



NORTH CAROLINA

Department of Transportation

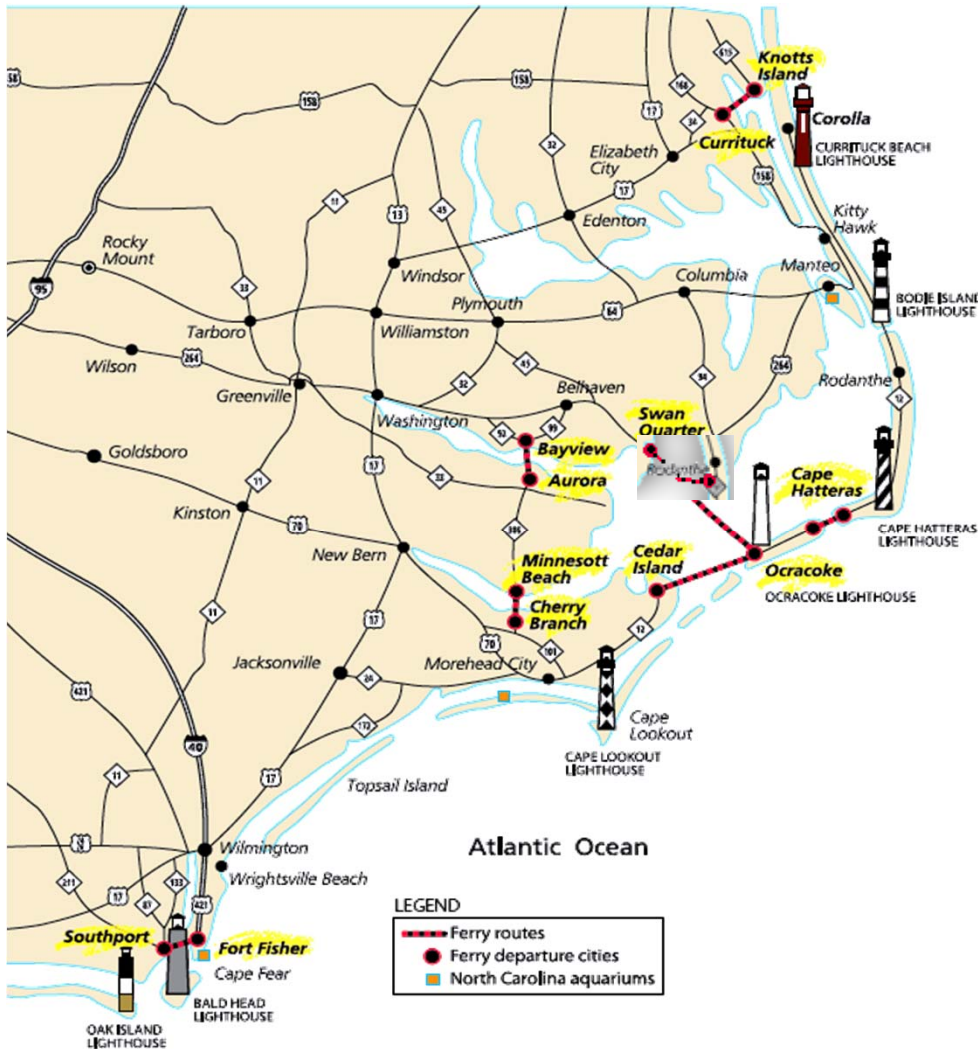


Ferry Division Overview

Sterling Baker, PE

March 2017

Ferry Division



- 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
- Support Fleet (4 tugs, 3 Barges, 1 crane barge, & 2 dredges)

Note: the old dredge is in the process of being sold as surplus

Route Profiles 2017

Route	Crossing		Vessels	Toll
	(miles)	(mins.)		
Currituck	4.69	45	1	-
Pamlico River	3.38	30	1	-
Neuse River	1.92	20	3	-
Hatteras	8.68	60	9	-
Swan Quarter	26.43	150	2	Yes
Cedar Island	22.63	140	2	Yes
Southport	3.43	35	2	Yes

BENEFITS of the Ferry Division

- Time Savings



- Tourism



- Commerce



Benefits: Time Savings

Route	Time Via Land in Mins	Time Via Ferry in Mins	Mins Saved Per Vehicle Trip	Monitized Total Time Savings for Cars	Monitized Total Time Savings for Trucks	Total Monitized Savings for Utilizing the Ferry
Hatteras Inlet	366	59	307	\$ 15,445,386	\$ 1,158,403,984	\$ 1,173,849,371
Cherry Branch – Minnesott	62	21	41	\$ 1,738,019	\$ 1,135,960	\$ 2,873,980
Cedar Island – Ocracoke	393	168	225	\$ 2,502,167	\$ 1,279,881	\$ 3,782,048
Southport – Ft. Fisher	76	31	45	\$ 1,621,802	\$ 829,566	\$ 2,451,368
Bayview - Aurora	70	39	31	\$ 397,233	\$ 203,188	\$ 600,421
Swan Quarter – Ocracoke	234	158	76	\$ 472,976	\$ 209,414	\$ 682,390
Currituck – Knotts Island	53	47	6	\$ 23,696	\$ 24,598	\$ 48,293
Totals =				\$ 22,201,280	\$ 1,162,086,591	\$ 1,184,287,871

Note:

These traffic values are the per year totals based on an average from FY11 thru FY15

\$ 12.75 Per hour travel time value for CARS as provided by SPOT Office

\$ 75.00 Per hour travel time value for TRUCKS as provided by SPOT Office

Benefits: Tourism

Route	Tourism Expenditures Supported
Hatteras Inlet	\$ 168,720,000
Cherry Branch – Minnesott	\$ 35,838,000
Cedar Island – Ocracoke	\$ 17,428,000
Southport – Ft. Fisher	\$ 71,913,000
Bayview - Aurora	\$ 15,128,000
Swan Quarter – Ocracoke	\$ 6,584,000
Currituck – Knotts Island	\$ 9,447,000
Totals =	\$ 325,058,000

--This data was taken from the 2009 ITRE Study.

Note: It is based on a survey taken as a part of this study that indicated visitors spent \$562 per trip on food, lodging, recreation, etc. (per vehicle)

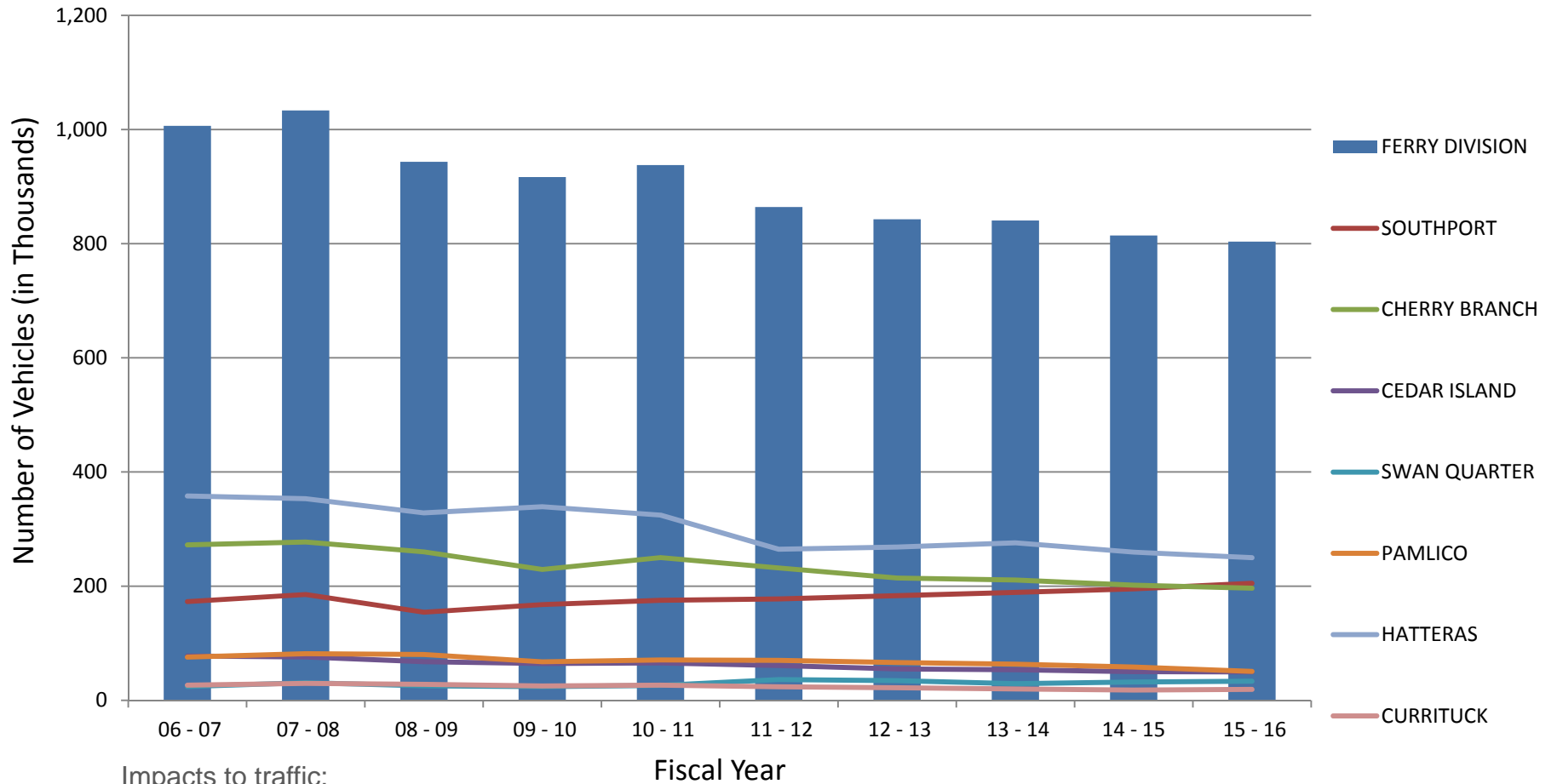
Benefits: Commerce

Route	Annual Work Trips Supported
Hatteras Inlet	17,660
Cherry Branch – Minnesott	130,310
Cedar Island – Ocracoke	2,710
Southport – Ft. Fisher	37,090
Bayview - Aurora	42,420
Swan Quarter – Ocracoke	720
Currituck – Knotts Island	5,310
Totals =	236,220

--This data was taken from the 2009 ITRE Study

Note: A work trip is a trip across (one way) and respective route in which the occupants are going to work, making deliveries, on official work related business, or otherwise on a business or work trip.

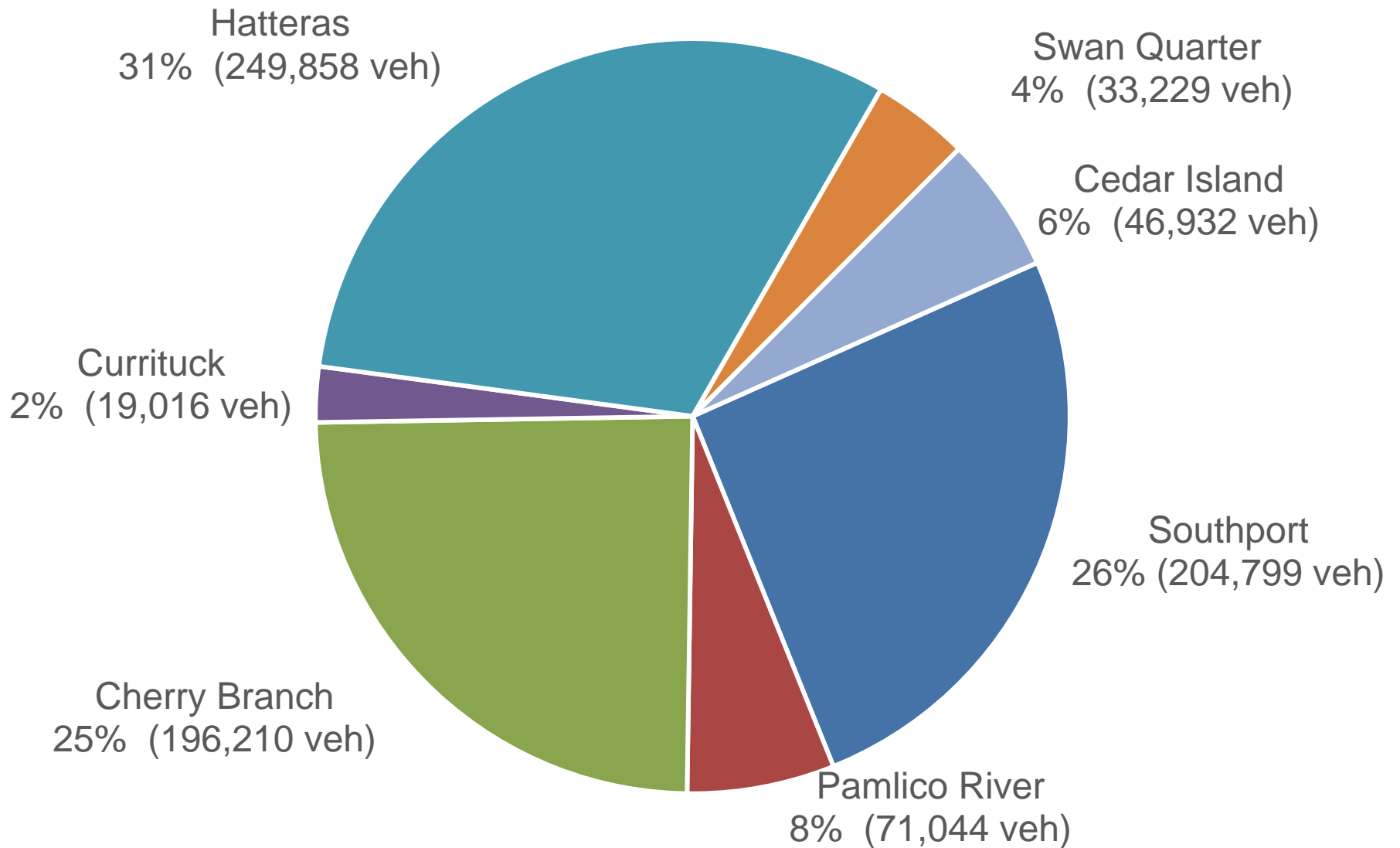
Route Comparison for Vehicles Carried



Impacts to traffic:

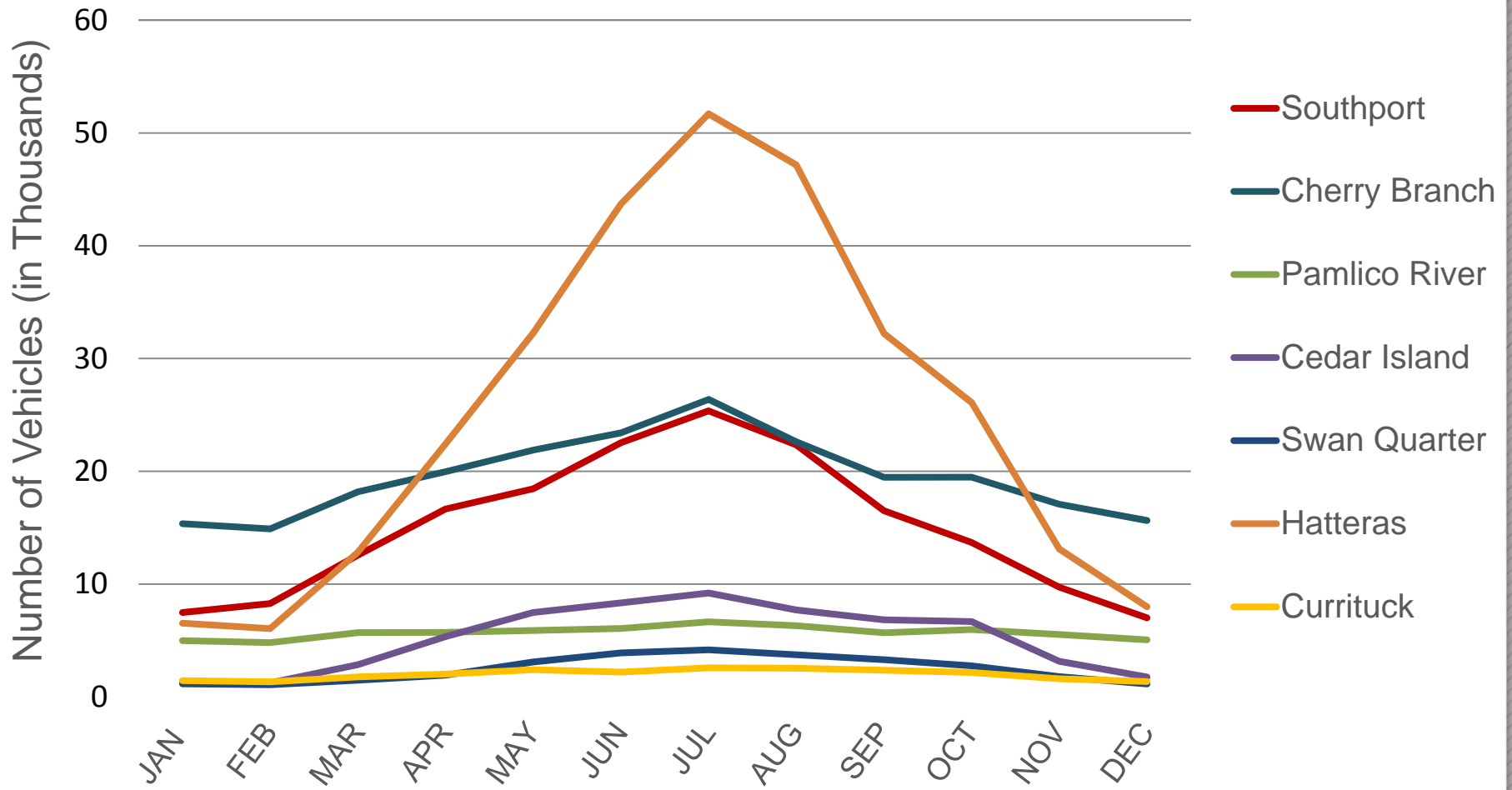
- FY 11/12 – Hurricane Irene
- FY 12/13 – Hurricane Sandy
- FY 13/14 – Bonner Bridge Scouring
- FY 14/15 – Hurricane Joaquin
- FY 15/16 – Hurricane Matthew

Route Comparison for FY 16

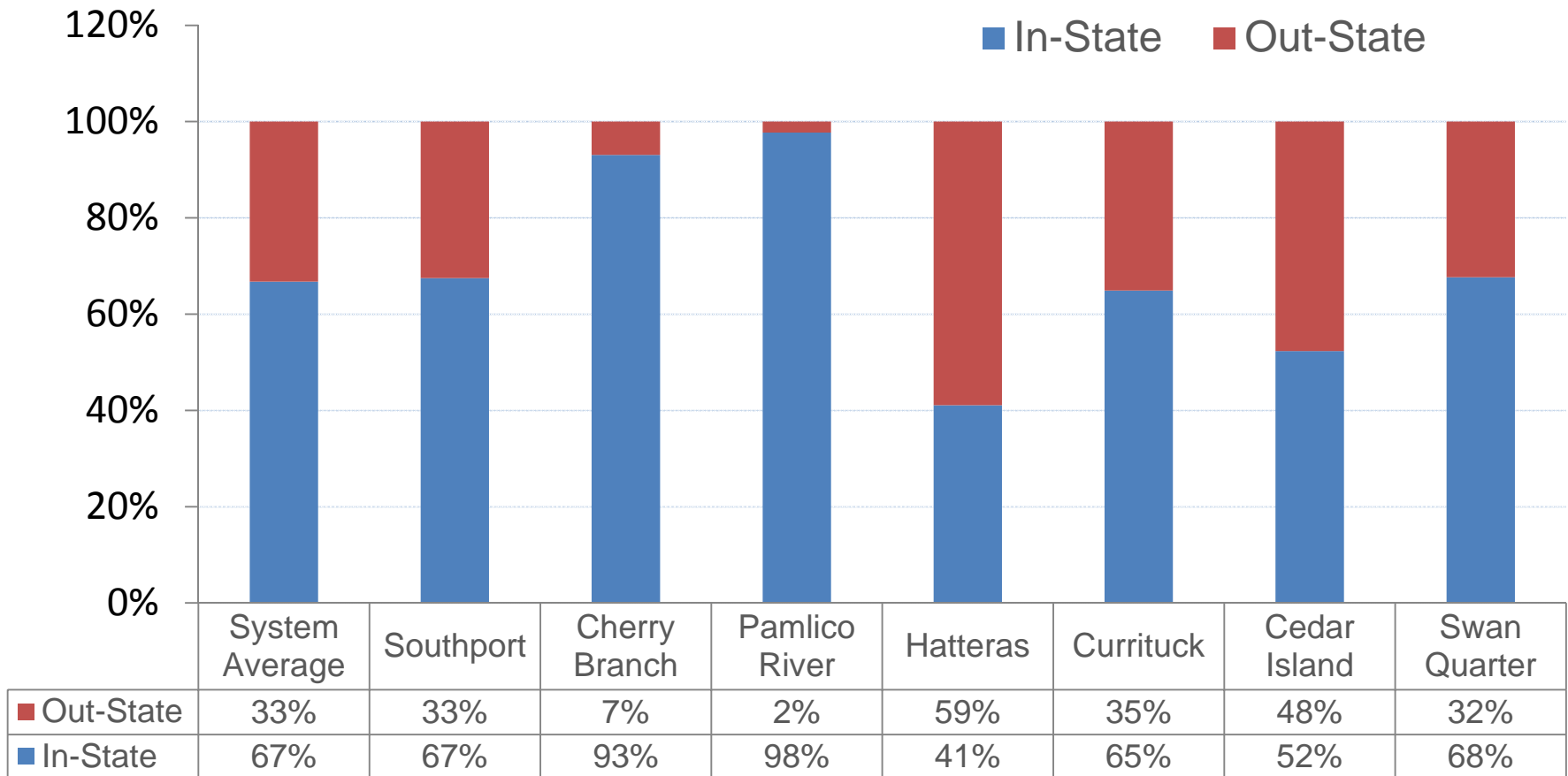


Seasonality: Avg. Total Vehicles Carried per Month

Based on 10 Year Average From FY06-16



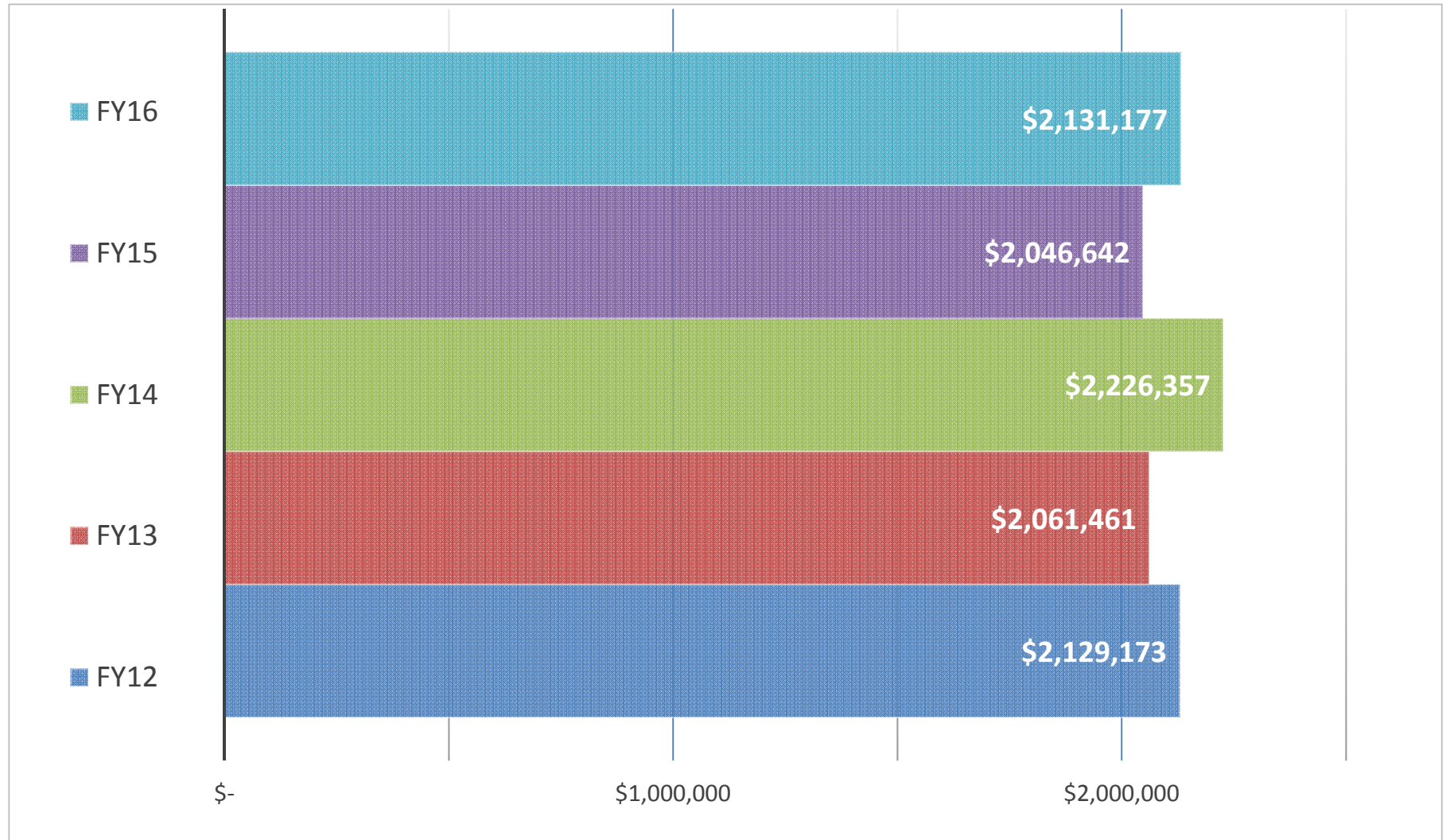
Nature of Operations In State/Out of State Comparison - CY 2016



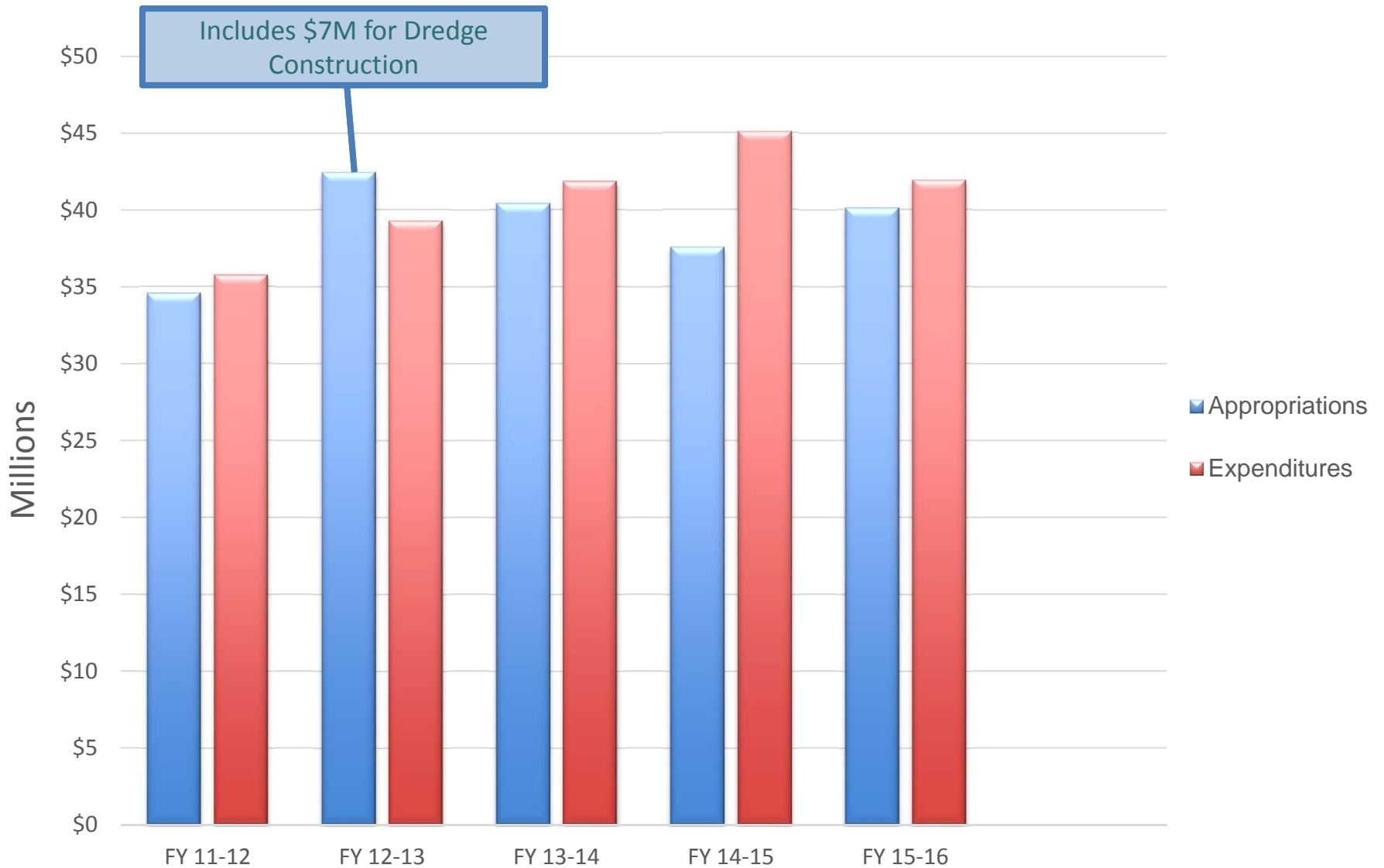
Tolling Rates

Fare Class	Southport	Swan Quarter	Cedar Island
Pedestrian	\$1	\$5	\$5
Bicycle	\$2	\$3	\$3
Motorcycle	\$3	\$10	\$10
Vehicles			
< 20 ft.	\$5	\$15	\$15
20 ft. to 40 ft.	\$10	\$30	\$30
> 40 ft.	\$15	\$45	\$45

Toll Revenue Trends for Last 5 Years



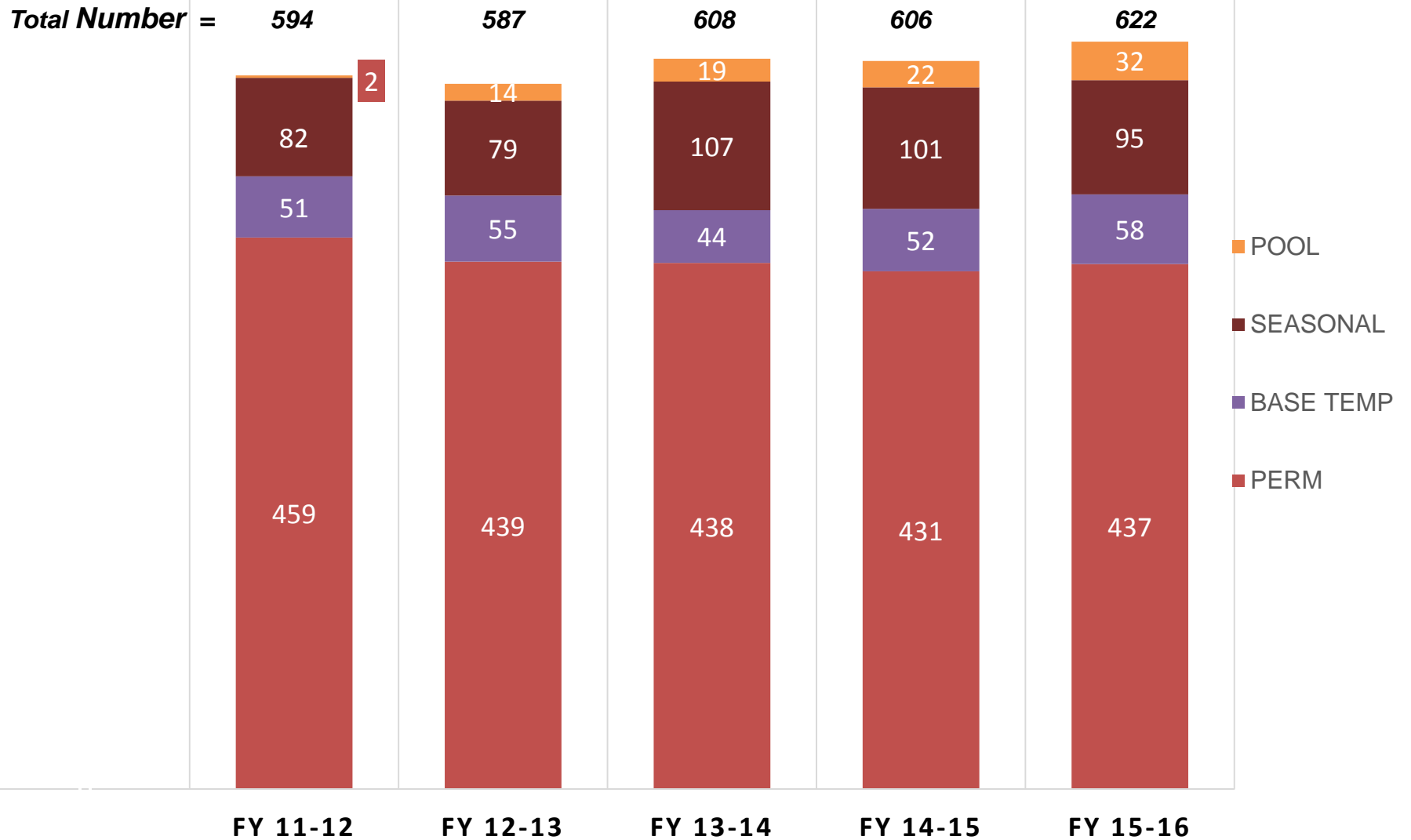
Appropriations vs Actual Expenditures



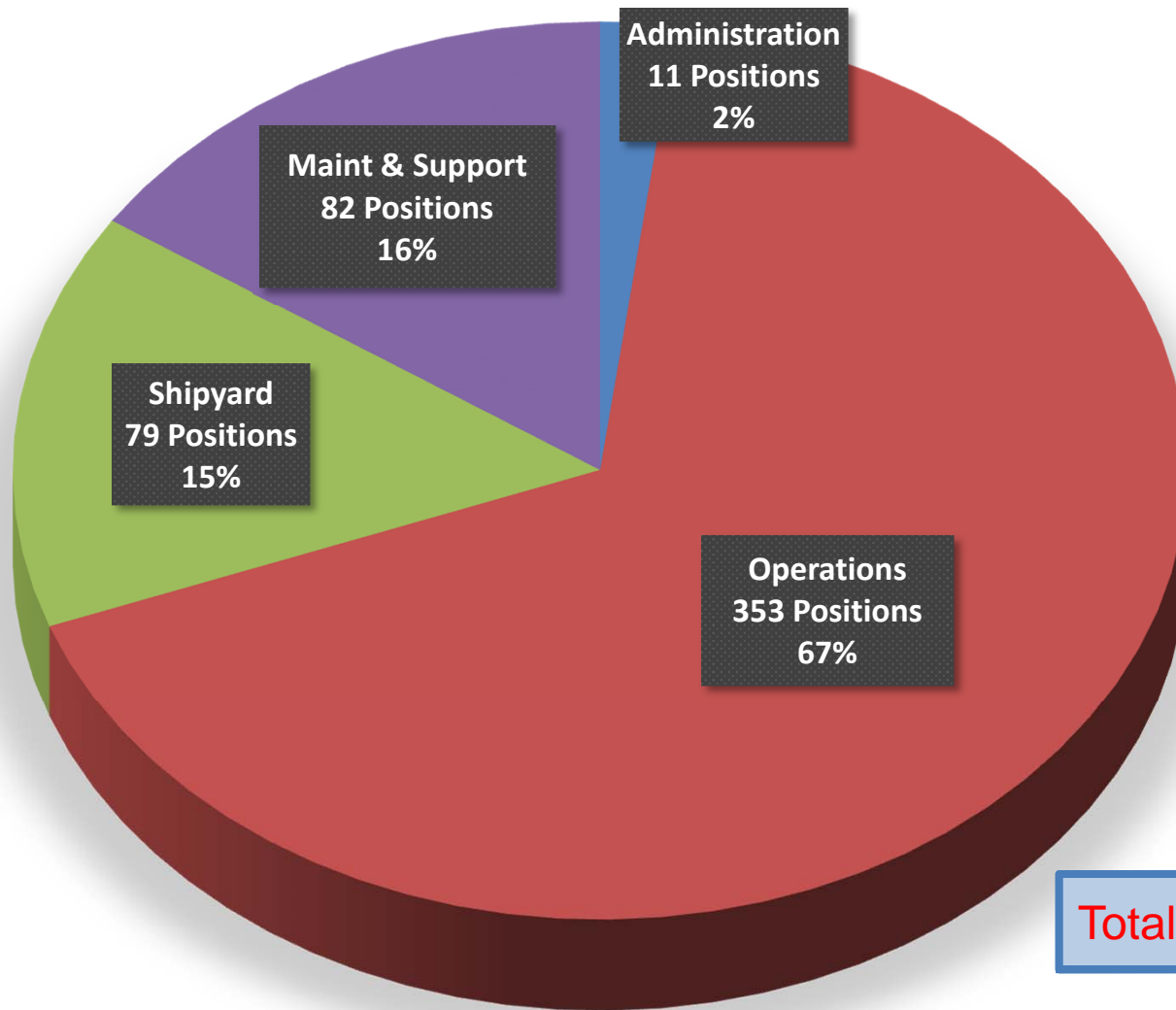
Staffing: Position Types

- Permanent Full Time Positions
- Base Temporary Positions
 - 11 month temporary employees to help meet normal operational needs
- Pool Employees
 - On-call non-permanent positions that work less than 320 hours per year. Use of pool employees prevents unscheduled overtime for permanent employees .
- Seasonal Temporary Positions
 - Temporary employees that are utilized to address seasonal peak demands

Staffing Summary - Headcount



Position Headcount By Work Classification

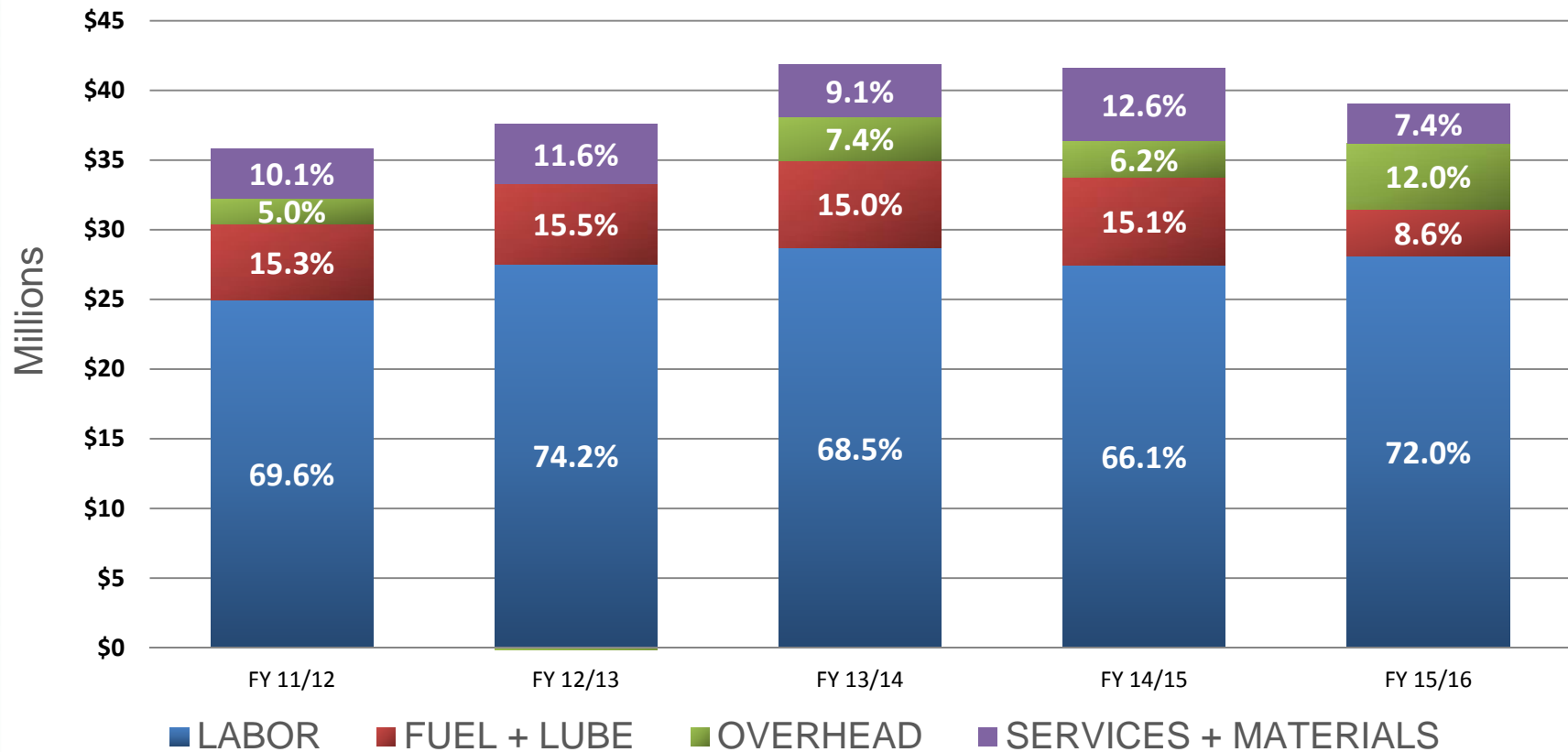


This chart represents the Permanent, Pool & Base Temporary Positions based on a snapshot taken Feb. 23, 2017

Total Positions = 525

O&M Expense - Five Year Trend

Expense by Major Category



Note: FY12-13 percentage totals 101.3% - this is due to a Highway Trust Fund transfer enacted as a result of Governor's moratorium that prevented the implementation of tolls as detailed in legislation. This also resulted in no overhead costs showing up in report due to coding related to referenced transfer.

Factors Driving Recent O&M Cost Increases

Fiscal Year	Description of Need for Increase	Annual Amount of Increase
2010	USCG Increased Vessel Crew Size Requirements (Required additional 44 crew members)	\$2.2M
2012	Legislative Mandate for Turnpike to handle toll reservations & collections	\$0.5M
2013	USCG Mandated 10 new Homeland Security positions	\$0.5M
2014	Hatteras: "Alternate Channel" becomes permanent route	\$2.0M
	Total =	\$5.2M

O&M Cost Containment Measures

- 2015 Schedule Adjustments
 - Sound Routes - projected annual savings (\$500K)
 - Pamlico River - projected annual savings (\$790K)
 - Continue to evaluate demand on a monthly basis to determine possible areas for additional efficiencies
- 2015 Change in Dry-dock Requirements for M/V Hunt
 - Estimated savings of \$2M over the expected life of the vessel
- Total of Combined Cost Containment Measures = \$ 3.29M

Supplemental Revenue Generating Activities

- Wanchese Fish Company
 - 2012, 30 day lease, \$38K
- Maintenance Services for Other Agencies:
 - Army Corps of Engineers – 4 dredges, \$85K
 - NC Cultural Resources – Elizabeth II, \$5K
 - NC Division of Marine Fisheries – Various Vessels, \$28K
- Stevens Towing
 - 2015, Dock Lease, \$38K
 - 2016, Dock Lease, \$25K

Supplemental Revenue – Other Opportunities

- On Board Wi-Fi:
 - Tried on a trial basis in 2015. The vendor could not supply adequate service on sound routes.
 - The Ferry Division has met with a new vendor to see if providing this service is possible with the technology this company utilizes.
- Increased Vending and Concession Items
 - Looking at expanding vending & concessions, but increased revenues expected to be minimal.
- Ferry Tolling Revenues:
 - Tolls are collected on 3 routes. By legislation the tolls collected are placed into an account for each respective route. The legislation then states that these funds must go to vessel replacements along these respective routes.

Operational Challenges

- **Shipyard Scheduling:** Number of required inspections has doubled in recent years due to Coast Guard regulations
- **Peak period capacity constraints:** especially at Hatteras due to running the long route and need to increase dredging frequency
- **Shallow water with shifting shoals:** Especially at Hatteras, but dredging is required across entire Ferry Division
- **Asset Maintenance:** With the age of the fleet and other assets (ramps & gantries, bulkheads, etc.) ever increasing, there is an huge gap in funding that will be needed to adequately address existing needs.
- **Emergency Route:** Compromises to NC 12 occasionally require that the emergency ferry route be activated. When activated this operation places drains across the Ferry Division in regards to the large amount of assets required to operate. In the last 10 years this route has been activated 3 times at a total cost of approximately \$4.2M

Operational Challenges - Shipyard Schedule

US Coast Guard requires ferries to be dry-docked twice every 5 years.

- Dry-dock requirements
 - Prior to 1998: 11 of 21 ferries
 - Current: 21 of 21 ferries
- Shipyard workforce
 - Prior to 1998 = 100
 - Current = 79
- Increase in man-hours per dry-dock
 - Approximately 8.5K to 12.5K



Operating Challenges / Shoaling Hatteras - Ocracoke

- **Hatteras Ferry Channel – 4.3 miles**
 - Critical sections are federally maintained
 - Constant dredging
 - 52 departures per day (peak)

- **Alternate Route – 8.6 miles**
 - Natural deep water channel
 - Approx. increase of \$175K per month in labor/fuel
 - 42 departures per day (peak)

- **Groundings By NCDOT along the Hatteras Route**
 - FY2016 = 23
 - Note: Bump & Go's are no longer reported as per Coast Guard rule changes

Army Corps of Engineers Funding for Hatteras Ferry Channel Dredging

Fiscal Year	Regular Federal Appropriations	Supplemental Fed. Appropriations/ Hurricane Relief	Non Federal Contributions
2009	\$210,000	\$191,000	\$0
2010	\$50,000	\$142,000	\$0
2011	\$50,000	\$0	\$0
2012	\$49,000	\$2,000,000	\$1,433,000
2013	\$49,000	\$2,000,000	\$0
2014	\$697,000	\$0	\$0
2015	\$550,000	\$0	\$0
2016	\$1,297,000	\$0	\$0

Recent Legislative Funding Items

Fiscal Year	Description of Funding	Amount
2017	General Assembly Initiated new funding (recurring) for vessel replacement	\$4M
2017	General Assembly funded (non-recurring) funds for initiating new passenger ferry service from Hatteras to Ocracoke Village (not to exceed \$3.65M). Reminder of funds for terminal infrastructure improvements (platen expansion at shipyard and ramp & gantry replacements division wide)	\$6M
	Total =	\$10M

Operational Challenges: Asset Maintenance

- Ferry vessel replacement funded through:
 - Ferry tolls dedicated to route via capital reserve accounts
 - Division funds through STI
 - Division generated receipts
- MAP 21 - FHWA formula based program
 - NC Ferry estimated allocation approximately \$1.45M
- Current sources do not meet projected needs for fleet replacement and capital improvements
- Funding Shortfall Between Funding and Needs is approximately \$2M per year for capital project needs and approximately \$3.8M per year for operation and maintenance projects (example: vessel rehabilitations, ramp & gantry rehabilitation, etc.)

Fleet Condition

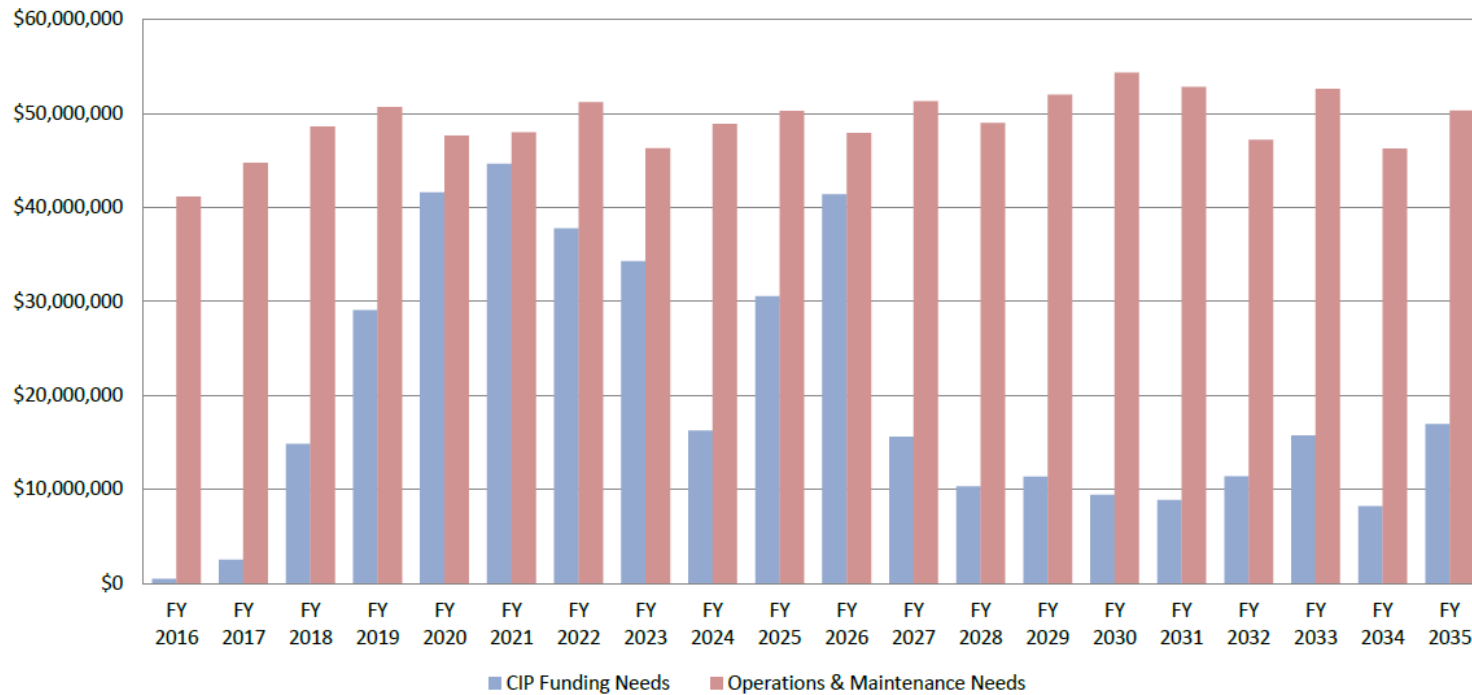
Age (years)	Hatteras Class	Sound Class	River Class	Condition
0 to 5	0	2	1	Good
6-15	0	0	5	Good
16-25	7	2	2	Average
25+	0	1	1	Critical

- Replacement Cost (FY16):
 - Sound Class Vessel New Construction approx. \$18M
 - River Class Vessel New Construction approx. \$13M*

* Note: This value is being updated and verified at this time as a part of project F-5700 (Replacement of the M/V Baum)

Capital Improvement Plan Summary

20 Year Total Funding Needs For Ferry Division
(excluding Toll Revenue Adjustments)



The Ferry Division 20 Year CIP & O&M Plan is being updated at this time to reflect Legislative impacts from the previous session. The new plan will be completed in early April 2017.

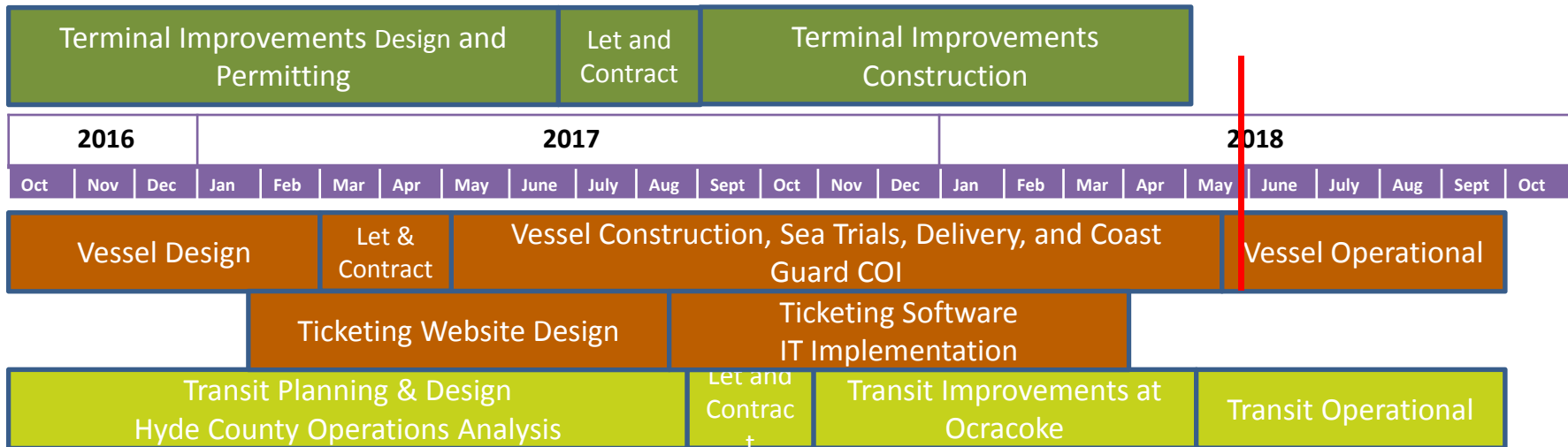
Passenger Ferry Feasibility Study



Reasons for Initiating Study:

- Ferry route to Ocracoke changed due to shoaling
- Longer route caused reduction in number of crossings
- Longer wait times at terminals
- Unmet travel demand (vehicles leaving queue)
- Increase in labor, fuel and maintenance costs

Passenger Ferry Project Timeline



Project Goal is to have this service operational by Spring 2018.

Questions?

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