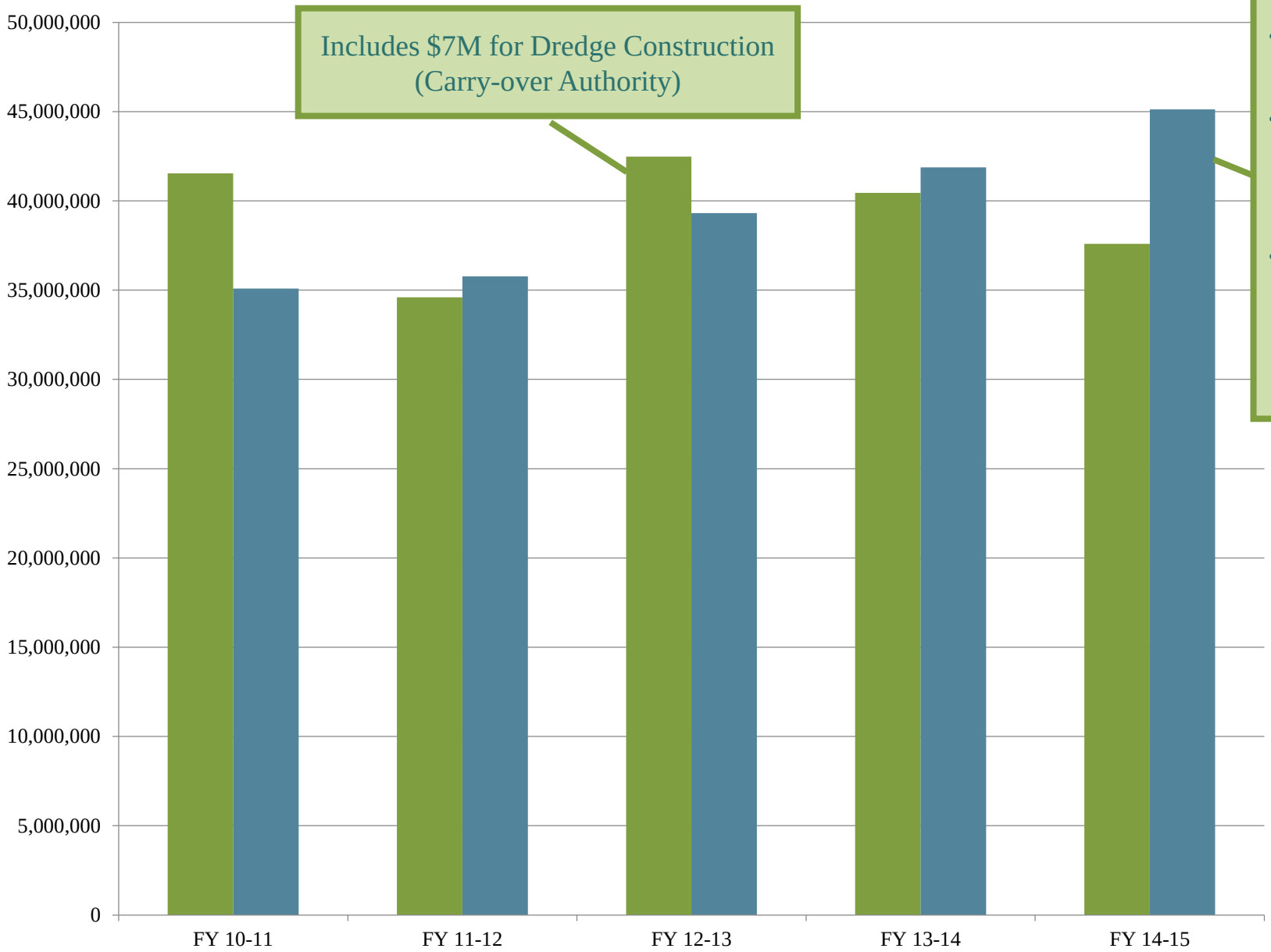
Vehicles Carried: In State Comparison to Out of State



Percent of Vehicles Carried per Route Comparison for CY15



Appropriations vs Actual Expenditures



Includes $7M for Dredge Construction (Carry-over Authority)

Expenditures in excess of allocation:

- $1.3M to run "Long Route" at Hatteras
- $3.3M payout toward new Dredge – actually funded in FY12
- $0.5M spent on dredge spoil site clean-up that was funded in FY13-14

These are O&M funds as allocated each FY by the General Assembly. These funds do not cover projects unless specifically named as one time funding allocation.

Vessel Overview

Vessel Overview

Vessel Class	No. in Class	LOA	Breath	Draft	Carrying Capacity (Vehicles)	Carry Capacity (Passengers)	Average Vessel Age of Fleet in Each Class
Hatteras	7	149’ – 9”	42’ – 0”	4’ – 6”	26	149	25
River	8	180’ – 0”	40”	4’ – 3”	38	300	16
River (Hunt)	1	159’ – 3”	40”	4’ – 3”	22	150	32
Sound	5	220’ -6”	50’ – 0”	5’ – 6”	50	300	23
Dredge	1	80’ – 0”	30’ – 0”	4’ – 0”	N/A	N/A	48
Barges	3	39’ – 0”	18’ – 0”	2’ – 0”	N/A	N/A	49
Crane Barge	1	136’ – 0”	40’ – 0”	4’ – 0”	N/A	N/A	8
Tug (Small)	1	34’ – 0”	12’ – 0”	4’ – 0”	N/A	N/A	33
Tug (Medium)	2	40’ – 0”	14’ – 0”	4’ – 0”	N/A	N/A	49
Tug (Large)	1	56’ – 0”	22’ – 0”	6’ – 6”	N/A	N/A	39

General Dimensions as each vessel varies slightly

Hatteras Class Vessels

Average Age Of This Class = 25 years
Oldest Vessel In This Class = 27 years
Newest Vessel in This Class = 21 years

Note: All 7 Hatteras Class Vessels in the Fleet were constructed between 1989 and 1995.

River Class Vessels

Average Age Of This Class = 16 years
Oldest Vessel In This Class = 23 years
Newest Vessel in This Class = 10 years

The Gov. Hunt was built in 1984 (32 yr. old). This boat is unique to the entire fleet as it was designed to mainly service school children in Currituck County. It is not reflected in the numbers to the left.

Sound Class Vessel

Average Age Of This Class = 23 years
Oldest Vessel In This Class = 51 years
Newest Vessel in This Class = 5 years

Support Fleet Vessels

Dredge Carolina
Built: 1968

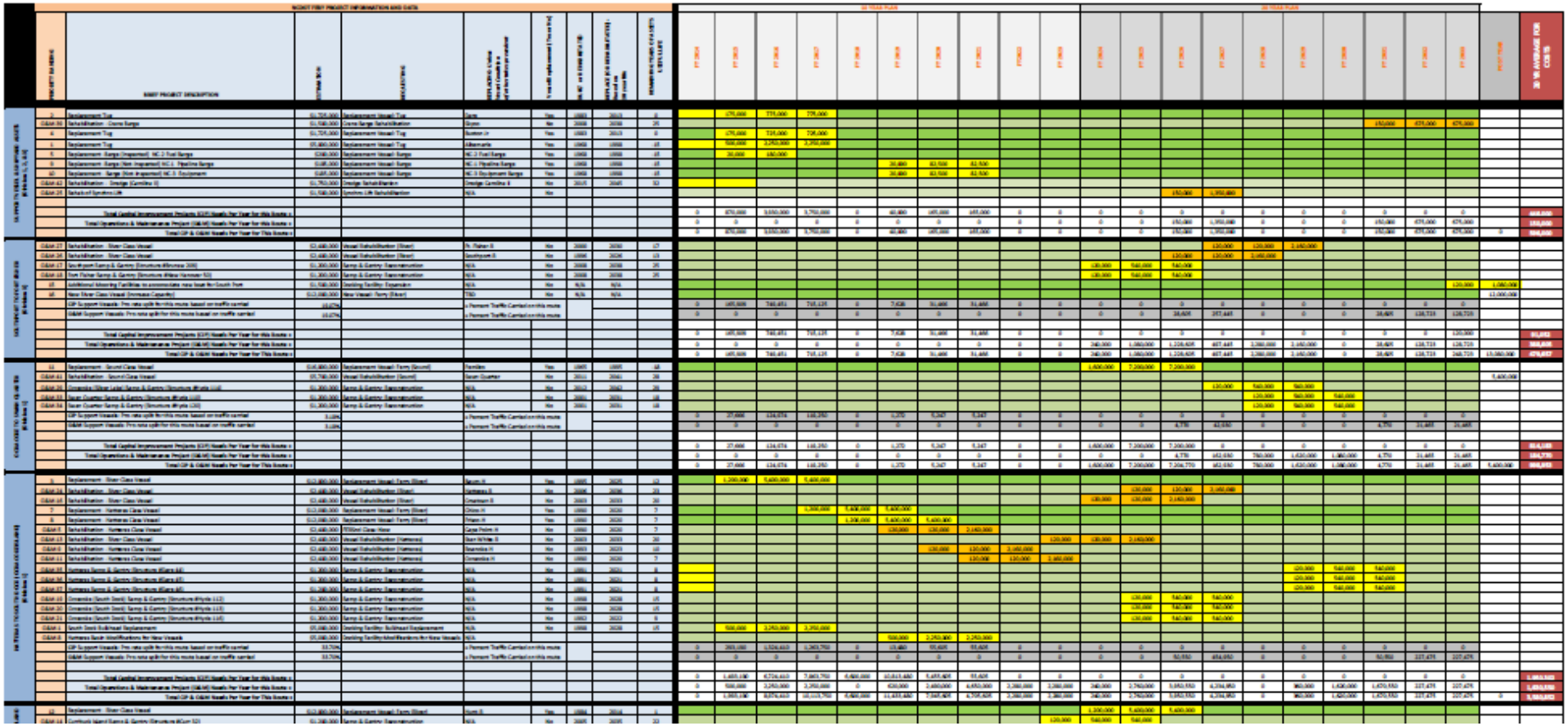
Dredge Manteo
Built: 2016

Tug Buxton, Jr.
Built: 1983

Crane Barge: Skyco
Built: 2008

Overview of 2014 Ferry Div. Long Range Asset Management Plan

CY2014 Long Range Asset Management Plan



- Developed in CY2014 as a basis for SPOT3.0 projects
- Used to define a 20 year plan for managing the Ferry Division's assets
- Leaned heavily on vessel rehabilitation versus vessel replacement.
- Project needs are shown by route to make the spreadsheet easier to review.

CY2014 Long Range Asset Management Plan

Key Decision Factors in the Development of the Asset Management Plan:

1. Based on a life cycle and rehabilitation costs we are defining asset life of ferry vessels as 30 years.
2. Plan developed with heavy focus on vessel rehabilitation around the 20 year mark.
3. The Hatteras Class vessels are being phased out and replaced with River Class vessels in order to provide greater capacity and continuity of operations throughout the Ferry Division.
4. Replacement Costs:
   - Sound Class Vessel Replacement (New Construction) equals approximately $ 15M
   - River Class Vessel Replacement (New Construction) equals approximately $ 12M

CY2014 Long Range Asset Management Plan

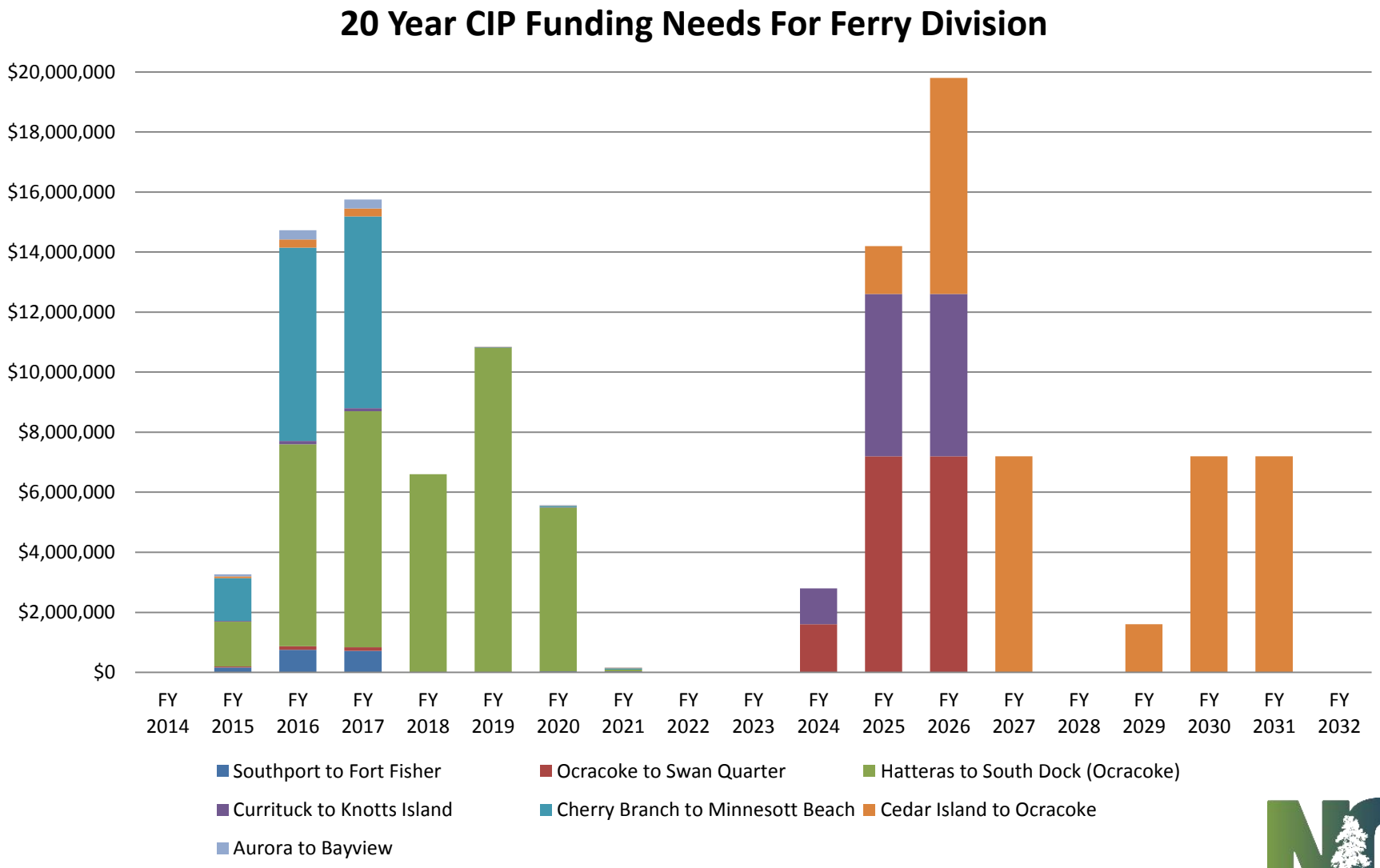
Capital Improvement Projects:

- New Installation of Ramp & Gantry (Capacity Expansion)
- Bulkhead Expansion (Associated with Capacity Expansion)
- Additional Mooring Slips (Associated with Capacity Expansion)
- New Ferry Vessels
- Replacement of Ferry Vessels
- Replacement of Support Fleet Vessels

Operations & Maintenance Projects:

- Vessel & Fleet Maintenance
- Rehabilitation of Ferries and Support Vessels
- Ramp & Gantry Replacement or Rehabilitation
- Bulkhead Repair/Rehabilitation
- Dredging
- Rehabilitation or Replacement of High Value Assets at the Shipyard (i.e.: the Synchrolift, Water Tower, Platen railcars, etc.)
- Maintenance of Stormwater Retention Ponds
- Maintenance/Restoration of Dredge Spoil Sites

CY2014 Long Range Asset Management Plan



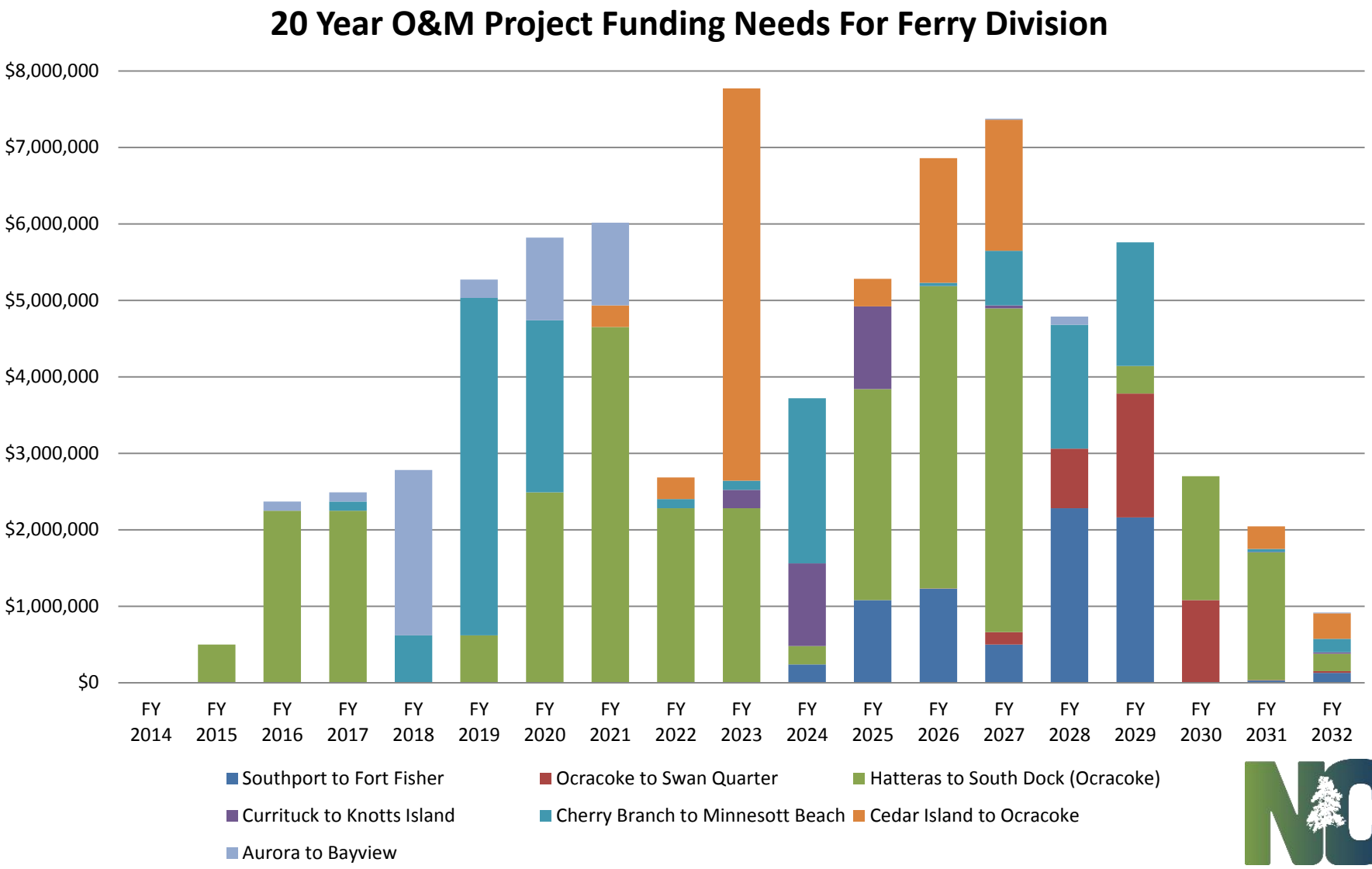
CY2014 Long Range CIP Projects

FERRY DIVISION PRIORITY	BRIEF PROJECT DESCRIPTION	ESTIMATED COST	VESSEL BEING REPLACED	ROUTE CARRIED	DIV.	RPO / MPO
1	Replacement Tug	$5,000,000	Albemarle	System-wide Support Vessel	1, 2 & 3	Albemarle, Mid East, Down East, Cape Fear RPOs & Wilmington MPO
2	Replacement Tug	$1,725,000	Dare	System-wide Support Vessel	1,2, & 3	Albemarle, Mid East, Down East, Cape Fear RPOs & Wilmington MPO
3	Replacement - River Class Vessel	$12,000,000	Baum-H	Yes	1	Albemarle RPO
4	Replacement Tug	$1,725,000	Buxton Jr	System-wide Support Vessel	1, 2, & 3	Albemarle, Mid East, Down East, Cape Fear RPOs & Wilmington MPO
5	Replacement -Barge (Inspected) NC-2 Fuel Barge	$200,000	NC-2 Fuel Barge	System-wide Support Vessel	1, 2, & 3	Albemarle, Mid East, Down East, Cape Fear RPOs & Wilmington MPO
6	Replacement - River Class Vessel	$12,000,000	Kinnakeet-H	Cherry Branch	2	Down East RPO
7	Replacement - River Class Vessel	$12,000,000	Chico-H	Hatteras	1	Albemarle RPO
8	Replacement - River Class Vessel	$12,000,000	Frisco-H	Hatteras	1	Albemarle RPO
9	Replacement -Barge (Not-Inspected) NC-1 Pipeline Barge	$185,000	NC-1 Pipeline Barge	System-wide Support Vessel	1, 2, & 3	Albemarle, Mid East, Down East, Cape Fear RPOs & Wilmington MPO
10	Replacement - Barge (Not-Inspected) NC-3 Equipment	$185,000	NC-3 Equipment Barge	System-wide Support Vessel	1, 2, & 3	Albemarle, Mid East, Down East, Cape Fear RPOs & Wilmington MPO
11	Replacement - Sound Class Vessel	$16,000,000	Pamlico	Swan Quarter	1	Albemarle RPO
12	Replacement - River Class Vessel	$12,000,000	Hunt-R	Currituck	1	Albemarle RPO
13	Replacement - Sound Class Vessel	$16,000,000	Silver Lake	Cedar Island	1 & 2	Albemarle RPO & Down East RPO
14	Replacement - Sound Class Vessel	$16,000,000	Carteret	Cedar Island	1 & 2	Albemarle RPO & Down East RPO
15	Additional Mooring Facilities for additional boat to addressed increased capacity	$1,500,000	N/A	Southport	3	Cape Fear RPO & Wilmington MPO
16	New River Class Vessel (to increase capacity)	$12,000,000	Additional Boat @ SP-FF	Southport	3	Cape Fear RPO & Wilmington MPO

20 Year Boat Replacement Plan

Vessel	New Boat Replacement
Tugs	3
Barges	3
Dredge	0
Syncro-Lift	0
Class Ferry	9
Number of Vessels	**15**
Estimated Total 20-year Cost	Approximately $120M
Average Cost Per Year	Approximately $6M per year

CY2014 Long Range Operations & Maintenance Projects



CY2014 Long Range O&M Project Listing (Partial Listing)

O&M-1	South Dock Bulkhead Replacement	$5,000,000	N/A
O&M-2	Rehabilitation - River Class Vessel	$2,400,000	Russell-R
O&M-3	Rehabilitation - River Class Vessel	$2,400,000	Neuse-R
O&M-4	Cherry Branch Bulkhead Replacement	$5,000,000	N/A
O&M-5	Rehabilitation - Hatteras Class Vessel	$5,700,000	Cape Point-H
O&M-6	Aurora Ramp & Gantry (Structure #Beauf 321)	$1,200,000	N/A
O&M-7	Bayview Ramp & Gantry (Structure #Beauf 322)	$1,200,000	N/A
O&M-8	Hatteras Basin Modifications for New Vessels	$5,000,000	N/A
O&M-9	Rehabilitation - Hatteras Class Vessel	$2,400,000	Roanoke-H
O&M-10	Rehabilitation - Sound Class Vessel	$5,700,000	Cedar Island
O&M-11	Rehabilitation - Hatteras Class Vessel	$2,400,000	Ocracoke-H
O&M-12	Rehabilitation - River Class Vessel	$2,400,000	Lupton-R
O&M-13	Rehabilitation - River Class Vessel	$2,400,000	Stan White-R
O&M-14	Currituck Island Ramp & Gantry (Structure #Curr 32)	$1,200,000	N/A
O&M-15	Knotts Island Ramp & Gantry (Structure #Curr 19)	$1,200,000	N/A
O&M-16	Rehabilitation - River Class Vessel	$2,400,000	Croatoan-R
O&M-17	Southport Ramp & Gantry (Structure #Brunsw 209)	$1,200,000	N/A
O&M-18	Fort Fisher Ramp & Gantry (Structure #New Hanover 50)	$1,200,000	N/A
O&M-19	Ocracoke (South Dock) Ramp & Gantry (Structure #Hyde 112)	$1,200,000	N/A
O&M-20	Ocracoke (South Dock) Ramp & Gantry (Structure #Hyde 113)	$1,200,000	N/A
O&M-21	Ocracoke (South Dock) Ramp & Gantry (Structure #Hyde 116)	$1,200,000	N/A
O&M-22	Cedar Island Ramp & Gantry (Structure #Cart 99)	$1,200,000	N/A
O&M-23	Cedar Island Ramp & Gantry (Structure #Cart 100)	$1,200,000	N/A
O&M-24	Rehabilitation - River Class Vessel	$2,400,000	Hatteras-R
O&M-25	Rehab of Synchro-Lift	$1,500,000	N/A

20 Year Operations & Maintenance Project Plan

Project Type	Number of Projects
Rehabilitation – Hatteras/ River Class Vessel	10
Rehabilitation – Sound Class Vessel	4
Ramp & Gantry Rehab	22
Synchro-Lift Rehab	1
Other Various Projects	5
Number of Projects	**42**
Estimated Total 20-year Cost	Approximately $75.1M
Average Cost Per Year	Approximately $3.8M per year

SPOT3.0 Project Summary

SPOT3.0 Project Eligibility

Types of Ferry Division Eligible Projects evaluated in P3.0:

Statewide	Regional	Division
Not Eligible	• New Installation of Ramp & Gantry (Capacity Expansion) • Bulkhead Expansion (associated with Capacity Expansion) • Additional Mooring Slips (to accommodate capacity expansion)	• New (Capacity Expansion) Ferry (River or Sound Class) • Replacement of Ferry (River, Hatteras, or Sound Class) • Replacement of Support Vessels (tugs, barges, etc.)

SPOT3.0 Project Scoring Overview

	Statewide Mobility	Regional Impact	Division Needs
	N/A	**State-maintained Routes**	**Replacement of Vessels**
Eligible Projects:	N/A	Regional	Regional Division
Overall Weights:	N/A	**70%** Quantitative Data/ 30% Local Input	**50%** Quantitative Data/ 50% Local Input
Quantities Criteria:	N/A	• Safety –15% • Benefit/Cost – 15% • Accessibility/Connectivity – 10% • Asset Efficiency – 10% • Capacity/Congestion – 20%	• Safety – 15% • Benefit/Cost – 15% • Accessibility/ Connectivity – 10% • Asset Efficiency – 10%

SPOT3.0 Project Listing

SPOT ID	First MPO/RPO	Route	Description	Cost to NCDOT
F130001	Albemarle RPO	Statewide: Support Vessel	Replacement Vessel (Support Fleet) for the Tug Albemarle	$ 5,000,000
F130002	Albemarle RPO	Statewide: Support Vessel	Replacement Vessel (Support Fleet) for the Tug Dare	$ 1,725,000
F130003	Albemarle RPO	Hatteras - South Dock (NC 12)	Replacement Vessel - River Class Ferry (for M/V Baum)	$ 12,000,000
F130004	Albemarle RPO	Statewide: Support Vessel	Replacement Vessel (Support Fleet) for the Tug Buxton Jr.	$ 1,725,000
F130005	Albemarle RPO	Statewide: Support Vessel	Replacement Vessel (Support Fleet) for the Fuel Barge (NC-2)	$ 200,000
F130006	Down East RPO	Cherry Branch - Minnesott (NC 306)	Replacement Vessel - River Class Ferry (for M/V Kinnakeet)	$ 12,000,000
F130007	Albemarle RPO	Hatteras - South Dock (NC 12)	Replacement Vessel - River Class Ferry (for M/V Chico)	$ 12,000,000
F130008	Albemarle RPO	Hatteras - South Dock (NC 12)	Replacement Vessel - River Class Ferry (for M/V Frisco)	$ 12,000,000
F130009	Albemarle RPO	Statewide: Support Vessel	Replacement Vessel (Support Fleet) for the Pipeline Barge (NC-1)	$ 185,000
F130010	Albemarle RPO	Statewide: Support Vessel	Replacement Vessel (Support Fleet) for the Equipment Barge (NC-3)	$ 185,000
F130011	Albemarle RPO	Swan Quarter - Ocracoke (NC 45)	Replacement Vessel - Sound Class Ferry (for M/V Pamlico)	$ 16,000,000
F130012	Albemarle RPO	Currituck - Knotts Island (NC 615)	Replacement Vessel - River Class Ferry (for M/V Hunt)	$ 12,000,000
F130013	Albemarle RPO	Cedar Island - Ocracoke (NC 12)	Replacement Vessel - Sound Class Ferry (for M/V Silver Lake)	$ 16,000,000
F130014	Albemarle RPO	Cedar Island - Ocracoke (NC 12)	Replacement Vessel - Sound Class Ferry (for M/V Carteret)	$ 16,000,000
F130015	Cape Fear RPO	Southport - Ft Fisher (NC 211)	Port Expansion: Additional Mooring Facilities to future additional boat	$ 1,500,000
F130016	Cape Fear RPO	Southport - Ft Fisher (NC 211)	New River Class Vessel (to increase capacity)	$ 12,000,000

SPOT3.0 Ferry Division Projects that are in 10 Year Plan

Capital Improvement Projects Currently Funded / Planned in the STI are as shown:

- FY2017- FY2018: F-5700: Construct River Class Ferry (replacement for the M/V Baum) = $12,000,000
  Construction = $6M each respective FY
- FY2021: F-5701: Construct Tug (replacement for the Tug Dare) = $1,750,000

Note: Only projects programmed through FY20 are considered funded. Projects shown after FY20 shall compete again in SPOT4.0. Therefore F-5701 will have to compete again in SPOT4.0.

SPOT4.0 Updates

SPOT4.0 Project Eligibility

Types of Ferry Division Eligible Projects evaluated in P4.0:

Statewide	Regional	Division
Not Eligible	• New Installation of Ramp & Gantry (Capacity Expansion) • Bulkhead Expansion (associated with Capacity Expansion) • Additional Mooring Slips (to accommodate capacity expansion)	• New (Capacity Expansion) Ferry (River or Sound Class) • Replacement of Ferry (River, Hatteras, or Sound Class) • Replacement of Support Vessels (tugs, barges, etc.)

Note: Project eligibility in SPOT4.0 is identical to SPOT3.0.

SPOT4.0 Project Scoring Updates

P4.0 Proposed Ferry Project Scoring Overview

	Statewide Mobility	Regional Impact	Division Needs
	N/A	State Maintained Routes	Replacement of Vessels
Eligible Projects:	N/A	Regional	Regional Division
Overall Weights:	N/A	**70%** Quantitative Data/ 30% Local Input	**50%** Quantitative Data/ 50% Local Input
Quantities Criteria:	N/A	• Asset Condition* –15% • Benefits* – ~~15%~~10% • Accessibility/Connectivity – 10% • Asset Efficiency – ~~10%~~15% • Capacity/Congestion – 20%	• Asset Condition* – 15% • Benefits* – ~~15%~~10% • Accessibility/Connectivity – 10% • Asset Efficiency – ~~10%~~15%

Methodology related to computing score is also proposed to be revised

Projects that will compete in SPOT4.0

SpotID	Existing or Submittal	Project Category	Submitter	ProjectDescription	All MPOs/RPOs	All Divisions	Estimated Total Project Cost
F130001	Existing	Division Needs	Division 1	Replacement Vessel (Support Fleet) for Tugs & Barges - Tugs: Albemarle, Dare, & Buxton Jr. - Barges: Fuel Barge(NC-2), Pipeline Barge(NC-1), Equipment Barge(NC-3)	Albemarle RPO, Down East RPO, Cape Fear RPO, Wilmington MPO	Division 1, Division 2, Division 3	$ 10,745,000
F130006	Existing	Division Needs	Division 2	Replacement Vessel - River Class Ferry (for M/V Kinnakeet)	Down East RPO	Division 2, ,	$ 15,000,000
F130007	Submittal	Division Needs	Division 1	Replacement Vessel - River Class Ferry (for M/V Chico)	Albemarle RPO	Division 1, ,	$ 15,000,000
F130008	Submittal	Division Needs	Division 1	Replacement Vessel - River Class Ferry (for M/V Frisco)	Albemarle RPO	Division 1, ,	$ 15,000,000
F130012	Submittal	Division Needs	Division 1	Replacement Vessel - River Class Ferry (for M/V Hunt)	Albemarle RPO	Division 1, ,	$ 15,000,000
F130013	Existing	Division Needs	Division 1	Replacement Vessel - Sound Class Ferry (for M/V Silver Lake)	Albemarle RPO, Down East RPO,	Division 1, Division 2,	$ 15,000,000
F130014	Submittal	Division Needs	Division 1	Replacement Vessel - Sound Class Ferry (for M/V Carteret)	Albemarle RPO, Down East RPO,	Division 1, Division 2,	$ 18,000,000
F150235	Submittal	Division Needs	Wilmington Urban Area MPO	Acquire new river class vessel for Southport to Ft. Fisher route.	Cape Fear RPO, Wilmington MPO	Division 3	$ 15,000,000
F150236	Submittal	Regional Impact	Wilmington Urban Area MPO	Construct additional mooring facilities at Southport Terminal.	Cape Fear RPO, Wilmington MPO	Division 3	$ 1,500,000

Update on 2016 Ferry Div. Long Range Asset Management Plan

CY2016 Long Range Asset Management Plan

NCDOT FERRY DIVISION
20 YR ASSET MANAGEMENT PLAN

NCDOT FERRY DIVISION PROJECT INFORMATION AND DATA

Project Type	BRIEF PROJECT DESCRIPTION	ESTIMATED COST	REQUESTING	REPLACING - Unless Vessel Condition of other takes precedent	Vessel Replacement (Yes or No)	BUILT or REHABILITATED	REPLACE - Based on 30 year Vessel Life	REMAINING YEARS OF ASSETS USEFULL LIFE
Capital	Replacement Tug	$1,725,000	Replacement Vessel: Tug	Dare	Yes	1983	2013	0
Capital	Replacement - Crane Barge	$1,500,000	Crane Barge Replacement	Skyco	No	2008	2038	25
Capital	Replacement Tug	$1,725,000	Replacement Vessel: Tug	Buxton Jr	Yes	1983	2013	0
Capital	Replacement Tug	$1,725,000	Replacement Vessel: Tug	Currituck	Yes	1968	1998	-15
Capital	Replacement Tug	$5,000,000	Replacement Vessel: Tug	Albemarle	Yes	1968	1998	-15
Capital	Replacement -Barge (Uinspected) NC-2 Fuel Barge	$200,000	Replacement Vessel: Barge	NC-2 Fuel Barge	Yes	1968	1998	-15
Capital	Replacement -Barge (Not-Inspected) NC-1 Pipeline Barge	$185,000	Replacement Vessel: Barge	NC-1 Pipeline Barge	Yes	1968	1998	-15
Capital	Replacement - Barge (Not-Inspected) NC-3 Equipment	$185,000	Replacement Vessel: Barge	NC-3 Equipment Barge	Yes	1968	1998	-15
Capital	Rehabilitation - Dredge (Carolina I)	$2,500,000	Dredge Rehabilitation	Dredge Carolina	No	2016	2046	33
Capital	Dredge (Carolina I)	$0	Dredge - Plan is to take Off Line in 2018		No	1962	1992	-21
O&M	Advertising & PIO Budget	$100,000	Advertising & PIO Budget	N/A	No	N/A		
O&M	Ultra-High Pressure Washer	$600,000	Replacement Ultra-High Pressure Washer	N/A	No	N/A		
O&M	Water Tower Rehabilitation & subsequent routine painting	$500,000	Water Tower Rehabilitation	N/A	No	1982		
O&M	Rehab of Synchro-Lift	$1,500,000	Synchro-Lift Rehabilitation	N/A	No			
	Vessel Related Capital Improvement Projects (CIP) Needs Per Year for this Route =							
	OTHER Capital Improvement Projects (CIP) Needs Per Year for this Route =							
	Ramp & Gantry Operations & Maint Proj (O&M) Needs Per Year for this Route =							
	Dredging Operations & Maint Proj (O&M) Needs Per Year for this Route =							
	Marine Maintenance (O&M) Needs Per Year for this Route =							
	Ferry Personnel Operational (O&M) Needs Per Year for this Route =							
	Facilities Capital Projects (CIP) Needs Per Year for this Route =							
	Facilities and Operational (O&M) Needs Per Year for this Route =							
	Vessel Operational & Maint. (O&M) Needs Per Year for this Route =							
	Total CIP Needs Per Year for this Route =							
	Total O&M Needs per Year for this Route =							
	Total CIP & O&M Needs Per Year For This Route =							
Capital	Replacement - River Class Vessel	$15,000,000	Vessel Replacement (River)	Ft. Fisher-R	Yes	2000	2030	17
Capital	Replacement - River Class Vessel	$15,000,000	Vessel Replacement (River)	Southport-R	Yes	1996	2026	13
O&M	Southport Ramp & Gantry (Structure #Brunsw 209)	$1,750,000	Ramp & Gantry: Reconstruction	N/A	No	2008	N/A	
O&M	Fort Fisher Ramp & Gantry (Structure #New Hanover 50)	$1,750,000	Ramp & Gantry: Reconstruction	N/A	No	2008	N/A	
Capital	Additional Mooring Facilities to accomodate new boat for South Port	$1,500,000	Docking Facility: Expansion	N/A	No	N/A	N/A	
Capital	New River Class Vessel (increase Capacity)	$15,000,000	New Vessel: Ferry (River)	TBD	No	N/A	N/A	
	CIP Support Vessels: Pro-rata split for this route based on traffic carri	19.07%	= Percent Traffic Carried on this route					
	O&M Support Vessels: Pro-rata split for this route based on traffic car	19.07%	= Percent Traffic Carried on this route					
	Vessel Related Capital Improvement Projects (CIP) Needs Per Year for this Route =							
	OTHER Capital Improvement Projects (CIP) Needs Per Year for this Route =							
	Ramp & Gantry Operations & Maint Proj (O&M) Needs Per Year for this Route =							
	Dredging Operations & Maint Proj (O&M) Needs Per Year for this Route =							
	Marine Maintenance (O&M) Needs Per Year for this Route =							
	Ferry Personnel Operational (O&M) Needs Per Year for this Route =							
	Facilities Capital Projects (CIP) Needs Per Year for this Route =							
	Facilities and Operational (O&M) Needs Per Year for this Route =							
	Vessel Operational & Maint. (O&M) Needs Per Year for this Route =							
	Total CIP Needs Per Year for this Route =							
	Total O&M Needs per Year for this Route =							
	Total CIP & O&M Needs Per Year For This Route =							
Capital	Replacement - Sound Class Vessel	$18,000,000	Replacement Vessel: Ferry (Sound)	Swan Quarter	No	2011	2041	28
O&M	Ocracoke (Silver Lake) Ramp & Gantry (Structure #Hyde 114)	$1,750,000	Ramp & Gantry: Reconstruction	N/A	No	2012	N/A	
O&M	Swan Quarter Ramp & Gantry (Structure #Hyde 110)	$1,750,000	Ramp & Gantry: Reconstruction	N/A	No	2001	N/A	
O&M	Swan Quarter Ramp & Gantry (Structure #Hyde 120)	$1,750,000	Ramp & Gantry: Reconstruction	N/A	No	2001	N/A	
	CIP Support Vessels: Pro-rata split for this route based on traffic carri	3.18%	= Percent Traffic Carried on this route					
	O&M Support Vessels: Pro-rata split for this route based on traffic car	3.18%	= Percent Traffic Carried on this route					
	Vessel Related Capital Improvement Projects (CIP) Needs Per Year for this Route =							
	OTHER Capital Improvement Projects (CIP) Needs Per Year for this Route =							
	Ramp & Gantry Operations & Maint Proj (O&M) Needs Per Year for this Route =							
	Dredging Operations & Maint Proj (O&M) Needs Per Year for this Route =							
	Marine Maintenance (O&M) Needs Per Year for this Route =							
	Ferry Personnel Operational (O&M) Needs Per Year for this Route =							
	Facilities Capital Projects (CIP) Needs Per Year for this Route =							
	Facilities and Operational (O&M) Needs Per Year for this Route =							
	Vessel Operational & Maint. (O&M) Needs Per Year for this Route =							
	Total CIP Needs Per Year for this Route =							
	Total O&M Needs per Year for this Route =							
	Total CIP & O&M Needs Per Year For This Route =							

Project Type	10 YEAR PLAN FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY2022	FY 2023	FY2024	FY 2025
Capital					175,000	775,000	775,000			
Capital										
Capital						175,000	725,000	725,000		
Capital				500,000	2,250,000	2,250,000				
Capital				20,000	180,000					
Capital						20,000	82,500	82,500		
Capital						20,000	82,500	82,500		
Capital	Take Delivery									
Capital										
O&M	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
O&M		600,000								
O&M		500,000							65,000	
O&M										
Vessel Related Capital Improvement Projects (CIP) Needs Per Year for this Route =	0	0	0	520,000	2,605,000	3,240,000	1,665,000	890,000	0	0
OTHER Capital Improvement Projects (CIP) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0
Ramp & Gantry Operations & Maint Proj (O&M) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0
Dredging Operations & Maint Proj (O&M) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	450,000
Marine Maintenance (O&M) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0
Ferry Personnel Operational (O&M) Needs Per Year for this Route =										
Facilities Capital Projects (CIP) Needs Per Year for this Route =	445,000	290,000	1,200,000	0	150,000	0	2,200,000	0	2,000,000	30,000
Facilities and Operational (O&M) Needs Per Year for this Route =	90,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000
Vessel Operational & Maint. (O&M) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0
Total CIP Needs Per Year for this Route =	445,000	290,000	1,200,000	520,000	2,755,000	3,240,000	3,865,000	890,000	2,000,000	30,000
Total O&M Needs per Year for this Route =	635,000	1,600,000	1,410,000	210,000	360,000	210,000	2,410,000	210,000	2,275,000	690,000
Total CIP & O&M Needs Per Year For This Route =	1,080,000	1,890,000	2,610,000	730,000	3,115,000	3,450,000	6,275,000	1,100,000	4,275,000	720,000
Capital										
Capital										1,200,000
O&M									150,000	800,000
O&M									150,000	800,000
Capital					125,000	1,375,000				
Capital						1,200,000	6,900,000	6,900,000		
Vessel Related Capital Improvement Projects (CIP) Needs Per Year for this Route =	0	0	0	0	0	1,200,000	6,900,000	6,900,000	0	1,200,000
OTHER Capital Improvement Projects (CIP) Needs Per Year for this Route =	0	0	0	0	125,000	1,375,000	0	0	0	0
Ramp & Gantry Operations & Maint Proj (O&M) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	300,000	1,600,000
Dredging Operations & Maint Proj (O&M) Needs Per Year for this Route =	0	0	0	475,000	0	0	0	0	475,000	0
Marine Maintenance (O&M) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0
Ferry Personnel Operational (O&M) Needs Per Year for this Route =	2,589,035	2,651,980	2,665,240	2,678,566	2,691,959	2,705,419	2,718,946	3,487,680	3,485,018	3,502,443
Facilities Capital Projects (CIP) Needs Per Year for this Route =	0	0	85,000	0	0	45,000	35,000	0	0	0
Facilities and Operational (O&M) Needs Per Year for this Route =	20,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Vessel Operational & Maint. (O&M) Needs Per Year for this Route =	1,577,726	1,585,615	1,593,543	1,601,511	1,609,518	1,617,566	1,625,654	2,162,120	2,172,930	2,183,795
Total CIP Needs Per Year for this Route =	0	0	85,000	0	125,000	2,620,000	6,935,000	6,900,000	0	1,200,000
Total O&M Needs per Year for this Route =	4,186,761	4,262,595	4,283,783	4,780,077	4,326,477	4,347,985	4,369,600	5,674,800	6,457,948	7,311,238
Total CIP & O&M Needs Per Year For This Route =	4,186,761	4,262,595	4,368,783	4,780,077	4,451,477	6,967,985	11,304,600	12,574,800	6,457,948	8,511,238
Capital										
O&M										
O&M										
O&M										
Vessel Related Capital Improvement Projects (CIP) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0
OTHER Capital Improvement Projects (CIP) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0
Ramp & Gantry Operations & Maint Proj (O&M) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0
Dredging Operations & Maint Proj (O&M) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	350,000
Marine Maintenance (O&M) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	600,000	0
Ferry Personnel Operational (O&M) Needs Per Year for this Route =	1,834,049	1,893,219	1,902,685	1,912,198	1,921,759	1,931,368	1,941,025	1,950,730	1,960,484	1,970,286
Facilities Capital Projects (CIP) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0
Facilities and Operational (O&M) Needs Per Year for this Route =	35,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Vessel Operational & Maint. (O&M) Needs Per Year for this Route =	2,073,640	2,084,008	2,094,428	2,104,901	2,115,425	2,126,002	2,136,632	2,147,315	2,158,052	2,168,842
Total CIP Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0
Total O&M Needs per Year for this Route =	3,942,689	4,017,227	4,037,113	4,057,099	4,077,184	4,097,370	4,117,657	4,138,045	4,758,536	4,529,128
Total CIP & O&M Needs Per Year For This Route =	3,942,689	4,017,227	4,037,113	4,057,099	4,077,184	4,097,370	4,117,657	4,138,045	4,758,536	4,529,128

Project Type	20 YEAR PLAN FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035	Cumulative Totals
Capital											
Capital						350,000	675,000	675,000			
Capital		175,000	725,000	725,000							
Capital											
Capital											
Capital											
Capital											
Capital											
Capital											
O&M	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	300,000	100,000	
O&M											
O&M						65,000					
O&M			150,000	1,350,000							
Vessel Related Capital Improvement Projects (CIP) Needs Per Year for this Route =	0	175,000	725,000	725,000	0	150,000	675,000	675,000	0	0	12,045,000
OTHER Capital Improvement Projects (CIP) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0	0
Ramp & Gantry Operations & Maint Proj (O&M) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0	0
Dredging Operations & Maint Proj (O&M) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	450,000	900,000
Marine Maintenance (O&M) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0	0
Ferry Personnel Operational (O&M) Needs Per Year for this Route =											
Facilities Capital Projects (CIP) Needs Per Year for this Route =	0	0	1,400,000	1,200,000	35,000	185,000	0	0	0	0	9,135,000
Facilities and Operational (O&M) Needs Per Year for this Route =	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	2,180,000
Vessel Operational & Maint. (O&M) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0	0
Total CIP Needs Per Year for this Route =	0	175,000	2,125,000	1,925,000	35,000	335,000	675,000	675,000	0	0	21,180,000
Total O&M Needs per Year for this Route =	210,000	210,000	1,760,000	2,760,000	245,000	460,000	210,000	210,000	210,000	660,000	16,945,000
Total CIP & O&M Needs Per Year For This Route =	210,000	385,000	3,885,000	4,685,000	280,000	795,000	885,000	885,000	210,000	660,000	38,125,000
Capital				1,200,000	6,900,000	6,900,000					
Capital	6,900,000	6,900,000									
O&M	800,000										
O&M	800,000										
Capital											
Capital											
Vessel Related Capital Improvement Projects (CIP) Needs Per Year for this Route =	6,900,000	6,900,000	0	1,200,000	6,900,000	6,900,000	0	0	0	0	45,000,000
OTHER Capital Improvement Projects (CIP) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0	1,500,000
Ramp & Gantry Operations & Maint Proj (O&M) Needs Per Year for this Route =	1,600,000	0	0	0	0	0	0	0	0	0	3,500,000
Dredging Operations & Maint Proj (O&M) Needs Per Year for this Route =	0	0	0	475,000	0	0	0	0	0	475,000	1,900,000
Marine Maintenance (O&M) Needs Per Year for this Route =	0	0	0	0	0	540,000	240,000	0	0	0	780,000
Ferry Personnel Operational (O&M) Needs Per Year for this Route =	3,519,955	3,537,555	3,555,243	3,573,019	3,590,884	3,608,839	3,626,883	3,645,017	3,663,242	3,681,558	65,178,482
Facilities Capital Projects (CIP) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	2,350,000	2,515,000
Facilities and Operational (O&M) Needs Per Year for this Route =	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	520,000
Vessel Operational & Maint. (O&M) Needs Per Year for this Route =	2,194,714	2,205,687	2,216,716	2,227,799	2,238,938	2,250,133	2,261,384	2,272,691	2,284,054	2,295,474	40,177,568
Total CIP Needs Per Year for this Route =	6,900,000	6,900,000	0	1,200,000	6,900,000	6,900,000	0	0	0	2,350,000	49,015,000
Total O&M Needs per Year for this Route =	7,339,669	5,768,242	5,796,959	6,300,818	5,854,822	6,423,972	6,153,267	5,942,708	6,447,296	6,002,033	112,031,050
Total CIP & O&M Needs Per Year For This Route =	14,239,669	12,668,242	5,796,959	7,500,818	12,754,822	13,323,972	6,153,267	5,942,708	6,447,296	8,352,033	161,046,050
Capital											
O&M		150,000	800,000	800,000							
O&M			150,000	800,000	800,000						
O&M			150,000	800,000	800,000						
Vessel Related Capital Improvement Projects (CIP) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0	0
OTHER Capital Improvement Projects (CIP) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0	0
Ramp & Gantry Operations & Maint Proj (O&M) Needs Per Year for this Route =	0	150,000	1,300,000	2,400,000	1,600,000	0	0	0	0	0	5,250,000
Dredging Operations & Maint Proj (O&M) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0	350,000
Marine Maintenance (O&M) Needs Per Year for this Route =	255,000	0	0	0	0	600,000	0	0	0	255,000	1,710,000
Ferry Personnel Operational (O&M) Needs Per Year for this Route =	1,980,138	1,990,038	1,999,989	2,009,988	2,020,038	2,030,139	2,040,289	2,050,491	2,060,743	2,071,047	39,470,703
Facilities Capital Projects (CIP) Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0	0
Facilities and Operational (O&M) Needs Per Year for this Route =	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	795,000
Vessel Operational & Maint. (O&M) Needs Per Year for this Route =	179,686	2,190,585	2,201,539	2,212,545	2,223,608	2,234,726	2,245,900	2,257,129	2,268,415	2,279,757	41,520,135
Total CIP Needs Per Year for this Route =	0	0	0	0	0	0	0	0	0	0	0
Total O&M Needs per Year for this Route =	2,454,824	4,370,623	5,341,528	6,462,533	5,883,646	4,304,865	4,926,189	4,347,620	4,369,158	4,645,804	89,078,838
Total CIP & O&M Needs Per Year For This Route =	2,454,824	4,370,623	5,341,528	6,462,533	5,883,646	4,304,865	4,926,189	4,347,620	4,369,158	4,645,804	89,078,838

Project Type	Tolls raised On the Respective Routes (can only be spent on CIP vessel replacements as per STI legislation)	5YR AVERAGED ANNUAL NEEDS COSTS (Immediate Needs) Adjusted to account for anticipated tolling revenues	10YR AVERAGED ANNUAL NEEDS COSTS Adjusted to account for anticipated tolling revenues	20YR AVERAGE ANNUAL NEEDS COSTS Adjusted to account for anticipated tolling revenues
Capital				
Capital				
Capital				
Capital				
Capital				
Capital				
Capital				
Capital				
Capital				
O&M				
O&M				
O&M				
O&M				
Vessel Related Capital Improvement Projects (CIP) Needs Per Year for this Route =	12,045,000			
OTHER Capital Improvement Projects (CIP) Needs Per Year for this Route =	0			
Ramp & Gantry Operations & Maint Proj (O&M) Needs Per Year for this Route =	0			
Dredging Operations & Maint Proj (O&M) Needs Per Year for this Route =	900,000			
Marine Maintenance (O&M) Needs Per Year for this Route =	0			
Ferry Personnel Operational (O&M) Needs Per Year for this Route =				
Facilities Capital Projects (CIP) Needs Per Year for this Route =	9,135,000			
Facilities and Operational (O&M) Needs Per Year for this Route =	2,180,000			
Vessel Operational & Maint. (O&M) Needs Per Year for this Route =	0			
Total CIP Needs Per Year for this Route =	21,180,000	$ 1,042,000	$ 1,523,500	$ 1,059,000
Total O&M Needs per Year for this Route =	16,945,000	$ 843,000	$ 1,001,000	$ 847,250
Total CIP & O&M Needs Per Year For This Route =	38,125,000	$ 1,885,000	$ 2,524,500	$ 1,906,250
Capital				
Capital				
O&M				
O&M				
Capital				
Capital				
Vessel Related Capital Improvement Projects (CIP) Needs Per Year for this Route =	45,000,000			
OTHER Capital Improvement Projects (CIP) Needs Per Year for this Route =	1,500,000			
Ramp & Gantry Operations & Maint Proj (O&M) Needs Per Year for this Route =	3,500,000			
Dredging Operations & Maint Proj (O&M) Needs Per Year for this Route =	1,900,000			
Marine Maintenance (O&M) Needs Per Year for this Route =	780,000			
Ferry Personnel Operational (O&M) Needs Per Year for this Route =	65,178,482	based on an average from 1994-2014	-CIP yearly average needs have been	
Facilities Capital Projects (CIP) Needs Per Year for this Route =	2,515,000	toll revenues for this	adjusted to reflect the utilization of toll funds	
Facilities and Operational (O&M) Needs Per Year for this Route =	520,000	route = $760,000 annually	raised for use in CIP project funding as per	
Vessel Operational & Maint. (O&M) Needs Per Year for this Route =	40,177,568	$ 760,000	the STI legislation	
Total CIP Needs Per Year for this Route =	49,015,000		$ (718,000)	$ 1,786,500	$ 1,690,750
Total O&M Needs per Year for this Route =	112,031,050		$ 4,367,939	$ 5,000,126	$ 5,601,553
Total CIP & O&M Needs Per Year For This Route =	161,046,050		$ 4,409,939	$ 6,786,626	$ 8,052,303
Capital				
O&M				
O&M				
O&M				
Vessel Related Capital Improvement Projects (CIP) Needs Per Year for this Route =	0			
OTHER Capital Improvement Projects (CIP) Needs Per Year for this Route =	0			
Ramp & Gantry Operations & Maint Proj (O&M) Needs Per Year for this Route =	5,250,000			
Dredging Operations & Maint Proj (O&M) Needs Per Year for this Route =	350,000			
Marine Maintenance (O&M) Needs Per Year for this Route =	1,710,000			
Ferry Personnel Operational (O&M) Needs Per Year for this Route =	39,470,703	Based on an average from 1994-2014	-CIP yearly average needs have been	
Facilities Capital Projects (CIP) Needs Per Year for this Route =	0	toll revenues for this	adjusted to reflect the utilization of toll funds	
Facilities and Operational (O&M) Needs Per Year for this Route =	795,000	route = $760,000 annually	raised for use in CIP project funding as per	
Vessel Operational & Maint. (O&M) Needs Per Year for this Route =	41,520,135	$ 215,000	the STI legislation	
Total CIP Needs Per Year for this Route =	0		$ (215,000)	$ (215,000)	$ (215,000)
Total O&M Needs per Year for this Route =	89,078,838		$ 4,026,262	$ 4,177,205	$ 4,453,942
Total CIP & O&M Needs Per Year For This Route =	89,078,838		$ 4,026,262	$ 4,177,205	$ 4,453,942

- The 2016 Long Range Plan will be finalized February 2016
- Increased detail in regards to O&M and CIP

CY2016 Long Range Asset Management Plan

Key Decision Factors in the Development of the 2016 Asset Management Plan:

1. Based on a life cycle and rehabilitation costs we are defining asset life of ferry vessels as 30 years. Ferry Division is working with the Research Section to provide a scope of study for a North Carolina university to develop a data driven approach in defining the true asset life of vessels within the Ferry Division.
2. Vessel Rehabilitation (Extensive) was eliminated as a planned approach in this asset management plan because there is no existing funding source for this costly procedure.
3. The Hatteras Class vessels are being phased out and replaced with River Class vessels in order to provide greater capacity and continuity of operations throughout the Ferry Division.
4. Replacement Costs:
   - Sound Class Vessel Replacement (New Construction) equals approximately $ 18M
   - River Class Vessel Replacement (New Construction) equals approximately $ 15M
5. This plan is much more in depth and breaks O&M and CIP projects into smaller and better defined sub-sets
6. Facility CIP needs are added but not counted toward STI (eligible) needs

Items shown in RED indicate change from key factors used to develop FY2014 Plan

Questions?