

Delaware River and Bay Authority



Five Year (2018-2022) Strategic Plan and 2018 Capital Improvement Program

December 2017

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Introduction

The Delaware River and Bay Authority (DRBA) is an agency created by a Congressionally sanctioned interstate compact between the States of New Jersey and Delaware and enacted pursuant to 53 Laws of Delaware, Chapter 145 (17 Del. C.S. 1701) and P.L. 1961, C.66 (C.32:11E-1 et. seq. of the Pamphlet Laws of New Jersey). The Mission of the DRBA is to provide safe, efficient and modern terminals, crossings, vessels and related transportation while participating in controlled economic development opportunities supported by a technically proficient and professionally motivated workforce dedicated to providing high quality customer service.

The DRBA has an extensive network of structures and facilities designed to provide the public with safe and efficient means of transportation as well as providing economic development and opportunities in the region. This transportation network includes the Delaware Memorial Bridge (DMB), the Cape May-Lewes Ferry (CMLF), and the Forts Ferry (FF). The Authority also operates and maintains through the auspices of long-term leases with a municipality, county or the state, five (5) Airport facilities in Delaware and New Jersey. These facilities include New Castle Airport, Delaware Airpark and Civil Air Terminal in Delaware and Millville and Cape May Airports in New Jersey.

The DRBA has developed five goals in support of its mission against which Capital projects are evaluated. These goals include:

- Asset Preservation – The responsible stewardship of critical regional infrastructure through the preservation of the asset. Preservation of the asset is necessary to retain its existing value and maximize its useful life.
- Efficient and Sustainable - Increase operating efficiencies through the construction of sustainable infrastructure utilizing best available technologies and management practices.
- Safety - Maintain or enhance safe and reliable infrastructure for our customers.
- Security - Enhance the security of critical regional infrastructure in coordination with regional security agencies.
- Economic Development - Support revenue producing growth through controlled investment in economic development opportunities.

Capital improvement projects generally occur in phases over multiple years. This Strategic Plan serves as a planning tool for directing resources to address the goals over the next five years to consistently maintain and enhance the Authority's facilities and address the increasing demands associated with an aging infrastructure. Implementation of this Strategic Plan will assure the public continues to enjoy quality transportation services in a safe and efficient manner as well as intelligently maintain and enhance facilities as necessary.

Included in the following pages are the identified multi-year capital improvement projects organized by asset class (DMB, CMLF, FF and each of the five Airports). Within each asset class, individual projects are further organized into the following classifications:

- Continuing Projects – Projects which were previously authorized in the Capital Improvement Program, which are scheduled to continue in 2018.
- Annual – Projects which require yearly authorization to continue.
- New Projects – Projects which have not been authorized in a prior Capital Improvement Program and are seeking authorization in 2018.
- Out Year Projects – Projects which will be seeking authorization in a future Capital Improvement program.

Airport projects which are contributed to by the Federal Aviation Administration are subject to grant approval and funding allocation.

This information, provided in tabular format, identifies the financial resources for each project. Descriptions for each project follow the tables and are keyed to the table by the project's rank number (projects are ranked in order of priority by the Authority, with a total of 142 projects). The Capital Improvement Program budget for 2018 is shown as the highlighted column within the table.

2018 Capital Improvement Program - \$57,466,000 Authority and External Funds

Capital Asset	2018		
	DRBA	External	Total
CONTINUING PROJECTS			
Delaware Memorial Bridge	\$ 20,651,000	\$ 2,000,000	\$ 22,651,000
Cape May-Lewes Ferry	\$ 1,823,000	\$ -	\$ 1,823,000
Forts Ferry	-	-	-
New Castle Airport	\$ 1,883,000	\$ 6,152,000	\$ 8,035,000
Millville Airport	\$ 1,040,000	\$ 4,442,000	\$ 5,482,000
Cape May Airport	\$ 508,000	\$ 2,706,000	\$ 3,214,000
Delaware Air Park	\$ 360,000	\$ 3,240,000	\$ 3,600,000
Civil Air Terminal	-	-	-
Subtotal	<u>\$ 26,265,000</u>	<u>\$ 18,540,000</u>	<u>\$ 44,805,000</u>
ANNUAL PROJECTS			
Delaware Memorial Bridge	\$ 2,354,000	\$ -	\$ 2,354,000
Cape May-Lewes Ferry	\$ 7,754,000	\$ -	\$ 7,754,000
Forts Ferry	\$ 10,000	\$ -	\$ 10,000
New Castle Airport	\$ 672,000	\$ -	\$ 672,000
Millville Airport	\$ 234,000	\$ 250,000	\$ 484,000
Cape May Airport	\$ 727,000	\$ -	\$ 727,000
Delaware Air Park	\$ 90,000	\$ 45,000	\$ 135,000
Civil Air Terminal	\$ 20,000	\$ -	\$ 20,000
Subtotal	<u>\$ 11,861,000</u>	<u>\$ 295,000</u>	<u>\$ 12,156,000</u>
NEW PROJECTS			
Delaware Memorial Bridge	\$ 500,000	-	\$ 500,000
Cape May-Lewes Ferry	\$ -	-	\$ -
Forts Ferry	-	-	\$ -
New Castle Airport	\$ -	-	\$ -
Millville Airport	\$ 5,000	-	\$ 5,000
Cape May Airport	\$ -	-	\$ -
Delaware Air Park	\$ (280,000)	\$ 280,000	\$ -
Civil Air Terminal	-	-	\$ -
Subtotal	<u>\$ 225,000</u>	<u>\$ 280,000</u>	<u>\$ 505,000</u>
Grand Total All Projects	<u>\$ 38,351,000</u>	<u>\$ 19,115,000</u>	<u>\$ 57,466,000</u>

Authority-Wide Five Year (2018-2022) Strategic CIP Summary Authority Funds Only

Capital Asset	2018	2019-2022	5 Year Totals
<u>CONTINUING PROJECTS</u>			
Delaware Memorial Bridge	\$ 20,651,000	\$ 73,739,000	\$ 94,390,000
Cape May-Lewes Ferry	\$ 1,823,000	\$ 29,830,000	\$ 31,653,000
Forts Ferry	\$ -	\$ -	\$ -
New Castle Airport	\$ 1,883,000	\$ 3,288,000	\$ 5,171,000
Millville Airport	\$ 1,040,000	\$ 652,000	\$ 1,692,000
Cape May Airport	\$ 508,000	\$ 5,655,000	\$ 6,163,000
Delaware Air Park	\$ 360,000	\$ 1,665,000	\$ 2,025,000
Civil Air Terminal	\$ -	\$ -	\$ -
Subtotal	<u>\$ 26,265,000</u>	<u>\$ 114,829,000</u>	<u>\$ 141,094,000</u>
<u>ANNUAL PROJECTS</u>			
Delaware Memorial Bridge	\$ 2,354,000	\$ 153,443,000	\$ 155,797,000
Cape May-Lewes Ferry	\$ 7,754,000	\$ 37,217,000	\$ 44,971,000
Forts Ferry	\$ 10,000	\$ 90,000	\$ 100,000
New Castle Airport	\$ 672,000	\$ 3,628,000	\$ 4,300,000
Millville Airport	\$ 234,000	\$ 1,365,000	\$ 1,599,000
Cape May Airport	\$ 727,000	\$ 1,132,000	\$ 1,859,000
Delaware Air Park	\$ 90,000	\$ 454,000	\$ 544,000
Civil Air Terminal	\$ 20,000	\$ 171,000	\$ 191,000
Subtotal	<u>\$ 11,861,000</u>	<u>\$ 197,500,000</u>	<u>\$ 209,361,000</u>
<u>NEW PROJECTS</u>			
Delaware Memorial Bridge	\$ 500,000	\$ 2,450,000	\$ 2,950,000
Cape May-Lewes Ferry	\$ -	\$ 850,000	\$ 850,000
Forts Ferry	\$ -	\$ -	\$ -
New Castle Airport	\$ -	\$ 6,090,000	\$ 6,090,000
Millville Airport	\$ 5,000	\$ 2,230,000	\$ 2,235,000
Cape May Airport	\$ -	\$ -	\$ -
Delaware Air Park	\$ (280,000)	\$ -	\$ (280,000)
Civil Air Terminal	\$ -	\$ -	\$ -
Subtotal	<u>\$ 225,000</u>	<u>\$ 11,620,000</u>	<u>\$ 11,845,000</u>
<u>OUT-YEAR PROJECTS</u>			
Delaware Memorial Bridge	\$ -	\$ 141,300,000	\$ 141,300,000
Cape May-Lewes Ferry	\$ -	\$ 70,115,000	\$ 70,115,000
Forts Ferry	\$ -	\$ -	\$ -
New Castle Airport	\$ -	\$ 515,000	\$ 515,000
Millville Airport	\$ -	\$ 1,745,000	\$ 1,745,000
Cape May Airport	\$ -	\$ 620,000	\$ 620,000
Delaware Air Park	\$ -	\$ 20,000	\$ 20,000
Civil Air Terminal	\$ -	\$ -	\$ -
Subtotal	<u>\$ -</u>	<u>\$ 214,315,000</u>	<u>\$ 214,315,000</u>
Grand Total All Projects	<u>\$ 38,351,000</u>	<u>\$ 538,264,000</u>	<u>\$ 576,615,000</u>

Delaware Memorial Bridge - Continuing Projects

Crossings Strategic Capital Improvement Plan

Ranking	Project	2017 \$ Spent (EST.)	2018	External Funding 2018	2019	External Funding 2019	2020	External Funding 2020	2021	External Funding 2021	2022	External Funding 2022
Continuing Projects												
2	Cable Preservation (Both Structures)	\$ 16,000,000	\$ 1,350,000	\$ -	\$ 300,000	\$ -	\$ 300,000	\$ -	\$ 300,000	\$ -	\$ 300,000	\$ -
3	Electronic Toll Collection Equipment Upgrades	\$ 4,600,000	\$ 1,200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4	I 295 Southbound Reconstruction	\$ 13,000,000	\$ 10,000,000	\$ 2,000,000	\$ (2,000,000)	\$ 2,000,000	\$ (3,000,000)	\$ 3,000,000	\$ -	\$ -	\$ -	\$ -
6	Anchorage Repairs	\$ 800,000	\$ 1,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
14	Bridge Tower Elevator Retrofit	\$ 330,000	\$ 1,950,000	\$ -	\$ 200,000	\$ -	\$ 200,000	\$ -	\$ 200,000	\$ -	\$ 200,000	\$ -
15	Suspender Rope Replacements	\$ 3,000,000	\$ 800,000	\$ -	\$ 6,000,000	\$ -	\$ 3,000,000	\$ -	\$ 3,000,000	\$ -	\$ 3,000,000	\$ -
18	Replace Chillers in West Toll Building	\$ 50,000	\$ 300,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
26	Pin & Link Rehabilitation	\$ 130,000	\$ 3,300,000	\$ -	\$ 11,700,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
41	Roof and Building Envelope Rehabilitation (DMB)	\$ 350,000	\$ 401,000	\$ -	\$ 364,000	\$ -	\$ 75,000	\$ -	\$ -	\$ -	\$ -	\$ -
45	HR/Finance Department Renovations		\$ 350,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
50	Ship Collision Protection	\$ -	\$ -	\$ -	\$ 22,000,000	\$ -	\$ 20,000,000	\$ -	\$ -	\$ -	\$ -	\$ -
57	Norfolk RR Backwall Replacement	\$ 120,000	\$ -	\$ -	\$ 2,500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
71	Eight Bay Maintenance Garage	\$ 110,000	\$ -	\$ -	\$ 1,500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
74	Bridge Monitoring System	\$ -	\$ -	\$ -	\$ 3,300,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
109	Administration Building Second Floor Renovations	\$ -	\$ -	\$ -	\$ 300,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Grand Total	\$ 38,490,000	\$ 20,651,000	\$ 2,000,000	\$ 46,164,000	\$ 2,000,000	\$ 20,575,000	\$ 3,000,000	\$ 3,500,000	\$ -	\$ 3,500,000	\$ -

2 **Cable Preservation (Both Structures) - Asset Preservation**

As a result of the cable investigation it was determined that preventive measures are necessary to maintain the service life and capacity of the Delaware Memorial Bridge structures. This project will design and construct a dehumidification system to preserve the main suspension cables. This project has an estimated DRBA cost of \$1.35 million in 2018 and \$1.2 million in the out years.

3 **Electronic Toll Collection Equipment Upgrades - Efficient and Sustainable**

The existing electronic toll collection (ETC) system is over ten years old and by industry standards is nearing the end of its useful life. The project includes replacement of system hardware and software with a new advanced ETC system that will safeguard against having unplanned interruptions and provide for more reliable toll collection. This project has an estimated DRBA cost of \$1.2 million in 2018.

4 **I 295 Southbound Reconstruction - Safety**

This is the final phase of safety improvements along I-295 in New Jersey and Delaware which began in 1999. The southbound I-295/US13 interchange experiences traffic congestion where four through lanes decrease to two lanes and the condition is further complicated by weaving patterns. This project includes removal of five (5) existing bridges, replacement of one (1) existing bridge, and elimination of the weaving patterns for increased traffic capacity and safety. This project has an estimated DRBA cost of \$10 million in 2018 and \$-5,000,000 in the out years. The project is partially funded in the amount of approximately \$7.0 million by the Delaware Department of Transportation.

6 **Anchorage Repairs - Asset Preservation**

The concrete anchorages at the ends of the suspended spans are showing signs of cracking. This project includes injection sealing of the cracks and the application of a coating system on the exterior of the anchorages. This project has an estimated DRBA cost of \$1 million in 2018.

Delaware Memorial Bridge - Continuing Projects

- 14 **Bridge Tower Elevator Retrofit - Safety**
The elevators on the towers of the twin spans have provided unreliable service and are in need of repairs and retrofit. This project will engage a specialist contractor to perform needed repairs to restore the functionality and performance of the elevators and improve their ability to withstand the weather conditions they experience. This project has an estimated DRBA cost of \$1.95 million in 2018 and \$800,000 in the out years.
- 15 **Suspender Rope Replacements - Asset Preservation**
Several suspender ropes and their connection brackets were found to show corrosion in the last annual inspection. Through this project, the corroded suspender ropes and brackets will be removed and replaced with new ropes and brackets. This project has an estimated DRBA cost of \$800,000 in 2018 and \$15 million in the out years.
- 18 **Replace Chillers in West Toll Building - Efficient and Sustainable**
Several existing HVAC chiller units are at the end of their service life and operate on obsolete R-22 refrigerant; which is being phased out by the EPA. This project will begin the process of replacement with high efficiency units that operate on modern, environmentally-friendly refrigerant. This project has an estimated DRBA cost of \$300,000 in 2018.
- 26 **Pin & Link Rehabilitation - Asset Preservation**
The pin and link assemblies that connect the suspended span trusses to the towers are showing signs of severe deterioration. This project aims to replace the pin and links with new state of the art sliding bearings on brackets. This project has an estimated DRBA cost of \$3.3 million in 2018 and \$11.7 million in the out years.
- 41 **Roof and Building Envelope Rehabilitation (DMB) - Asset Preservation**
The facilities' roofing systems and building envelopes are aging and in need of repair. This project aims to identify, prioritize, and repair the facilities' roofing systems and develops a system for cataloging future repair needs. This project has an estimated DRBA cost of \$401,000 in 2018 and \$439,000 in the out years.
- 45 **HR/Finance Department Renovations - Efficient and Sustainable**
The current layout of office space for the Human Resources Department does not meet operational demands and is in need of updated renovations. Through this project the office space will be laid out in a new efficient manner. This project has an estimated DRBA cost of \$350,000 in 2018.
- 50 **Ship Collision Protection - Safety**
This is a project to develop and implement a ship collision protection system for the Delaware Memorial Bridge. The project will include risk assessment, investigation of modern ship collision protection systems, environmental impacts, design details and construction of the system. This project has an estimated DRBA cost of \$42 million in the out years.
- 57 **Norfolk RR Backwall Replacement - Asset Preservation**
The backwall of west abutment of the bridge over the Norfolk Southern Railroad has developed a large longitudinal crack that extends through the length of the backwall. The project aims to replace this backwall and the expansion joint above with a jointless backwall that will be designed to perform better and eliminate leakages from the joint. This project has an estimated DRBA cost of \$2.5 million in the out years.

Delaware Memorial Bridge - Continuing Projects

71 **Eight Bay Maintenance Garage - Efficient and Sustainable**

There is a need for an additional maintenance garage, which will serve to lengthen equipment service life and increase operating efficiencies in the maintenance complex. This project includes the modification of a previously designed maintenance garage and its construction. This project has an estimated DRBA cost of \$1.5 million in the out years.

74 **Bridge Monitoring System - Asset Preservation**

The concrete deck, the steel supporting the deck, the main cables, as well as the suspender ropes on the Delaware Memorial Bridges are showing signs of aging and deterioration. A Bridge Monitoring System has the capability to monitor the health of these structural bridge elements and provide early warnings of excessive displacements and vibrations on these elements, thereby facilitating appropriate prioritization of corrective measures. This project has an estimated DRBA cost of \$3.3 million in the out years.

109 **Administration Building Second Floor Renovations - Efficient and Sustainable**

Extensive renovations have been performed throughout the east wing of the Delaware Memorial Bridge Administrative Building with exception of the upper foyer. Renovations to this area include flooring the open space with frosted glass and changing stair rails to glass partitions for an updated appearance. This project has an estimated DRBA cost of \$300,000 in the out years.

Delaware Memorial Bridge - Annual Projects

Crossings Strategic Capital Improvement Plan

Ranking	Project	External Funding			External Funding			External Funding			External Funding		
		2018	2018	2019	2019	2020	2020	2021	2021	2022	2022	2022	
	Annual Projects												
1A	Annual Automation/Telecom Upgrades (DMB)	\$ 585,000	\$ -	\$ 2,175,000	\$ -	\$ 765,000	\$ -	\$ 550,000	\$ -	\$ 1,380,000	\$ -	\$ -	
20	Annual Bridge Deck and Pavement Repairs	\$ 500,000	\$ -	\$ 1,500,000	\$ -	\$ 1,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
24	Annual Bridge Steelwork Repairs	\$ 200,000	\$ -	\$ 10,100,000	\$ -	\$ 5,000,000	\$ -	\$ 5,000,000	\$ -	\$ 5,000,000	\$ -	\$ -	
25	Annual Minor Capital Maintenance (DMB)	\$ 195,000	\$ -	\$ 1,820,000	\$ -	\$ 500,000	\$ -	\$ 350,000	\$ -	\$ 100,000	\$ -	\$ -	
34	Annual Minor Capital Equipment (DMB)	\$ 874,000	\$ -	\$ 1,401,000	\$ -	\$ 652,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
53	Annual Maintenance Bridge Span Painting	\$ -	\$ -	\$ 5,690,000	\$ -	\$ 37,140,000	\$ -	\$ 37,140,000	\$ -	\$ 36,180,000	\$ -	\$ -	
	Grand Total	\$ 2,354,000	\$ -	\$ 22,686,000	\$ -	\$ 45,057,000	\$ -	\$ 43,040,000	\$ -	\$ 42,660,000	\$ -	\$ -	

1A **Annual Automation/Telecom Upgrades (DMB) - Efficient and Sustainable**

Automation upgrades and equipment enhancements are needed to maintain sustainable and efficient facilities. This yearly project includes but is not limited to: automation master planning, computer hardware replacement purchases, local and wide area network upgrades, software and hardware upgrades, file back-up system maintenance and upgrades, video teleconference system upgrades, document management storage systems, server replacements, business continuity hardware/software, network replacement/upgrades, storage area network upgrades, and various hardware/software installations or upgrades as necessary. This project has an estimated DRBA cost of \$585,000 in 2018 and \$4.87 million in the out years.

20 **Annual Bridge Deck and Pavement Repairs - Asset Preservation**

Both structures exhibit minor deck cracking and delamination as well as potholes in hot mix pavement due to age and heavy truck volumes. This project includes concrete repairs to the bridge deck by patching or joint replacement, and hot mix patching and overlay as needed to maintain an appropriate level of service. This project has an estimated DRBA cost of \$500,000 in 2018 and \$2.5 million in the out years.

24 **Annual Bridge Steelwork Repairs - Asset Preservation**

This project programs miscellaneous steelwork repairs found to be necessary as a result of comprehensive annual inspections. These repairs are necessary to preserve the bridge's steelwork while maintaining safety and operational service levels. Work typically includes replacement of worn bearing assemblies, access platforms, maintenance of steel connections, installing new safety features, and other items. This project has an estimated DRBA cost of \$200,000 in 2018 and \$25.1 million in the out years.

25 **Annual Minor Capital Maintenance (DMB) - Asset Preservation**

This project programs annual work activities necessary to accommodate changing regulations and to preserve existing infrastructure. Minor capital maintenance may include, but not be limited to: interior renovations, building upgrades, electrical/lighting improvements, installation of oil/water separators, fencing, guiderail replacement, signage replacement, HVAC upgrades, chiller upgrades, emergency generator improvements, miscellaneous office space improvements, miscellaneous toll booth improvements, as well as utility and general infrastructure improvements. This project has an estimated DRBA cost of \$195,000 in 2018 and \$2.77 million in the out years.

Delaware Memorial Bridge - Annual Projects

34 **Annual Minor Capital Equipment (DMB) - Efficient and Sustainable**

This project programs annual capital equipment purchases which may include but are not limited to: vehicles, trucks, specialty equipment, emergency generators, trailers, and other equipment that are utilized to preserve the existing infrastructure assets. Purchases are based on established replacement guidelines considering useful life and condition. This project has an estimated DRBA cost of \$874,000 in 2018 and \$2.053 million in the out years.

53 **Annual Maintenance Bridge Span Painting - Asset Preservation**

As outlined in the annual inspection report, to help protect structural steel, a portion of the bridge is scheduled for spot repair to the paint and then given a full overcoat. One approach span will have deficient areas cleaned to bare metal, coated with paint, and the entire span repainted to protect it for another ten years. This project has an estimated DRBA cost of \$116.15 million in the out years.

Delaware Memorial Bridge - New Projects

Crossings Strategic Capital Improvement Plan

Ranking	Project	2018	External Funding 2018	2019	External Funding 2019	2020	External Funding 2020	2021	External Funding 2021	2022	External Funding 2022
New Projects											
23	Catwalk Repairs	\$ 250,000	\$ -	\$ 750,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
44	Accelerated Bridge Construction Deck Replacement Workshop	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
69	DMB Deck Evaluation (Both Structures)	\$ -	\$ -	\$ 500,000	\$ -	\$ -	\$ -	\$ 500,000	\$ -	\$ -	\$ -
102	Replace Chillers in Administration Building	\$ -	\$ -	\$ 350,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
103	Tower LED Lighting Improvements	\$ -	\$ -	\$ 350,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Grand Total		\$ 500,000	\$ -	\$ 1,950,000	\$ -	\$ -	\$ -	\$ 500,000	\$ -	\$ -	\$ -

23 **Catwalk Repairs - Safety**

The steel framework of the catwalks on the Delaware Memorial Bridge are aging and showing signs of severe corrosion and section loss. This project aims to remove and replace deteriorated members of the catwalks and install new members. This project has an estimated DRBA cost of \$250,000 in 2018 and \$750,000 in the out years.

44 **Accelerated Bridge Construction Deck Replacement Workshop - Asset Preservation**

This workshop is a first step in evaluating deck replacement options on the Delaware Memorial Bridges. The workshop will attempt to bring together experts in this area, other agencies that have performed deck replacements on major bridges and consultants and contractors to evaluate options for deck replacement. This project has an estimated DRBA cost of \$250,000 in 2018.

69 **DMB Deck Evaluation (Both Structures) - Asset Preservation**

The roadways decks of the Delaware Memorial Bridge are approaching the end of their life cycle. This project will evaluate the conditions of both decks and determine the extent of the repairs that are needed. This project has an estimated DRBA cost of \$1 million in the out years.

102 **Replace Chillers in Administration Building - Efficient and Sustainable**

Several existing HVAC chiller units are at the end of their service life and operate on obsolete R-22 refrigerant; which is being phased out by the EPA. This project will begin the process of replacement with high efficiency units that operate on modern, environmentally-friendly refrigerant. This project has an estimated DRBA cost of \$350,000 in the out years.

103 **Tower LED Lighting Improvements - Efficient and Sustainable**

Lighting at the Bridge towers is approaching the end of its life cycle and is currently inadequate. This project proposes the installation of high efficient LED lighting fixtures around the towers to provide adequate lumination. This project has an estimated DRBA cost of \$350,000 in the out years.

Delaware Memorial Bridge - Out Year Projects

Crossings Strategic Capital Improvement Plan

Ranking	Project	2018	External Funding 2018	2019	External Funding 2019	2020	External Funding 2020	2021	External Funding 2021	2022	External Funding 2022
	Out Year Projects										
110	1st Structure Safety Walk & Curb Drainage Retrofit	\$ -	\$ -	\$ 150,000	\$ -	\$ 2,000,000	\$ -	\$ -	\$ -	\$ -	\$ -
111	Deck Replacement	\$ -	\$ -	\$ 5,000,000	\$ -	\$ 50,000,000	\$ -	\$ 50,000,000	\$ -	\$ 5,000,000	\$ -
112	Fall Prevention Fencing	\$ -	\$ -	\$ 2,000,000	\$ -	\$ 10,000,000	\$ -	\$ 10,000,000	\$ -	\$ -	\$ -
113	Route 9 Bridge Repairs	\$ -	\$ -	\$ 3,200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
134	Aesthetic Bridge Lighting	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,500,000	\$ -	\$ -	\$ -
142	Vietnam War Memorial	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 450,000	\$ -
	Grand Total	\$ -	\$ -	\$ 10,350,000	\$ -	\$ 62,000,000	\$ -	\$ 63,500,000	\$ -	\$ 5,450,000	\$ -

110 **1st Structure Safety Walk & Curb Drainage Retrofit - Safety**

This project includes changing the existing open grate sidewalk to a solid surface and reducing the existing curb openings to better control drainage from the deck surface and protect the steel superstructure from future corrosion. This project has an estimated DRBA cost of \$2.15 million in the out years.

111 **Deck Replacement - Asset Preservation**

This major project will involve removal of existing deck components including stringers that support the existing decks on the Delaware Memorial Bridge and replace these components with state of the art, possibly prefabricated deck-stringer components. This project will be executed in stages and is a multi-year, prolonged effort to remove existing, aging deck components and replace them with new, long lasting components. This project has an estimated DRBA cost of \$110 million in the out years.

112 **Fall Prevention Fencing - Safety**

This project aims to install anti-climb mesh fencing along both spans of the Delaware Memorial Bridges. This project has an estimated DRBA cost of \$22 million in the out years.

113 **Route 9 Bridge Repairs - Asset Preservation**

The Route 9 bridge slabs are showing signs of deterioration near the bridge joints. This project aims to remove and replace existing bridge joints with new joints and repair and rebuild deteriorated portions of the bridge slabs. This project has an estimated DRBA cost of \$3.2 million in the out years.

134 **Aesthetic Bridge Lighting - Efficient and Sustainable**

Unlike other bridges in the vicinity, the Delaware Memorial Bridges do not have a well-designed lighting scheme. This project aims to implement a well-designed lighting scheme for the main cables, suspenders and roadway on the DMBs. This project has an estimated DRBA cost of \$3.5 million in the out years.

142 **Vietnam War Memorial - Asset Preservation**

The memorial park hosts veterans events and Vietnam Veterans have expressed concerns because the memorial names WWII and Korean War fatalities, but not Vietnam fatalities. The addition of a Vietnam Veterans memorial will preserve the intent of the park, and requires communication with various veterans groups. This project has an estimated DRBA cost of \$450,000 in the out years.

Cape May Lewes Ferry - Continuing Projects

Crossings Strategic Capital Improvement Plan

Ranking	Project	2017 \$ Spent (EST.)	2018	External Funding		External Funding		External Funding		External Funding		External Funding 2022
				2018	2019	2019	2020	2020	2021	2021	2022	
Continuing Projects												
19	Cape May Vessel Fueling System Replacement	\$ 130,000	\$ 1,823,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
56	Fender Replacements	\$ 1,004,000	\$ -	\$ -	\$ 1,700,000	\$ -	\$ 850,000	\$ -	\$ 850,000	\$ -	\$ 850,000	\$ -
58	Transfer Bridge Replacements	\$ 441,000	\$ -	\$ -	\$ 5,800,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
59	Lewes Terminal Master Plan Phase 1: Utility Corridor	\$ -	\$ -	\$ -	\$ 3,620,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
60	Cape May Terminal Master Plan Phase 1: Utility Corridor	\$ -	\$ -	\$ -	\$ 3,300,000	\$ -	\$ 3,600,000	\$ -	\$ -	\$ -	\$ -	\$ -
62	Food Service Improvements Cape May	\$ 100,000	\$ -	\$ -	\$ 400,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
63	Dredge Disposal Site Improvements	\$ 31,000	\$ -	\$ -	\$ 4,543,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
65	Freeman Highway Storage Building	\$ 130,000	\$ -	\$ -	\$ 1,400,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
66	Electrical Signage - Cape May and Lewes	\$ 83,000	\$ -	\$ -	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
67	Generator Switchgear Replacement - Cape May	\$ -	\$ -	\$ -	\$ 1,260,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
79	Bank Stabilization and Slip No. 6 Rehabilitation	\$ 76,000	\$ -	\$ -	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
93	Roof and Building Envelope Rehabilitation (CMLF)	\$ -	\$ -	\$ -	\$ 806,000	\$ -	\$ 101,000	\$ -	\$ -	\$ -	\$ -	\$ -
Grand Total		\$ 1,995,000	\$ 1,823,000	\$ -	\$ 23,579,000	\$ -	\$ 4,551,000	\$ -	\$ 850,000	\$ -	\$ 850,000	\$ -

19 **Cape May Vessel Fueling System Replacement - Asset Preservation**

An underground vessel fueling system was installed more than 20 years ago and has reached the end of its useful life. A new above ground system will be designed and constructed to permit full access for maintenance along the line. This project has an estimated DRBA cost of \$1.823 million in 2018.

56 **Fender Replacements - Asset Preservation**

High strength fiberglass fender panels were installed during the late 1990s at both terminals to resist vessel impact along the bulkhead. These panels have reached their lifespan and are being replaced with steel panels similar in shape and size. This project has an estimated DRBA cost of \$4.25 million in the out years.

58 **Transfer Bridge Replacements - Safety**

The transfer bridges in Cape May and Lewes are in need of updates pertaining to the age of the structures, deteriorated concrete, and structurally deficient supports. The project incorporates an inspection, design, and construction, as well as, allocation of bridge numbers by the state to the structures. This project has an estimated DRBA cost of \$5.8 million in the out years.

59 **Lewes Terminal Master Plan Phase 1: Utility Corridor - Efficient and Sustainable**

The utility infrastructure at the Lewes Terminal is reaching the end of its service life. This is the first phase of implementing the master plan, which addresses the aging utility infrastructure. This project proposes the design and installation of a centralized utility corridor, which allows for easier access to perform maintenance and repairs. This project has an estimated DRBA cost of \$3.62 million in the out years.

60 **Cape May Terminal Master Plan Phase 1: Utility Corridor - Efficient and Sustainable**

This is the first phase of implementing the Cape May Master Plan, which addresses the aging utility infrastructure. This project proposes the design and installation of a centralized utility corridor, which allows for easier access to perform maintenance and repairs. This project has an estimated DRBA cost of \$6.9 million in the out years.

Cape May Lewes Ferry - Continuing Projects

- 62 **Food Service Improvements Cape May - Efficient and Sustainable**
The food service operations at the Cape May Ferry Terminal are aiming to improve customer service experience and improve operational efficiency. The project plans for improvements to the kitchen, including purchasing of new equipment and improvements for more efficient and safer cooking operations. This project has an estimated DRBA cost of \$400,000 in the out years.
- 63 **Dredge Disposal Site Improvements - Efficient and Sustainable**
The existing dredge disposal site in Cape May is nearing capacity and future dredging costs will increase significantly if off-site disposal of the wet dredge material is necessary. This project provides renewed storage capacity through excavation of the dewatered material for general fill at a compatible site at Cape May Airport. This project has an estimated DRBA cost of \$4.543 million in the out years.
- 65 **Freeman Highway Storage Building - Efficient and Sustainable**
The Freeman Highway Facility is in need of a permanent storage building and the site is in need of pavement and drainage improvements. The project proposes the design and construction of a conditioned storage building and corresponding site improvements. This project has an estimated DRBA cost of \$1.4 million in the out years.
- 66 **Electrical Signage - Cape May and Lewes - Efficient and Sustainable**
The current ferry facilities do not have modern indicators for toll lane status or advertisement boards. This project involves the supply and installation of both toll lane indicators and variable message signs for advertisement of terminal facilities. This project has an estimated DRBA cost of \$500,000 in the out years.
- 67 **Generator Switchgear Replacement - Cape May - Asset Preservation**
The Cape May Terminal's switchgear for emergency power is reaching the end of its life cycle. This projects proposes the design and installation of a new switch gear for the emergency power system. This project has an estimated DRBA cost of \$1.26 million in the out years.
- 79 **Bank Stabilization and Slip No. 6 Rehabilitation - Asset Preservation**
This project involves bank stabilization, soil erosion and sediment control, and wetland mitigation in accordance with the U.S. Army Corps of Engineers and New Jersey Department of Environmental Protection requirements. This project has an estimated DRBA cost of \$250,000 in the out years.
- 93 **Roof and Building Envelope Rehabilitation (CMLF) - Asset Preservation**
The facilities' roofing systems and building envelopes are aging and in need of repair. This project aims to identify, prioritize, and repair the facilities' roofing systems and develops a system for cataloging future repair needs. This project has an estimated DRBA cost of \$907,000 in the out years.

Cape May - Lewes Ferry - Annual Projects

Crossings Strategic Capital Improvement Plan

Ranking	Project	2018	External Funding 2018	2019	External Funding 2019	2020	External Funding 2020	2021	External Funding 2021	2022	External Funding 2022
	Annual Projects										
1B	Annual Automation/Telecom Upgrades (CMLF)	\$ 460,000	\$ -	\$ 1,465,000	\$ -	\$ 555,000	\$ -	\$ 412,000	\$ -	\$ 220,000	\$ -
5	Annual Vessel Maintenance & Dry Docking	\$ 6,450,000	\$ -	\$ 5,220,000	\$ -	\$ 8,660,000	\$ -	\$ 8,120,000	\$ -	\$ 2,840,000	\$ -
27	Annual Minor Capital Maintenance (CMLF)	\$ 550,000	\$ -	\$ 2,298,000	\$ -	\$ 555,000	\$ -	\$ 425,000	\$ -	\$ 425,000	\$ -
35	Annual Minor Capital Equipment (CMLF)	\$ 294,000	\$ -	\$ 1,330,000	\$ -	\$ 192,000	\$ -	\$ -	\$ -	\$ -	\$ -
49	Annual Maintenance Dredging (CM)	\$ -	\$ -	\$ 1,500,000	\$ -	\$ 1,000,000	\$ -	\$ 1,000,000	\$ -	\$ 1,000,000	\$ -
	Grand Total	\$ 7,754,000	\$ -	\$ 11,813,000	\$ -	\$ 10,962,000	\$ -	\$ 9,957,000	\$ -	\$ 4,485,000	\$ -

1B **Annual Automation/Telecom Upgrades (CMLF) - Efficient and Sustainable**

Automation upgrades with equipment enhancements are required for maintaining sustainable and efficient facilities. This project includes but is not limited to: automation master planning, computer hardware replacement purchases, network upgrades, software and hardware upgrades, uninterruptible power supply improvements, camera installations, fire detection systems upgrades, and other miscellaneous upgrades or installations. This project has an estimated DRBA cost of \$460,000 in 2018 and \$2.652 million in the out years.

5 **Annual Vessel Maintenance & Dry Docking - Efficient and Sustainable**

This project programs annual capital expenditures for the three (3) vessels, particularly in areas that preserve these assets and improve passenger safety and operational reliability. Planned projects include but are not limited to: vessel shipyard dry-dockings, purchase of life saving equipment, seating replacements, systems efficiency upgrades, generator overhauls, and miscellaneous improvements. This project has an estimated DRBA cost of \$6.45 million in 2018 and \$24.84 million in the out years.

27 **Annual Minor Capital Maintenance (CMLF) - Asset Preservation**

This project programs annual work activities necessary to accommodate changing regulations and to preserve existing infrastructure. These land-side projects include, but not be limited to: HVAC improvements, roofing, terminal improvements, electrical improvements, security enhancements, building and workshop improvements, fencing and signage improvements, and carpet replacement. This project has an estimated DRBA cost of \$550,000 in 2018 and \$3.703 million in the out years.

35 **Annual Minor Capital Equipment (CMLF) - Efficient and Sustainable**

This project programs annual capital equipment purchases which include but are not limited to: sedans, pick-up trucks, emergency generators, trailers, and other equipment that are utilized to preserve the existing infrastructure assets. Purchases are based on established replacement guidelines considering useful life and condition. This project has an estimated DRBA cost of \$294,000 in 2018 and \$1.522 million in the out years.

49 **Annual Maintenance Dredging (CM) - Safety**

This project programs hydrographic surveys for planning and scheduling of annual maintenance dredging at the ferry terminals. Cape May requires dredging annually as areas are prone to siltation. Scheduling of dredging at Lewes is on an as needed basis. This project has an estimated DRBA cost of \$4.5 million in the out years.

Cape May - Lewes Ferry - New Projects

Crossings Strategic Capital Improvement Plan

Ranking	Project	2018	External Funding		External Funding		External Funding		External Funding	
			2018	2019	2019	2020	2020	2021	2021	2022
	New Projects									
51	Lewes "On the Rocks" Kitchen Expansion	\$ -	\$ -	\$ 450,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
52	Cape May Kitchen Renovations	\$ -	\$ -	\$ 400,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Grand Total	\$ -	\$ -	\$ 850,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

51 **Lewes "On the Rocks" Kitchen Expansion - Economic Development**

The food service operations at the Lewes Terminal are aiming to improve customer service experience and improve operational efficiency. This project proposes a new "On the Rocks" outdoor kitchen, replacing the existing open-air grilling area, improving efficiency and promoting safer working conditions. This project has an estimated DRBA cost of \$450,000 in the out years.

52 **Cape May Kitchen Renovations - Efficient and Sustainable**

The food service operations at the Cape May Ferry Terminal are aiming to improve customer service experience and improve operational efficiency. The project plans for improvements to the kitchen, including purchasing of new equipment and improvements for more efficient and safer cooking operations. This project has an estimated DRBA cost of \$400,000 in the out years.

Cape May - Lewes Ferry - Out Year Projects

Crossings Strategic Capital Improvement Plan

Ranking	Project	External Funding		External Funding		External Funding		External Funding		External Funding	
		2018	2018	2019	2019	2020	2020	2021	2021	2022	2022
	Out Year Projects										
81	Motor Vessel Repowering	\$ -	\$ -	\$ 800,000	\$ 3,000,000	\$ 800,000	\$ 3,000,000	\$ -	\$ -	\$ -	\$ -
114	Approach Roads Rehab(CM Phase 2)	\$ -	\$ -	\$ 3,500,000	\$ -	\$ 3,550,000	\$ -	\$ -	\$ -	\$ -	\$ -
115	Freeman Highway Repaving	\$ -	\$ -	\$ 100,000	\$ -	\$ 900,000	\$ -	\$ -	\$ -	\$ -	\$ -
116	Motor Vessel Replacement Program	\$ -	\$ -	\$ 1,800,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
119	Master Plan-Lewes Event/Administration Building	\$ -	\$ -	\$ 600,000	\$ -	\$ 3,500,000	\$ -	\$ 3,500,000	\$ -	\$ -	\$ -
120	Master Plan-Lewes Police Building	\$ -	\$ -	\$ 230,000	\$ -	\$ -	\$ -	\$ 1,000,000	\$ -	\$ 1,500,000	\$ -
126	Master Plan-Cape May Event Space Expansion	\$ -	\$ -	\$ -	\$ -	\$ 360,000	\$ -	\$ 2,000,000	\$ -	\$ 2,200,000	\$ -
127	Master Plan-Cape May Maintenance Building	\$ -	\$ -	\$ -	\$ -	\$ 75,000	\$ -	\$ 675,000	\$ -	\$ -	\$ -
128	Master Plan-Cape May Parking lot Reconfiguration	\$ -	\$ -	\$ -	\$ -	\$ 975,000	\$ -	\$ 5,000,000	\$ -	\$ 5,600,000	\$ -
129	Master Plan-Cape May Pole Building	\$ -	\$ -	\$ -	\$ -	\$ 100,000	\$ -	\$ 1,400,000	\$ -	\$ -	\$ -
130	Master Plan-Cape May Police Building	\$ -	\$ -	\$ -	\$ -	\$ 305,000	\$ -	\$ 3,000,000	\$ -	\$ -	\$ -
131	Master Plan-Cape May Staging Lane Reconfiguration	\$ -	\$ -	\$ -	\$ -	\$ 550,000	\$ -	\$ 3,000,000	\$ -	\$ 3,000,000	\$ -
132	Master Plan-Lewes Emergency Generator Upgrades	\$ -	\$ -	\$ -	\$ -	\$ 250,000	\$ -	\$ 1,500,000	\$ -	\$ -	\$ -
133	Master Plan-Lewes Terminal Maintenance Garage	\$ -	\$ -	\$ -	\$ -	\$ 125,000	\$ -	\$ 925,000	\$ -	\$ -	\$ -
136	Freeman Highway Bridge Bike Path Widening	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 400,000	\$ -	\$ 4,000,000	\$ -
137	Master Plan-Cape May Administration Building Reconfiguration	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 325,000	\$ -	\$ 3,800,000	\$ -
138	Master Plan-Lewes Entrance and Freeman Highway Reconfiguration	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 270,000	\$ -	\$ 2,800,000	\$ -
139	Master Plan-Lewes Parking lot Reconfiguration	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 800,000	\$ -	\$ 4,500,000	\$ -
140	Master Plan-Lewes Staging Lane Reconfiguration	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 400,000	\$ -	\$ -	\$ -
	Grand Total	\$ -	\$ -	\$ 7,030,000	\$ 3,000,000	\$ 11,490,000	\$ 3,000,000	\$ 24,195,000	\$ -	\$ 27,400,000	\$ -

81 **Motor Vessel Repowering - Asset Preservation**

This project involves the replacement of the engines and reduction gears on two (2) vessels. Engines and reduction gears will be installed in 2019-2020 and 2020-2021. This project has an estimated DRBA cost of \$1.6 million in the out years. The project is partially funded in the amount of \$6.0 million by the Environmental Protection Agency.

114 **Approach Roads Rehab(CM Phase 2) - Asset Preservation**

Roadway improvements are necessary for maintaining expected levels of service for the approach roads to the Cape May Terminal. This project proposes roadway configurations at the entrances to the terminal facilities. Phase II of this project includes improvements to the approach roads, as well as replacement of Cape May highway signage, which has reached the end of its useful life. Phase III of this project includes design and rehabilitation work on the terminal entrance, parking lot, and staging lanes. This project has an estimated DRBA cost of \$7.05 million in the out years.

115 **Freeman Highway Repaving - Asset Preservation**

Roadway improvements are necessary for maintaining expected levels of service for Freeman Highway, approaching the Lewes Terminal. This project includes the repaving, joint repairs, and restriping of the existing roadway. This project has an estimated DRBA cost of \$1 million in the out years.

Cape May - Lewes Ferry - Out Year Projects

- 116 **Motor Vessel Replacement Program - Efficient and Sustainable**
A marine master plan was completed in 2008 which recommended construction of new vessels as compared to renovating the existing vessels, primarily due to the age of the existing fleet. A new vessel is estimated to cost in the \$40 million range or more. This plan supports replacing the three (3) existing vessels with three (3) new vessels and specifies the sale of the existing fleet. The construction of these vessels falls outside of this five year strategic plan, starting in 2023. Federal funding is requested for this project, but not committed at this time. This project has an estimated DRBA cost of \$1.8 million in the out years.
- 119 **Master Plan-Lewes Event/Administration Building - Efficient and Sustainable**
The current Administrative Building in Lewes is at capacity and is reaching the end of its service life. This phase of the Lewes Masterplan proposes a new administration and event building, which will provide new office space and a location for holding larger events. This project has an estimated DRBA cost of \$7.6 million in the out years.
- 120 **Master Plan-Lewes Police Building - Efficient and Sustainable**
When making arrests, the Authority Police take a suspect to a local police department to process. This phase of the master plan proposes a fully operational police facility located in a more centralized area. This project has an estimated DRBA cost of \$2.73 million in the out years.
- 126 **Master Plan-Cape May Event Space Expansion - Efficient and Sustainable**
The event space at the Cape May terminal is less than optimal. This phase of the master plan proposes to the reconfiguration and expansion of the event space in Cape May. This project has an estimated DRBA cost of \$4.56 million in the out years.
- 127 **Master Plan-Cape May Maintenance Building - Asset Preservation**
There is a current need for additional maintenance space and vehicle storage due to a loss of space at the Cape May Airport. This phase of the master plan proposes the design of an additional maintenance building. This project has an estimated DRBA cost of \$750,000 in the out years.
- 128 **Master Plan-Cape May Parking lot Reconfiguration - Efficient and Sustainable**
The parking lots at the Cape May Terminal have a less than optimal traffic flow. This phase of the master plan will design for better traffic flow and provide pedestrians with a safer way to transverse the lot. This project has an estimated DRBA cost of \$11.575 million in the out years.
- 129 **Master Plan-Cape May Pole Building - Efficient and Sustainable**
There is a current need for covered storage in the maintenance yard. This phase of the master plan proposes a pole building providing the needed covered storage. This project has an estimated DRBA cost of \$1.5 million in the out years.
- 130 **Master Plan-Cape May Police Building - Efficient and Sustainable**
When making arrests, the Authority Police take a suspect to a local police department to process. This phase of the master plan proposes a fully operational police facility located in a more centralized area. This project has an estimated DRBA cost of \$3.305 million in the out years.
- 131 **Master Plan-Cape May Staging Lane Reconfiguration - Efficient and Sustainable**
The staging lanes of the ferry are located a significant distance away from the Terminal. This phase of the master plan proposes to reconfigure the staging lanes closer to the Terminal Building and will provide a safer walking path for passengers. This project has an estimated DRBA cost of \$6.55 million in the out years.

Cape May - Lewes Ferry - Out Year Projects

132 **Master Plan-Lewes Emergency Generator Upgrades - Asset Preservation**

The emergency generation system at the Lewes Terminal is reaching the end of its useful life cycle. This project addresses many operational issues with the current system, while installing more efficient, sustainable, and reliable systems. This project involves the design and replacement of the emergency generation system. This project has an estimated DRBA cost of \$1.75 million in the out years.

133 **Master Plan-Lewes Terminal Maintenance Garage - Efficient and Sustainable**

The current location of the maintenance garage is less than optimal and access often conflicts with the flow of traffic from the staging lanes. This phase of the master plan proposes to relocate the garage to the front of the property to reduce this conflict. This project has an estimated DRBA cost of \$1.05 million in the out years.

136 **Freeman Highway Bridge Bike Path Widening - Economic Development**

This project involves the development of a widened bike path along the Freeman Highway Bridge in Lewes. The project anticipates 80% state funds, which are uncommitted at this time. This project has an estimated DRBA cost of \$4.4 million in the out years.

137 **Master Plan-Cape May Administration Building Reconfiguration - Efficient and Sustainable**

The current layout of the Cape May Administrative Building is less than optimal. This phase of the Cape May Master plan will evaluate the layout of the building and design a more optimal configuration for the space. This project has an estimated DRBA cost of \$4.125 million in the out years.

138 **Master Plan-Lewes Entrance and Freeman Highway Reconfiguration - Efficient and Sustainable**

During the peak summer season, traffic backs up from the toll booths onto the roadway, resulting in vehicle backups up to Freeman Highway. This phase of the master plan addresses these overflow issues from the toll booths proposing new lanes that will run along the front of the property allowing for additional vehicle queuing. This project has an estimated DRBA cost of \$3.07 million in the out years.

139 **Master Plan-Lewes Parking lot Reconfiguration - Efficient and Sustainable**

The parking lots at the Cape May Terminal have a less than optimal traffic flow and are in need of redesign. This phase of the master plan addresses the layout of the parking lot, providing better traffic flow and safer way for pedestrians to transverse the lot. This project has an estimated DRBA cost of \$5.3 million in the out years.

140 **Master Plan-Lewes Staging Lane Reconfiguration - Efficient and Sustainable**

The staging lanes at the Lewes Terminal are in need of repaving. This phase of the master plan will reconfigure the staging lanes after moving of the Police and Administration Buildings providing traffic flow for vehicles boarding the vessels. This project has an estimated DRBA cost of \$400,000 in the out years.

Forts Ferry - Annual Projects

Crossings Strategic Capital Improvement Plan

Ranking	Project	2018	External Funding		2019	External Funding		2020	External Funding		2021	External Funding		2022	External Funding		2023	
			2018	2018	2019	2019	2020	2020	2021	2021	2022	2022	2023	2023				
	Annual Projects																	
28	Annual Minor Capital Maintenance (FF)	\$ 10,000	\$ -	\$ 60,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ -
	Grand Total	\$ 10,000	\$ -	\$ 60,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ -

28 Annual Minor Capital Maintenance (FF) - Asset Preservation

This project programs annual work activities necessary to accommodate changing regulations and to preserve existing infrastructure. These land-side projects include, but not be limited to: HVAC improvements, roofing, terminal improvements, electrical improvements, security enhancements, building and workshop improvements, fencing and signage improvements, and carpet replacement. This project has an estimated DRBA cost of \$10,000 in 2018 and \$90,000 in the out years.

New Castle Airport - Continuing Projects

Airports Strategic Capital Improvement Plan

Ranking	Project	2017 \$ Spent (EST.)	2018	External Funding 2018	2019	External Funding 2019	2020	External Funding 2020	2021	External Funding 2021	2022	External Funding 2022
	Continuing Projects											
8	Master Plan (ILG)	\$ 45,000	\$ 5,000	\$ 45,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
9	Obstruction Removal	\$ 20,000	\$ 75,000	\$ 675,000	\$ 50,000	\$ 550,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
10	Taxiway B and E Phase 2	\$ 25,000	\$ 603,000	\$ 5,432,000	\$ 388,000	\$ 3,500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
16	Roof and Building Envelope Rehabilitation (ILG)	\$ 50,000	\$ 950,000	\$ -	\$ 1,185,000	\$ -	\$ 60,000	\$ -	\$ -	\$ -	\$ -	\$ -
47	Terminal Parking Lot Expansion and Improvements	\$ 2,770,000	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
61	Rehabilitate 1-19	\$ 5,000	\$ -	\$ -	\$ 75,000	\$ 693,000	\$ 750,000	\$ 6,750,000	\$ 630,000	\$ 5,670,000	\$ -	\$ -
73	Terminal Façade Improvements	\$ -	\$ -	\$ -	\$ 150,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Grand Total	\$ 2,915,000	\$ 1,883,000	\$ 6,152,000	\$ 1,848,000	\$ 4,743,000	\$ 810,000	\$ 6,750,000	\$ 630,000	\$ 5,670,000	\$ -	\$ -

8 **Master Plan (ILG) - Efficient and Sustainable**

The current master plan is outdated and is eligible for update in accordance with the federal Airport Improvement Program. The Authority intends to develop a dynamic master plan to set goals and plan the future development of the airport. The plan will reflect current industry trends and incorporate feedback from all stakeholders. This project has an estimated DRBA cost of \$5,000 in 2018. The project is partially funded in the amount of approximately \$45,000 by the Federal Aviation Administration.

9 **Obstruction Removal - Safety**

This project programs the removal of obstructions on airport property and properties immediately surrounding the airport and includes easement acquisition over affected off-airport properties. The project brings the airport into compliance with federal airspace safety standards. This project has an estimated DRBA cost of \$75,000 in 2018 and \$50,000 in the out years. The project is partially funded in the amount of approximately \$1.2 million by the Federal Aviation Administration.

10 **Taxiway B and E Phase 2 - Safety**

This project programs the reconstruction and extension of Taxiways “B” and “E” including miscellaneous lighting, signage, and drainage improvements. The project brings the offset distance between these pavements and Runway 1-19 into compliance with FAA standards and provides a full length parallel taxiway to the airport’s primary runway. Phase I was completed in 2015. This project has an estimated DRBA cost of \$603,000 in 2018 and \$388,000 in the out years. The project is partially funded in the amount of approximately \$8.9 million by the Federal Aviation Administration.

16 **Roof and Building Envelope Rehabilitation (ILG) - Asset Preservation**

The New Castle Airport Terminal and Tower’s roofing systems and building envelopes are aging and in need of repair. This project programs the installation of new roofs, panel replacements, and other building envelope repairs to both facilities. This project has an estimated DRBA cost of \$950,000 in 2018 and \$1.245 million in the out years.

47 **Terminal Parking Lot Expansion and Improvements - Economic Development**

The terminal building at New Castle Airport has a limited number of parking spaces for which demand is expected to increase in the coming years. This project programs the expansion of parking facilities needed to accommodate this anticipated demand. This project has an estimated DRBA cost of \$250,000 in 2018.

New Castle Airport - Continuing Projects

61 **Rehabilitate 1-19 - Efficient and Sustainable**

This project programs the rehabilitation and extension of Runway 1-19 along with the installation of an engineered materials arrestment system (EMAS) at the Runway 19 approach. The project maximizes runway length and addresses normal pavement wear and tear anticipated in the out years of the program. This project has an estimated DRBA cost of \$1.455 million in the out years. The project is partially funded in the amount of approximately \$13.113 million by the Federal Aviation Administration.

73 **Terminal Façade Improvements - Asset Preservation**

The terminal facility is dated and has not had a unified visual update in its service life. This project programs funds to design and implement a consistent system of visual improvements to the exterior of the building. This project has an estimated DRBA cost of \$150,000 in the out years.

New Castle Airport - Annual Projects

Airports Strategic Capital Improvement Plan

Ranking	Project	2018	External Funding 2018	2019	External Funding 2019	2020	External Funding 2020	2021	External Funding 2021	2022	External Funding 2022
	Annual Projects										
1C	Annual Automation/Telecom Upgrades (ILG)	\$ 165,000	\$ -	\$ 315,000	\$ -	\$ 180,000	\$ -	\$ 182,000	\$ -	\$ 50,000	\$ -
29	Annual Minor Capital Maintenance (ILG)	\$ 325,000	\$ -	\$ 660,000	\$ -	\$ 350,000	\$ -	\$ 300,000	\$ -	\$ 300,000	\$ -
36	Annual Minor Capital Equipment (ILG)	\$ 182,000	\$ -	\$ 861,000	\$ -	\$ 430,000	\$ -	\$ -	\$ -	\$ -	\$ -
	Grand Total	\$ 672,000	\$ -	\$ 1,836,000	\$ -	\$ 960,000	\$ -	\$ 482,000	\$ -	\$ 350,000	\$ -

1C **Annual Automation/Telecom Upgrades (ILG) - Efficient and Sustainable**

Automation upgrades with equipment enhancements are required for maintaining sustainable and efficient facilities. This project includes but is not limited to: automation master planning, computer hardware replacement purchases, network upgrades, software and hardware upgrades, uninterruptible power supply improvements, camera installations, fire detection systems upgrades, and other miscellaneous upgrades or installations. This project has an estimated DRBA cost of \$165,000 in 2018 and \$727,000 in the out years.

29 **Annual Minor Capital Maintenance (ILG) - Asset Preservation**

This project programs repairs, renovations, and improvements to Authority owned and occupied facilities and infrastructure to include, but not be limited to: site grading, lighting, signage, utility upgrades, storm water, fire suppression, pavement, airfield security/safety, planning, permitting, and record document updates. The project is necessary to protect the facilities, maintain good repair, and provide for public safety. This project has an estimated DRBA cost of \$325,000 in 2018 and \$1.61 million in the out years.

36 **Annual Minor Capital Equipment (ILG) - Efficient and Sustainable**

This annual project programs the periodic purchase of capital equipment generally consisting of: mowers, trailers, and other miscellaneous small equipment. The project provides for periodic equipment upgrade or replacement as needed to support airport operations. This project has an estimated DRBA cost of \$182,000 in 2018 and \$1.291 million in the out years.

New Castle Airport - New Projects

Airports Strategic Capital Improvement Plan

Ranking	Project	2018	External Funding		External Funding		External Funding		External Funding		External Funding	
			2018	2019	2019	2020	2020	2021	2021	2022	2022	
	New Projects											
64	Utility Survey	\$ -	\$ -	\$ 1,950,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
72	Emergency Access Road Rehabilitation	\$ -	\$ -	\$ 105,000	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
76	Cargo Apron Rehabilitation	\$ -	\$ -	\$ 300,000	\$ 1,350,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
104	Authority Wide Airport Building Assessments	\$ -	\$ -	\$ 450,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
107	Miscellaneous Airport Tenant Improvements (ILG)	\$ -	\$ -	\$ 3,090,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
121	Geometric Safety Improvements	\$ -	\$ -	\$ 6,000	\$ 54,000	\$ 64,000	\$ 576,000	\$ 125,000	\$ 1,125,000	\$ -	\$ -	\$ -
	Grand Total	\$ -	\$ -	\$ 5,901,000	\$ 1,904,000	\$ 64,000	\$ 576,000	\$ 125,000	\$ 1,125,000	\$ -	\$ -	\$ -

64 Utility Survey - Efficient and Sustainable

Utility records and locations services are not provided by the local location agencies for the majority of the Authority's properties and historical records are difficult to track without a common GIS platform. This project will include a preliminary field utility survey in conjunction with a GIS platform to record this data and track future changes. The 2018 survey will cover the New Castle Airport. This project has an estimated DRBA cost of \$1.95 million in the out years.

72 Emergency Access Road Rehabilitation - Efficient and Sustainable

Portions of the perimeter road system are becoming damaged as a result of heavier than expected vehicle traffic. This project designs and constructs a new pavement section to accommodate this traffic. This project has an estimated DRBA cost of \$105,000 in the out years. The project is partially funded in the amount of approximately \$500,000 by the Federal Aviation Administration.

76 Cargo Apron Rehabilitation - Efficient and Sustainable

The Cargo Apron has been rated in poor condition by the State of Delaware's pavement management study. This project programs the design and construction of this rehabilitation, to include demolition and reconstruction of existing asphalt pavement. This project has an estimated DRBA cost of \$300,000 in the out years. The project is partially funded in the amount of approximately \$1.4 million by the Federal Aviation Administration.

104 Authority Wide Airport Building Assessments - Asset Preservation

Buildings throughout all three airports are aging and many of are in need of upgrades and repairs. This project aims to assess these buildings and program prioritization for repairs. This project has an estimated DRBA cost of \$450,000 in the out years.

New Castle Airport - New Projects

107 **Miscellaneous Airport Tenant Improvements (ILG) - Asset Preservation**

The Authority needs to program substantial capital infrastructure improvements to meet external needs. This project programs building repairs and site improvements for the airport tenants as needed per lease agreements with the Authority. This project has an estimated DRBA cost of \$3.09 million in the out years.

121 **Geometric Safety Improvements - Safety**

There are several locations adjacent to Runway 14-32 where the pavement geometry is not ideal for aircraft traffic. This project programs for the design and construction of modifications to the pavement and associated lighting systems to address pavement geometry. This project has an estimated DRBA cost of \$195,000 in the out years. The project is partially funded in the amount of approximately \$1.8 million by the Federal Aviation Administration.

New Castle Airport - Out Year Projects

Airports Strategic Capital Improvement Plan

Ranking	Project	2018		External Funding 2018		2019		External Funding 2019		2020		External Funding 2020		2021		External Funding 2021		2022		External Funding 2022	
	Out Year Projects																				
122	WildLife Hazard Assessment (ILG)	\$	-	\$	-	\$	-	\$	-	\$	15,000	\$	125,000	\$	-	\$	-	\$	-	\$	-
141	Relocate Airport Operations and Maintenance	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	500,000	\$	-
	Grand Total	\$	-	\$	-	\$	-	\$	-	\$	15,000	\$	125,000	\$	-	\$	-	\$	500,000	\$	-

122 WildLife Hazard Assessment (ILG) - Efficient and Sustainable

This project programs the observation of wild life on the airfields and the reporting of potential impacts in order to meet FFA operational requirements. This project has an estimated DRBA cost of \$15,000 in the out years. The project is partially funded in the amount of approximately \$125,000 by the Federal Aviation Administration.

141 Relocate Airport Operations and Maintenance - Efficient and Sustainable

The airport operations and maintenance facilities are currently located on opposite sides of the airfield with the maintenance facility located entirely within the secured perimeter of the Delaware Air National Guard. As part of the master plan process, a common site was selected and this project budgets for the development of the site to accommodate the operation and maintenance needs of the airport. Partial funding is anticipated from the Delaware Air National Guard and the Federal Aviation Administration for this project, but is not committed at this time. This project has an estimated DRBA cost of \$500,000 in the out years.

Millville Airport - Continuing Projects

Airports Strategic Capital Improvement Plan

Ranking	Project	2017 \$ Spent (EST.)	2018	External Funding 2018	2019	External Funding 2019	2020	External Funding 2020	2021	External Funding 2021	2022	External Funding 2022
	Continuing Projects											
11	Rehabilitate Runway 10-28	\$ 200,000	\$ 450,000	\$ 4,442,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
21	Fuel Farm Relocation	\$ 100,000	\$ 540,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
40	Roof and Building Envelope Rehabilitation (MIV)	\$ 50,000	\$ 50,000	\$ -	\$ 284,000	\$ -	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ -
78	South Apron Expansion	\$ -	\$ -	\$ -	\$ 178,000	\$ 1,457,000	\$ 140,000	\$ 1,250,000	\$ -	\$ -	\$ -	\$ -
	Grand Total	\$ 350,000	\$ 1,040,000	\$ 4,442,000	\$ 462,000	\$ 1,457,000	\$ 190,000	\$ 1,250,000	\$ -	\$ -	\$ -	\$ -

11 **Rehabilitate Runway 10-28 - Asset Preservation**

This project programs the rehabilitation of Runway 10-28 including miscellaneous lighting, signage, and drainage improvements. The project is recommended in accordance with the findings of the latest Pavement Management Study. This project has an estimated DRBA cost of \$450,000 in 2018. The project is partially funded in the amount of approximately \$4.4 million by the Federal Aviation Administration.

21 **Fuel Farm Relocation - Economic Development**

This project programs the relocation of a new dual (Jet A and 100 LL) aviation fuel farm. The project will replace the existing fuel farm which is nearing the end of its design life and also includes relocation of the facility to a more appropriate location. This project has an estimated DRBA cost of \$540,000 in 2018.

40 **Roof and Building Envelope Rehabilitation (MIV) - Asset Preservation**

The facilities' roofing systems and building envelopes are aging and in need of repair. This project aims to identify, prioritize, and repair the facilities' roofing systems and develops a system for cataloging future repair needs. This project has an estimated DRBA cost of \$50,000 in 2018 and \$334,000 in the out years.

78 **South Apron Expansion - Economic Development**

The project programs the design and construction of a new cargo apron in the vicinity of the intersection of Taxiways "B" and "E". The project will expand the apron pavement to provide for more diverse aircraft operations. This project has an estimated DRBA cost of \$318,000 in the out years. The project is partially funded in the amount of approximately \$2.7 million by the Federal Aviation Administration.

Millville Airport - Annual Projects

Airports Strategic Capital Improvement Plan

Ranking	Project	2018	External Funding	2019	External Funding	2020	External Funding	2021	External Funding	2022	External Funding
			2018		2019		2020		2021		2022
	Annual Projects										
1D	Annual Automation/Telecom Upgrades (MIV)	\$ 100,000	\$ -	\$ 120,000	\$ -	\$ 25,000	\$ -	\$ 20,000	\$ -	\$ 20,000	\$ -
30	Annual Minor Capital Maintenance (MIV)	\$ 102,000	\$ 250,000	\$ 375,000	\$ -	\$ 200,000	\$ -	\$ 200,000	\$ -	\$ 200,000	\$ -
37	Annual Minor Capital Equipment (MIV)	\$ 32,000	\$ -	\$ 125,000	\$ -	\$ 80,000	\$ -	\$ -	\$ -	\$ -	\$ -
	Grand Total	\$ 234,000	\$ 250,000	\$ 620,000	\$ -	\$ 305,000	\$ -	\$ 220,000	\$ -	\$ 220,000	\$ -

1D **Annual Automation/Telecom Upgrades (MIV) - Asset Preservation**

Automation upgrades with equipment enhancements are required for maintaining sustainable and efficient facilities. This project includes but is not limited to: automation master planning, computer hardware replacement purchases, network upgrades, software and hardware upgrades, uninterruptible power supply improvements, camera installations, fire detection systems upgrades, and other miscellaneous upgrades or installations. This project has an estimated DRBA cost of \$100,000 in 2018 and \$185,000 in the out years.

30 **Annual Minor Capital Maintenance (MIV) - Asset Preservation**

The project programs repairs, renovations, and improvements to Authority owned and occupied facilities and infrastructure to include, but not be limited to: site grading, lighting, signage, utility upgrades, storm water, fire suppression, pavement, airfield security/safety, planning, permitting and record document updates. The project is necessary to protect the facilities, maintain good repair, and provide for public safety. This project has an estimated DRBA cost of \$102,000 in 2018 and \$975,000 in the out years. The project is partially funded in the amount of approximately \$250,000 by the Federal Aviation Administration.

37 **Annual Minor Capital Equipment (MIV) - Efficient and Sustainable**

This project programs the periodic purchase of capital equipment generally consisting of, but not limited to: mowers, trailers, and other miscellaneous small equipment. The project provides for periodic equipment upgrade or replacement as needed to support airport operations. This project has an estimated DRBA cost of \$32,000 in 2018 and \$205,000 in the out years.

Millville Airport - New Projects

Airports Strategic Capital Improvement Plan

Ranking	Project	2018	External Funding		External Funding		External Funding		External Funding	
			2018	2019	2019	2020	2020	2021	2021	2022
	New Projects									
42	Rehabilitate North Apron	\$ 5,000	\$ -	\$ 10,000	\$ 99,000	\$ 110,000	\$ 1,000,000	\$ 110,000	\$ 1,000,000	\$ -
106	Miscellaneous Airport Tenant Improvements (MIV)	\$ -	\$ -	\$ 2,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Grand Total	\$ 5,000	\$ -	\$ 2,010,000	\$ 99,000	\$ 110,000	\$ 1,000,000	\$ 110,000	\$ 1,000,000	\$ -

42 Rehabilitate North Apron - Asset Preservation

This project programs reconfiguration and repairs to the concrete apron pavement serving the corporate aviation complex. The project is recommended in accordance with the findings of the latest Pavement Management Study. This project has an estimated DRBA cost of \$5,000 in 2018 and \$230,000 in the out years. The project is partially funded in the amount of approximately \$2.1 million by the Federal Aviation Administration.

106 Miscellaneous Airport Tenant Improvements (MIV) - Asset Preservation

The Authority needs to program substantial capital infrastructure improvements to meet external needs. This project programs building repairs and site improvements for the airport tenants as needed per lease agreements with the Authority. This project has an estimated DRBA cost of \$2 million in the out years.

Millville Airport - Out Year Projects

Airports Strategic Capital Improvement Plan

Ranking	Project	2018	External Funding		External Funding		External Funding		External Funding	
			2018	2019	2019	2020	2020	2021	2021	2022
	Out Year Projects									
117	T-Hanger Replacements	\$ -	\$ -	\$ 125,000	\$ -	\$ 1,250,000	\$ -	\$ -	\$ -	\$ -
123	WildLife Hazard Assessment (MIV)	\$ -	\$ -	\$ -	\$ -	\$ 20,000	\$ 200,000	\$ -	\$ -	\$ -
135	Rehabilitate Taxiways "A", "C", and "G"	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 50,000	\$ 500,000	\$ 300,000
	Grand Total	\$ -	\$ -	\$ 125,000	\$ -	\$ 1,270,000	\$ 200,000	\$ 50,000	\$ 500,000	\$ 300,000

117 **T-Hanger Replacements - Economic Development**

The existing portable T-Hangars at the airport have reached the end of their serviceable life and can no longer be economically maintained. This project programs the design and construction costs for a new ten bay T-hangar building to be constructed at the T-hangar site which was recently constructed with the benefit federal airport improvement program funds. This project has an estimated DRBA cost of \$1.375 million in the out years.

123 **WildLife Hazard Assessment (MIV) - Efficient and Sustainable**

This project programs the observation of wild life on the airfields and the reporting of potential impacts in order to meet FFA operational requirements. This project has an estimated DRBA cost of \$20,000 in the out years. The project is partially funded in the amount of approximately \$200,000 by the Federal Aviation Administration.

135 **Rehabilitate Taxiways "A", "C", and "G" - Asset Preservation**

In accordance with the findings of the latest Pavement Management Study taxiways A, C, and G are in need of repair. This project programs the design and construction costs for these repairs to include pavement resurfacing, lighting, signage, and associated drainage improvements. This project has an estimated DRBA cost of \$350,000 in the out years. The project is partially funded in the amount of approximately \$3.2 million by the Federal Aviation Administration.

Cape May Airport - Continuing Projects

Airports Strategic Capital Improvement Plan

Ranking	Project	2017 \$ Spent	2018	External Funding		External Funding		External Funding		External Funding		External Funding 2022
		(EST.)		2018	2019	2019	2020	2020	2021	2021	2022	
Continuing Projects												
12	Obstruction Removal Phase 3	\$ -	\$ 66,000	\$ 597,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
13	Drainage Swale Improvements (Phase 3/4)	\$ -	\$ 131,000	\$ 1,181,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
17	Deer/Perimeter Fencing	\$ -	\$ 81,000	\$ 730,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
22	Rehabilitate Apron B	\$ -	\$ 20,000	\$ 198,000	\$ 130,000	\$ 1,150,000	\$ 130,000	\$ 1,150,000	\$ -	\$ -	\$ -	\$ -
43	Miscellaneous Airport Tenant Improvements (WWD)	\$ 240,000	\$ 210,000	\$ -	\$ 750,000	\$ -	\$ 100,000	\$ -	\$ 100,000	\$ -	\$ 100,000	\$ -
77	Second Multi-Tenant Building	\$ 1,350,000	\$ -	\$ -	\$ 3,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
80	Rehabilitate 10-28 & Remove Taxiway E	\$ -	\$ -	\$ -	\$ 55,000	\$ 450,000	\$ 380,000	\$ 3,420,000	\$ 400,000	\$ 3,600,000	\$ -	\$ -
94	Roof and Building Envelope Rehabilitation (WWD)	\$ -	\$ -	\$ -	\$ 500,000	\$ -	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -
Grand Total		\$ 1,590,000	\$ 508,000	\$ 2,706,000	\$ 4,435,000	\$ 1,600,000	\$ 620,000	\$ 4,570,000	\$ 500,000	\$ 3,600,000	\$ 100,000	\$ -

12 **Obstruction Removal Phase 3 - Safety**

This project is the third of three phases of obstruction removal on airport property and properties immediately surrounding the airport. The project brings the airport into compliance with federal airspace safety standards. Phase I was completed in 2013 and Phase II was completed in 2015. This project has an estimated DRBA cost of \$66,000 in 2018. The project is partially funded in the amount of approximately \$597,000 by the Federal Aviation Administration.

13 **Drainage Swale Improvements (Phase 3/4) - Asset Preservation**

This project programs a preliminary environmental effort, as well as design and construction necessary to remedy any environmental concerns. The preliminary environmental effort will determine treatment alternatives for the soils in the drainage ditches around the perimeter of the airport. Once environmental concerns are fully identified, improvements to these conveyances will be designed and constructed such that they perform as originally intended. This project has an estimated DRBA cost of \$131,000 in 2018. The project is partially funded in the amount of approximately \$1.2 million by the Federal Aviation Administration.

17 **Deer/Perimeter Fencing - Safety**

This project programs the construction of wildlife control fence at the approach to Runway 10. The project completes the airport's perimeter control fencing and provides for improved airport safety. This project has an estimated DRBA cost of \$81,000 in 2018. The project is partially funded in the amount of approximately \$730,000 by the Federal Aviation Administration.

22 **Rehabilitate Apron B - Asset Preservation**

This project programs repairs to the primary apron pavement including concrete pavement joint repairs and individual slab replacements. The project is recommended in accordance with the findings of the latest Pavement Management Study. This project has an estimated DRBA cost of \$20,000 in 2018 and \$260,000 in the out years. The project is partially funded in the amount of approximately \$2.5 million by the Federal Aviation Administration.

43 **Miscellaneous Airport Tenant Improvements (WWD) - Safety**

This project programs the demolition of Buildings 22 and 98 at Cape May Airport. The existing facilities are in extremely poor repair and must be removed to maintain safety and preserve marketable portions of the airport industrial park. Work will include complete demolition to include foundations. This project has an estimated DRBA cost of \$210,000 in 2018 and \$1.05 million in the out years.

Cape May Airport - Continuing Projects

77 **Second Multi-Tenant Building - Economic Development**

Cape May Airport has experience increased development and business interest and there is little available space to accommodate demand. This project provides for the construction of a second multi-tenant light industrial building to accommodate new tenancy requests. This project has an estimated DRBA cost of \$3 million in the out years.

80 **Rehabilitate 10-28 & Remove Taxiway E - Asset Preservation**

Results from the most recent pavement management study indicate the pavement on Runway 10-28 is deteriorating and will be in need of rehabilitation in the near future. This project provides for a mill and overlay to preserve the runway pavement along with the removal of an unnecessary connector taxiway. This project has an estimated DRBA cost of \$835,000 in the out years. The project is partially funded in the amount of approximately \$7.5 million by the Federal Aviation Administration.

94 **Roof and Building Envelope Rehabilitation (WWD) - Asset Preservation**

The facilities' roofing systems and building envelopes are aging and in need of repair. This project aims to identify, prioritize, and repair the facilities' roofing systems and develops a system for cataloging future repair needs. This project has an estimated DRBA cost of \$510,000 in the out years.

Cape May Airport - Annual Projects

Airports Strategic Capital Improvement Plan

Ranking	Project	External Funding		External Funding		External Funding		External Funding		External Funding	
		2018	2018	2019	2019	2020	2020	2021	2021	2022	2022
	Annual Projects										
1E	Annual Automation/Telecom Upgrades (WWD)	\$ 60,000	\$ -	\$ 40,000	\$ -	\$ 15,000	\$ -	\$ 130,000	\$ -	\$ 10,000	\$ -
31	Annual Minor Capital Maintenance (WWD)	\$ 615,000	\$ -	\$ 150,000	\$ -	\$ 225,000	\$ -	\$ 125,000	\$ -	\$ 125,000	\$ -
38	Annual Minor Capital Equipment (WWD)	\$ 52,000	\$ -	\$ 222,000	\$ -	\$ 90,000	\$ -	\$ -	\$ -	\$ -	\$ -
	Grand Total	\$ 727,000	\$ -	\$ 412,000	\$ -	\$ 330,000	\$ -	\$ 255,000	\$ -	\$ 135,000	\$ -

1E Annual Automation/Telecom Upgrades (WWD) - Efficient and Sustainable

Automation upgrades with equipment enhancements are required for maintaining sustainable and efficient facilities. This project includes but is not limited to: automation master planning, computer hardware replacement purchases, network upgrades, software and hardware upgrades, uninterruptible power supply improvements, camera installations, fire detection systems upgrades, and other miscellaneous upgrades or installations. This project has an estimated DRBA cost of \$60,000 in 2018 and \$195,000 in the out years.

31 Annual Minor Capital Maintenance (WWD) - Asset Preservation

This project programs repairs, renovations, and improvements to Authority owned and occupied facilities and infrastructure to include, but not be limited to: site grading, lighting, signage, utility upgrades, storm water, fire suppression, pavement, airfield security/safety, planning, permitting and record document updates. The project is necessary to protect the facilities, maintain good repair, and provide for public safety. This project has an estimated DRBA cost of \$615,000 in 2018 and \$625,000 in the out years.

38 Annual Minor Capital Equipment (WWD) - Efficient and Sustainable

This project programs the periodic purchase of capital equipment generally consisting of, but not limited to: mowers, trailers, and other miscellaneous small equipment. The project provides for periodic equipment upgrade or replacement as needed to support airport operations. This project has an estimated DRBA cost of \$52,000 in 2018 and \$312,000 in the out years.

Cape May Airport - Out Year Projects

Airports Strategic Capital Improvement Plan

Ranking	Project	2018	External Funding		External Funding		External Funding		External Funding	
			2018	2019	2019	2020	2020	2021	2021	2022
	Out Year Projects									
118	New Terminal	\$ -	\$ -	\$ 100,000	\$ -	\$ 500,000	\$ -	\$ -	\$ -	\$ -
124	WildLife Hazard Assessment (WWD)	\$ -	\$ -	\$ -	\$ -	\$ 20,000	\$ 200,000	\$ -	\$ -	\$ -
	Grand Total	\$ -	\$ -	\$ 100,000	\$ -	\$ 520,000	\$ 200,000	\$ -	\$ -	\$ -

118 **New Terminal - Efficient and Sustainable**

The existing terminal building's layout and condition are not conducive to future terminal functions and the facility is poorly located. Cape May County is investing significant funds in the development of a new airport entrance at Hornet Road and this project provides for the planning, design, and construction of a new terminal facility at the end of Hornet Road immediately adjacent to the airport's FBO and fueling facilities. This project has an estimated DRBA cost of \$600,000 in the out years.

124 **WildLife Hazard Assessment (WWD) - Efficient and Sustainable**

This project programs the observation of wild life on the airfields and the reporting of potential impacts in order to meet FFA operational requirements. This project has an estimated DRBA cost of \$20,000 in the out years. The project is partially funded in the amount of approximately \$200,000 by the Federal Aviation Administration.

Delaware Airpark - Continuing Projects

Airports Strategic Capital Improvement Plan

Ranking	Project	2017 \$ Spent (EST.)	2018	External Funding 2018	2019	External Funding 2019	2020	External Funding 2020	2021	External Funding 2021	2022	External Funding 2022
	Continuing Projects											
7	Runway Relocation - Packages 2,3,4	\$ 500,000	\$ 360,000	\$ 3,240,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
68	New Aviation Fuel Farm	\$ -	\$ -	\$ -	\$ 685,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
70	New Box Hangars	\$ -	\$ -	\$ -	\$ 790,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
101	Master Plan (33N)	\$ -	\$ -	\$ -	\$ 40,000	\$ 360,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
105	Expand Apron	\$ -	\$ -	\$ -	\$ 25,000	\$ 120,000	\$ 125,000	\$ 1,125,000	\$ -	\$ -	\$ -	\$ -
	Grand Total	\$ 500,000	\$ 360,000	\$ 3,240,000	\$ 1,540,000	\$ 480,000	\$ 125,000	\$ 1,125,000	\$ -	\$ -	\$ -	\$ -

7 **Runway Relocation - Packages 2,3,4 - Safety**

This project programs the relocation of the existing runway in three phases and primarily consists of utility infrastructure, storm water, excavation, paving, and grading efforts. The project brings the runway safety areas into compliance with current federal standards and is undertaken in accordance with the recommendations of the Airport Master Plan. This project has an estimated DRBA cost of \$360,000 in 2018. The project is partially funded in the amount of approximately \$3.2 million by the Federal Aviation Administration.

68 **New Aviation Fuel Farm - Economic Development**

This project programs the installation of a new dual (Jet A and 100 LL) aviation fuel farm. The project will replace the existing fuel farm which is nearing the end of its design life and also includes relocation of the facility to a more appropriate location. This project has an estimated DRBA cost of \$685,000 in the out years.

70 **New Box Hangars - Economic Development**

There is a need for additional hangers at the Delaware Air Park. This project programs the construction of additional box hangers to address this demand. This project has an estimated DRBA cost of \$790,000 in the out years.

101 **Master Plan (33N) - Efficient and Sustainable**

The current master plan is outdated and is eligible for update in accordance with the federal Airport Improvement Program. The Authority intends to develop a dynamic master plan to set goals and plan the future development of the airport. The plan will reflect current industry trends and incorporate feedback from all stakeholders. This project has an estimated DRBA cost of \$40,000 in the out years. The project is partially funded in the amount of approximately \$360,000 by the Federal Aviation Administration.

105 **Expand Apron - Economic Development**

The existing apron space is predicted to become more heavily utilized as a result of the runway relocation and facility expansion. This project programs the design and construction of additional apron space, placed appropriately to serve the increased demand. This project has an estimated DRBA cost of \$150,000 in the out years. The project is partially funded in the amount of approximately \$1.2 million by the Federal Aviation Administration.

Delaware Airpark - Annual Projects

Airports Strategic Capital Improvement Plan

Ranking	Project	2018		2019		2020		2021		2022	
			External Funding		External Funding		External Funding		External Funding		External Funding
	Annual Projects										
1F	Annual Automation/Telecom Upgrades (33N)	\$ 10,000	\$ -	\$ -	\$ -	\$ 70,000	\$ -	\$ 36,000	\$ -	\$ -	\$ -
32	Annual Minor Capital Maintenance (33N)	\$ 40,000	\$ 45,000	\$ 303,000	\$ 45,000	\$ 15,000	\$ 45,000	\$ 15,000	\$ 45,000	\$ 15,000	\$ 45,000
39	Annual Minor Capital Equipment (33N)	\$ 40,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Grand Total	\$ 90,000	\$ 45,000	\$ 303,000	\$ 45,000	\$ 85,000	\$ 45,000	\$ 51,000	\$ 45,000	\$ 15,000	\$ 45,000

1F **Annual Automation/Telecom Upgrades (33N) - Efficient and Sustainable**

Automation upgrades with equipment enhancements are required for maintaining sustainable and efficient facilities. This project includes but is not limited to: automation master planning, computer hardware replacement purchases, network upgrades, software and hardware upgrades, uninterruptible power supply improvements, camera installations, fire detection systems upgrades, and other miscellaneous upgrades or installations. This project has an estimated DRBA cost of \$10,000 in 2018 and \$106,000 in the out years.

32 **Annual Minor Capital Maintenance (33N) - Asset Preservation**

This project programs repairs, renovations, and improvements to Authority owned and occupied facilities and infrastructure to include, but not be limited to: site grading, lighting, signage, utility upgrades, storm water, fire suppression, pavement, airfield security/safety, planning, permitting, and record document updates. The project is necessary to protect the facilities, maintain good repair, and provide for public safety. This project has an estimated DRBA cost of \$40,000 in 2018 and \$348,000 in the out years. The project is partially funded in the amount of approximately \$225,000 by the Federal Aviation Administration.

39 **Annual Minor Capital Equipment (33N) - Efficient and Sustainable**

This project programs annual capital equipment purchases which may include but are not limited to: vehicles, trucks, specialty equipment, emergency generators, trailers, and other equipment that are utilized to preserve the existing infrastructure assets. Purchases are based on established replacement guidelines considering useful life and condition. This project has an estimated DRBA cost of \$40,000 in 2018.

Delaware Airpark- New Projects

Airports Strategic Capital Improvement Plan

Ranking	Project	2018	External Funding		External Funding		External Funding		External Funding		External Funding	
			2018	2019	2019	2020	2020	2021	2021	2022	2022	
	New Projects											
46	Acquire Land For Airfield Protection	\$ (280,000)	\$ 280,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Grand Total	\$ (280,000)	\$ 280,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

46 **Acquire Land For Airfield Protection - Efficient and Sustainable**

The airport has expanded as part of the airport master plan and the limits to safety and runway protection zones. This project programs the investigation and purchase of land adjacent to the airport. This project has an estimated cost of -\$280,000 in 2018 due to the reimbursement of the same amount by the Federal Aviation Administration.

Delaware Airpark- Out Year Projects

Airports Strategic Capital Improvement Plan

Ranking	Project	2018		External Funding 2018		2019		External Funding 2019		2020		External Funding 2020		2021		External Funding 2021		2022		External Funding 2022	
	Out Year Projects																				
125	Wildlife Hazard Assessment (33N)	\$	-	\$	-	\$	-	\$	-	\$	20,000	\$	200,000	\$	-	\$	-	\$	-	\$	-
	Grand Total	\$	-	\$	-	\$	-	\$	-	\$	20,000	\$	200,000	\$	-	\$	-	\$	-	\$	-

125 Wildlife Hazard Assessment (33N) - Efficient and Sustainable

This project programs the observation of wild life on the airfields and the reporting of potential impacts in order to meet FFA operational requirements. This project has an estimated DRBA cost of \$20,000 in the out years. The project is partially funded in the amount of approximately \$200,000 by the Federal Aviation Administration.

Civil Air Terminal - Annual Projects

Airports Strategic Capital Improvement Plan

Ranking	Project	2018	External Funding		2019	External Funding		2020	External Funding		2021	External Funding		2022	External Funding	
			2018	2018	2019	2019	2020	2020	2021	2021	2022	2022	2022	2022		
	Annual Projects															
1G	Annual Automation/Telecom Upgrades (CAT)	\$ 10,000	\$ -	\$ 25,000	\$ -	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
33	Annual Minor Capital Maintenance (CAT)	\$ 10,000	\$ -	\$ 111,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ -
	Grand Total	\$ 20,000	\$ -	\$ 136,000	\$ -	\$ 15,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ -

1G **Annual Automation/Telecom Upgrades (CAT) - Efficient and Sustainable**

Automation upgrades with equipment enhancements are required for maintaining sustainable and efficient facilities. This project includes but is not limited to: automation master planning, computer hardware replacement purchases, network upgrades, software and hardware upgrades, uninterruptible power supply improvements, camera installations, fire detection systems upgrades, and other miscellaneous upgrades or installations. This project has an estimated DRBA cost of \$10,000 in 2018 and \$30,000 in the out years.

33 **Annual Minor Capital Maintenance (CAT) - Asset Preservation**

This project programs repairs, renovations, and improvements to Authority owned and occupied facilities and infrastructure to include, but not be limited to: site grading, lighting, signage, utility upgrades, storm water, fire suppression, pavement, airfield security/safety, planning, permitting, and record document updates. The project is necessary to protect the facilities, maintain good repair, and provide for public safety. This project has an estimated DRBA cost of \$10,000 in 2018 and \$141,000 in the out years.