

Division of Mitigation Services 2022-23 Annual Report

DMS-WIDE

FLOOD MITIGATION
AND PLANNING

APPENDICES

REGULATORY
ADDENDUM

NCDOT
PROGRAM

STATEWIDE
PROGRAM

RIPARIAN BUFFER
PROGRAM

NUTRIENT OFFSET
PROGRAM

MISSION: To provide cost-effective mitigation alternatives that improve the state's water resources.



Executive Summary

In fiscal year (FY) 2022-23, the NC Division of Mitigation Services (DMS):

- Assisted the North Carolina Department of Transportation (NCDOT) in obtaining permits for 49 transportation projects by providing 48,478 stream mitigation credits and 81.795 wetland mitigation credits.
- Assisted customers with 237 development projects in the Statewide Stream and Wetland, Riparian Buffer, and Nutrient Offset In-Lieu Fee (ILF) Programs by providing:
 - 30,928 stream credits
 - 44.91 wetland credits
 - 1,183,342 credits of buffer mitigation (equivalent to 27 ac buffer restoration)
 - 42,846 pounds of nitrogen reduction
 - 3,300 pounds of phosphorus reduction (a significant increase over previous years)
- Further developed the Natural Infrastructure Flood Mitigation Program (NIFMP) with the Advisory Board to finalize program goals and utilizing modeling to study effects of restoration on flood attenuation.
- Started the Stoney Creek Pilot project, the first project within the NIFMP, in January 2023. The conceptual plan for Stoney was reviewed and finalized.



Program-Wide

The FY 2022-2023 DMS annual report fulfills statutory and regulatory reporting requirements as detailed in the 2010 NCDEQ/DMS In-Lieu Fee Instrument governing in-lieu fee programs for stream & wetland mitigation and the Federal Rules in 33 CFR Parts 325 and 332 & 40 CFR Part 230, and North Carolina G.S. §143-214.13.

DMS operates four in-lieu fee programs:

- **NC DOT Statewide Stream and Wetland ILF**
- **Statewide Stream and Wetland ILF**
- **Riparian Buffer ILF**, and
- **Nutrient Offset ILF Program**

and also implements **Flood Mitigation and Planning.**



Property



- During FY 2022-2023, the State Property Office closed 50 conservation easement transactions totaling 518.32 acres associated with DMS' projects.
- All properties that closed during FY 2022-2023 are shown in [Appendix A-1](#).
- A full inventory of all properties associated with DMS projects acquired to date is presented in [Appendix A-2](#).
- More than 80,500 acres of conservation land or conservation easements have been acquired by DMS and partners to date.
- A full list of DMS projects is in Appendices [A-3](#), [A-4](#), [A-5](#), and [A-6](#).



Program Costs

Recent credit costs were summarized by analyzing full delivery contracts and mitigation bank purchases awarded over the last three fiscal years. The data includes project contracts, administrative costs, overhead, and other costs required to complete these projects. The program rates for the last three years are also summarized.

CREDIT TYPE	RANGE OF RECENT CREDIT COSTS PER CREDIT	PROGRAM RATES**
Stream	\$425 to \$800	\$558.81 to \$646.12
Freshwater Wetland	\$40,000 to \$120,000	\$61,264.36 to \$149,604.11
Coastal Marsh Wetland	N/A*	\$560,000
Riparian Buffer	\$0.75 to \$4.95	\$0.94 to \$6.12
Nutrient Offset Nitrogen	\$6.78 to \$180	\$9.24 to \$133.96
Nutrient Offset Phosphorus	\$96 to \$675	\$138.78 to \$689.59

*DMS did not implement any Coastal Marsh wetland projects in the last three fiscal years.

**Program rates are set using the Actual Cost Method, which is a full cost accounting method and may result in premium rates in high cost watersheds.



Cost Analysis of Private Mitigation Banks

Reporting requirements of G.S. §143 214.13 require DMS to compare project costs with private mitigation bank rates. For this analysis, DMS used the actual submitted prices for mitigation bank credits from requests for bids in the last fiscal year. A complete list of purchased bank credits during 2022-2023 are listed in [Appendix B](#).

MITIGATION TYPE	RANGE OF BANK PRICES PER CREDIT
Stream Mitigation Credits	\$439 to \$750
Riparian Wetland Mitigation Credits	\$50,000 to \$120,000
Non-Riparian Wetland Mitigation Credits	\$45,000 to \$89,087
Coastal Marsh Mitigation Credits	None Submitted
Riparian Buffer Mitigation Credits	\$0.89 to \$4.95
Nitrogen Offset Credits	\$9.73 to \$180.00
Phosphorus Offset Credits	\$142.34 to \$675.00



Advance Credits



DMS' in-lieu fee mitigation instrument allocated advance credits by river basin and eight-digit cataloging units. Pursuant to this operating agreement, this annual report includes a summary of the status and use of "Advance Credits" as defined by federal rules in Appendix C.



Mitigation Losses and Gains

G.S. §143-214.13 requires DMS to document statewide wetland losses and gains and compensatory mitigation performed under G.S. §143-214.8 through G.S. §143-214.12. The data below have been provided by the Division of Water Resources (DWR*) and reflect permitting by the Department of Environmental Quality (DEQ). The remainder of this report documents DMS compensatory mitigation. Complete lists of DMS mitigation requirements and assets are provided in the Regulatory Addendum.

DWR Fiscal Year 7/1/2022 through 6/30/2023	
Streams (Linear Feet)	YTD
Lost from permitting	132,001
Gained from permitting (mitigation)	18,060
Wetlands (Acres)	YTD
Lost from permitting	69.02
Gained from permitting (mitigation)	61.89
Riparian Buffers (Acres)	YTD
Lost from permitting	157.2
Gained from permitting (mitigation)	64.53

* Data is from the DWR database only. Due to permit processes, mitigation and impacts may not (usually do not) occur in the same reporting period. Data may include impacts to resources that do not require mitigation (under required thresholds, for example). Due to versions and revisions, different versions of the same project may occur in the same reporting period causing a double calculation of impacts. As of May 4, 2017, the stream mitigation threshold requirements changed. Only impacts 300 lf or greater of perennial stream require mitigation. As of June 15, 2020, the wetland mitigation threshold requirements changed. Impacts 0.10 acre or greater of wetlands require mitigation. Mitigation required by USACE applicable to permitted impacts is not tracked by DWR.



Flood Mitigation and Planning

NATURAL INFRASTRUCTURE
FLOOD MITIGATION PROGRAM

NIFMP
FUND STATUS

FLOOD RESILIENCY BLUEPRINT

BLUEPRINT
FUND STATUS

DMS' newest mission is to identify and reduce flood risks through flood resiliency planning and the implementation of natural infrastructure projects.



Flood Mitigation and Planning

Natural Infrastructure Flood Mitigation Program (NIFMP)

- DMS and the Advisory Board finalized program goals in 2022-2023 and utilized H&H modeling to study the effect of restoration on flood attenuation.
- Staff have completed literature reviews and analysis to identify the best natural infrastructure and nature-based solutions for North Carolina.
- The Stoney Creek pilot project contract, a pilot project within the NIFMP, was executed in December 2022. The project kicked off on January 24, 2023, with vendor Ecosystem Planning and Restoration, PLLC.
- The first stakeholder outreach meeting was held on February 8, 2023, and a presentation was made to the Wayne County Board of Commissioners on March 21, 2023.
- The conceptual plan for the Stoney Creek Pilot project was reviewed by DMS and finalized in July 2023. The team is now working on finalizing the site selection.



Flood Mitigation and Planning

Natural Infrastructure Flood Mitigation Program

(Fund 2546)

Beginning Cash	\$3,494,600.110
Revenues	\$0
Expenditures	\$ 32,368.01
Adjustment To Cash Basis	\$0
Ending Cash and Bond Balance	\$ 3,462,232.10

Appendix E provides a full listing of expenditures by fund.



Flood Mitigation and Planning

NC Flood Resiliency Blueprint

- The 2021 Appropriations Act provided \$20 million for DMS to develop North Carolina's first Flood Resiliency Blueprint. The blueprint is a statewide watershed planning effort to establish a framework and tools to assist local communities in decision-making related to reducing flood risk and increasing resilience.

Progress:

- The Gap Analysis is nearly complete.
- Phase 1 deliverables are on schedule with the goal of producing a draft blueprint by the end of December 2023.
- The team also designed and launched the Blueprint project's website at ncfloodblueprint.com.
- Held four successful stakeholder outreach sessions in New Bern, Lumberton, Wilmington, and Haywood County.
- Added over 150 subject matter experts from Federal, State, County, Municipal, and Tribal governments, non-governmental organizations, and universities to take part in seven Technical Advisory Groups, to support the team on all aspects of the project.



Flood Mitigation and Planning

NC Flood Resiliency Blueprint

(Fund 2545)

Beginning Cash	\$19,961,152.14
Revenues	\$0
Expenditures	\$ 121,662.39
Adjustment To Cash Basis	\$0
Ending Cash and Bond Balance	\$ 19,839,489.75

Appendix E provides a full listing of expenditures by fund.



DMS ILF Programs

NCDOT
Stream &
Wetland

Statewide
Stream &
Wetland

Riparian
Buffer

Nutrient
Offset

Each of the four DMS in-lieu fee programs are financially independent funds that operate solely on receipts and do not receive any appropriations from the North Carolina General Assembly.



DMS Program Fiscal Summary

FY 2022-2023 fund status detail for each of the DMS in-lieu fee programs.

	NCDOT In-Lieu Fee Program	Statewide Stream & Wetland In-Lieu-Fee Program	Riparian Buffer In-Lieu-Fee Program	Nutrient Offset In-Lieu Fee Program	Flood Resiliency Blueprint	Natural Infrastructure Flood Mitigation Program
Beginning Cash	\$2,491,990.86	\$95,187,550.83	\$16,894,054.00	\$8,038,018.61	\$19,961,152.14	\$3,494,600.11
Revenues	\$21,234,256.61	\$26,715,056.46	\$2,657,982.50	\$2,342,799.20	\$0	\$0
Expenditures	\$21,757,191.02	\$14,366,446.47	\$2,945,849.12	\$526,875.60	\$121,662.39	\$32,368.01
Adjustment to Cash Basis	\$0	\$504,496.87	\$0	\$204,498.96	\$0	\$0
Allow-FV Bond Index Fund	\$0	\$(256,933.77)	\$0	\$(173,705.87)	\$0	\$0
Bond Index Fund	\$0	\$178,517.26	\$0	\$184,905.50	\$0	\$0
Equity Index Fund	\$0	\$1,520,025.63	\$0	\$999,942.48	\$0	\$0
Ending Cash and Cash Equivalents	\$1,969,056.45	\$108,973,273.07	\$16,606,187.38	\$10,860,585.36	\$19,839,489.75	\$3,462,232.10



NCDOT Stream & Wetland ILF

REQUIREMENTS

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EXPENDITURES



COMPLIANCE

INVENTORY



NCDOT Stream & Wetland ILF

- ❖ The goal of this program is to produce mitigation credits to offset anticipated impacts from the implementation of the NCDOT seven-year Strategic Transportation Improvement Program (STIP). Anticipated impacts are provided to DMS by the Natural Environment Unit at NCDOT.
- ❖ In fiscal year 2022-2023 DMS provided mitigation for 49 NCDOT transportation permitted projects requiring stream and/or wetland mitigation.
- ❖ For these NCDOT projects, DMS is providing 48,478 stream mitigation credits and 81.80 wetland mitigation credits.
- ❖ Appendix D-1 provides NCDOT Stream and Wetland Program permitted requirements for fiscal year 2022-23.



NCDOT Stream & Wetland ILF Fund Status

(2984, 2984-9310,2930-9303,)

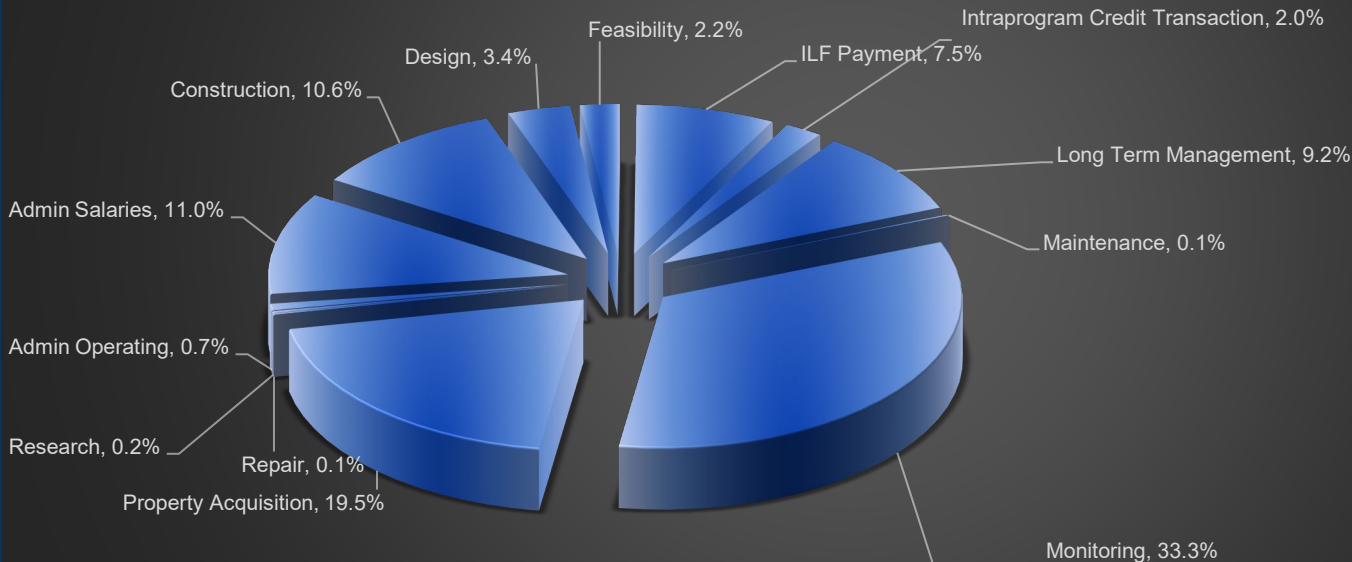
Beginning Cash	\$2,491,990.86
Revenues	\$21,234,256.61
Expenditures	\$21,757,191.02
Adjustment To Cash Basis	\$0
Ending Cash and Bond Balance	\$1,969,056.45



NCDOT Stream & Wetland ILF Expenditures

This figure summarizes the expenditures by payment type for the NCDOT Stream and Wetland ILF Program. [Appendix E](#) provides a full listing of the expenditures by fund.

\$ 21.75 Million Total in 2022-2023



NCDOT Stream & Wetland ILF Compliance

The NCDOT Stream and Wetland ILF Program is a national leader in producing compensatory mitigation in advance of unavoidable environmental impacts. Since 2003, the agreements between NCDOT, NCDEQ, and the U.S. Army Corps of Engineers have allowed NCDOT to move forward with more than \$31 billion in road development projects without delays associated with compensatory mitigation. Regulatory Addendum IV provides a detailed compliance action strategy by cataloging unit.

DOT Program Type	Requirements Due (credits)	Requirements Met (credits)	Requirements Not Met (credits)	Compliance (credits)	Advance Credits Applied	Total Advanced Mitigation * (unassigned)
Stream	1,160,023.200	1,160.023.200	0	100.00%	74,260.625	566,004.612
Wetlands	2,656.399	2,656.399	0	100.00%	87.601	8,605.295

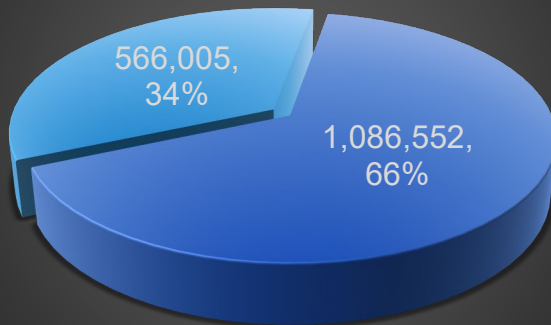
**Includes surplus credits developed by NCDOT and managed by DMS*



NCDOT Stream & Wetland ILF Inventory

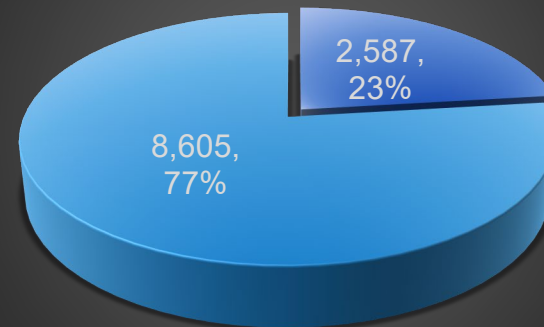
The NCDOT Stream and Wetland ILF Program's gross inventory* totaled 1,652,557 stream credits and 11,192 wetland credits. A large portion of these credits are unassigned and available for future permit requirements as projected in the state's Strategic Transportation Improvement Program. Detailed information about the NCDOT Stream and Wetland ILF Program Gross and Net inventories can be found in Appendices F-1 and F-2 (for non HQP), and F-3 and F-4 (for HQP).

Stream Inventory fiscal 2022-23



■ Applied Credits (59%) ■ Unassigned Credits (41%)

Wetland Inventory fiscal 2022-23



■ Applied Credits (22%) ■ Unassigned Credits (78%)

**Includes surplus credits developed by NCDOT and managed by DMS.
Unassigned credits are available for use on future development projects.*



Statewide Stream & Wetland ILF

REQUIREMENTS

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Statewide Stream & Wetland ILF

- ❖ In fiscal year 2022-2023, DMS accepted 129 new customer ILF payments into the Statewide Stream and Wetland ILF Program, totaling \$23,565,764.
- ❖ These 129 customer payments represent 111 development projects, 30,928 stream credits and 44.91 wetland credits.
- ❖ Appendix D-2 provides Statewide Stream and Wetland ILF Program fiscal year 2022-2023 receipts and requirements.



Statewide Stream & Wetland ILF Fund Status

(2981, 2937)

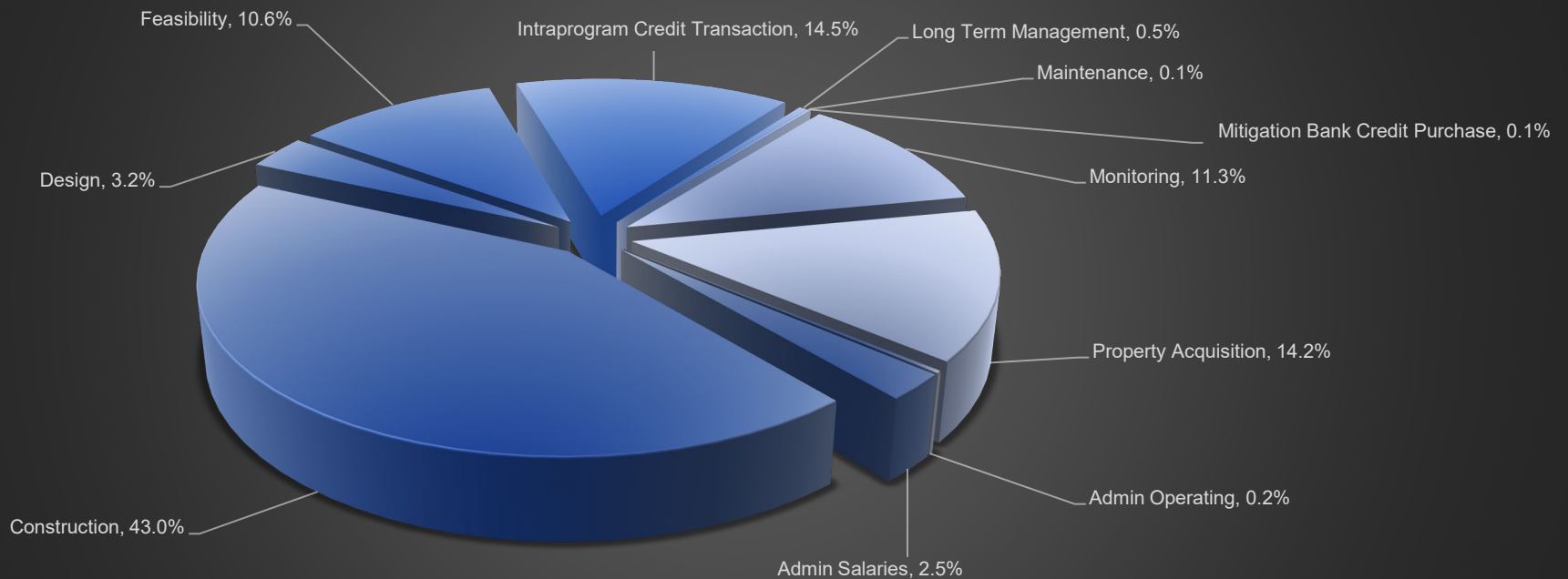
Beginning Cash	\$100,622,247.30
Revenues	\$26,715,056.46
Expenditures	\$18,003,720.43
Adjustment to Cash Basis	\$4,496.87
Allow-FV Bond Index Fund	\$(256,933.77)
Bond Index Fund	\$178,517.26
Equity Index Fund	\$1,520,025.63
Ending Cash and Bond Balance	\$110,770,695.58



Statewide Stream & Wetland ILF Expenditures

This figure summarizes the expenditures by payment type for the Statewide Stream and Wetland ILF Program. [Appendix E](#) provides a full listing of the expenditures by fund.

\$18 Million Total Fiscal 2022-2023



Statewide Stream & Wetland ILF Compliance

For fiscal year 2022-2023, the Statewide Stream and Wetland ILF Program had satisfied 100 percent of all stream requirements and 100 percent of all wetland requirements. DMS continues to implement projects to address all its permit requirements. Regulatory Addendum IV provides a detailed compliance action strategy by cataloging unit.

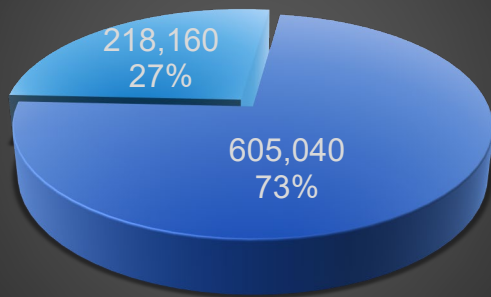
Statewide Program Type	Requirements Due (credits)	Requirements Met (credits)	Requirements Not Met (credits)	Compliance (credits)	Advance Credits Applied	Total Advanced Mitigation (Unassigned)
Stream	812,461.615	812,461.615	0.000	100.00%	212,031.502	218,160.310
Wetlands	1,573.897	1,573.897	0.000	100.00%	239.574	348.013



Statewide Stream & Wetland ILF Program Inventory

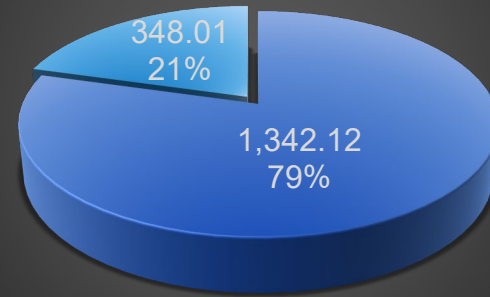
The Statewide Stream and Wetland ILF Program's gross inventory totaled 823,199.897 stream credits and 1,690.135 wetland credits. Detailed information about the Statewide Stream and Wetland ILF Program Gross and Net Inventories can be found in Appendices [F-5](#) and [F-6](#).

Stream Inventory Fiscal 2022-23



■ Applied Credits ■ Unassigned Credits

Wetland Inventory Fiscal 2022-23



■ Applied Credits ■ Unassigned Credits

Unassigned credits are available for use on future development projects.



Riparian Buffer Mitigation ILF

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COMPLIANCE &
INVENTORY



Riparian Buffer Mitigation ILF

- ❖ In fiscal year 2022-2023, DMS received 40 new customer payments into the Riparian Buffer Mitigation Program, totaling \$2,161,625.14.
- ❖ These 40 customer payments represent 1,183,342 credits of buffer mitigation – equivalent to 27 acres of buffer restoration.
- ❖ Approximately 65 percent of the fiscal 2022-23 requirements came from nineteen NCDOT projects.
- ❖ Appendix D-3 provides Riparian Buffer Program fiscal year 2022-2023 receipts and requirements.



Riparian Buffer ILF Fund Status

(29CA, 29CF, 29NE, 29TP, 29YA)

Beginning Cash	\$16, 894,054.00
Revenues	\$2,657,982.50
Expenditures	\$2,945,849.12
Bond Index Fund	\$0
Ending Cash and Bond Balance	\$16,606,187.38

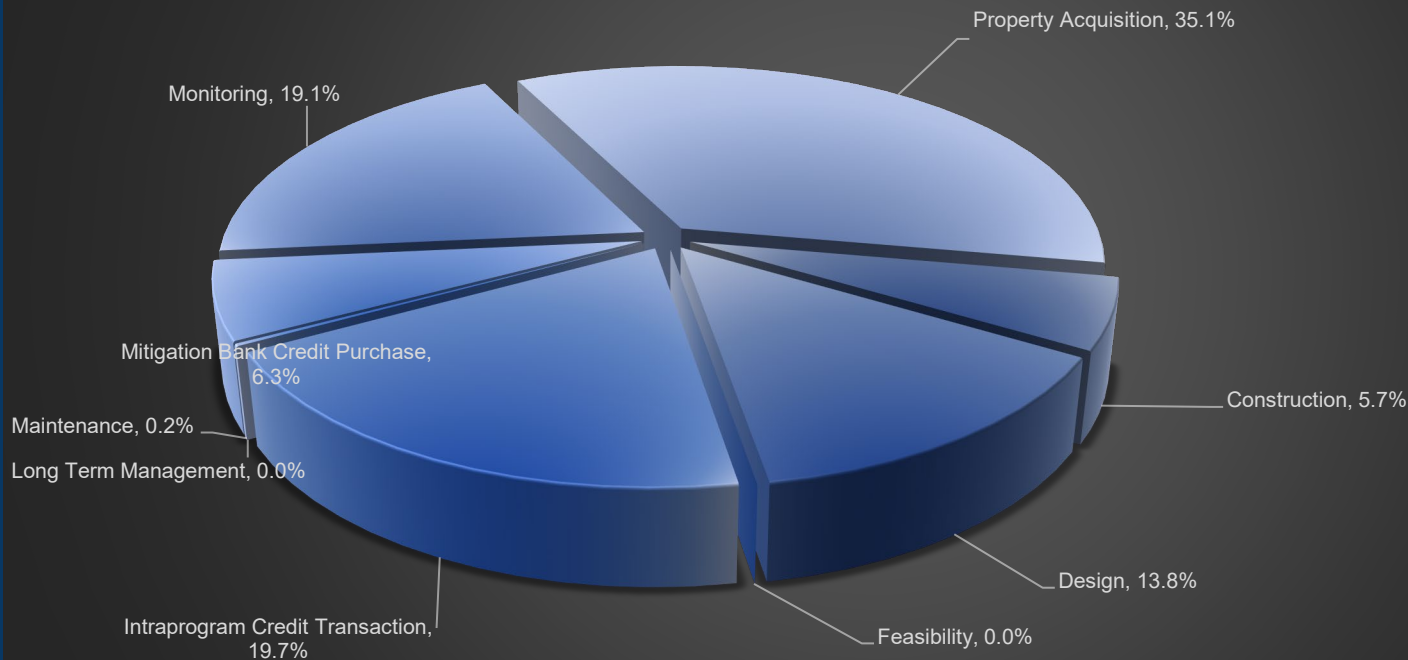
This table summarizes the finances of all five riparian buffer river basin funds.



Riparian Buffer ILF Expenditures

This figure summarizes the expenditures by payment type for the Riparian Buffer Mitigation ILF Program. [Appendix E](#) provides a full listing of the expenditures by fund.

\$2.9 Million Total Fiscal 2022-23



Riparian Buffer ILF Compliance and Inventory

Detailed information about the Riparian Buffer ILF Program's compliance action strategy can be found in [Regulatory Addendum IV](#) and about the program's gross and net Inventories can be found in Appendices [F-7](#) and [F-8](#).

Buffer Program Type	Requirements Due (credits)	Requirements Met (credits)	Requirements Not Met (credits)	Compliance	Total Advance Mitigation (Unassigned*)
Cape Fear	12,919,801.710	11,831,994.301	1,087,807.409	91.58%	267,968.012
Catawba	286,659.000	286,659.000	0.000	100.00%	200,000.000
Neuse	36,369,183.830	35,931,426.997	437,756.833	98.80%	63,480.940
Tar-Pamlico	6,028,228.910	6,028,228.910	0.000	100.00%	36,870.295
Yadkin	686,704.000	686,704.000	0.000	100.00%	12,167.433
Grand Total	56,290,577.540	54,765,013.208	1,525,564.242	97.29%	580,486.680

**Unassigned credits are available for future use on development projects.*



Nutrient Offset ILF

REQUIREMENTS

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INVENTORY



Nutrient Offset ILF

- ❖ In fiscal year 2022-2023, DMS received 63 customer payments into the Nutrient Offset ILF Program, totaling \$2,142,656.74.
- ❖ These 63 customer payments represent reductions of 42,846.391 pounds of nitrogen and 3,299.739 pounds of phosphorus. Phosphorus mitigation need more than doubled from the previous year.
- ❖ DMS approved three nutrient payment refund requests during the 2022-2023 fiscal year totaling \$24,557.38.
- ❖ Appendix D-4 provides Nutrient Offset Program fiscal year 2022-2023 receipts and requirements.



Nutrient Offset ILF Fund Status

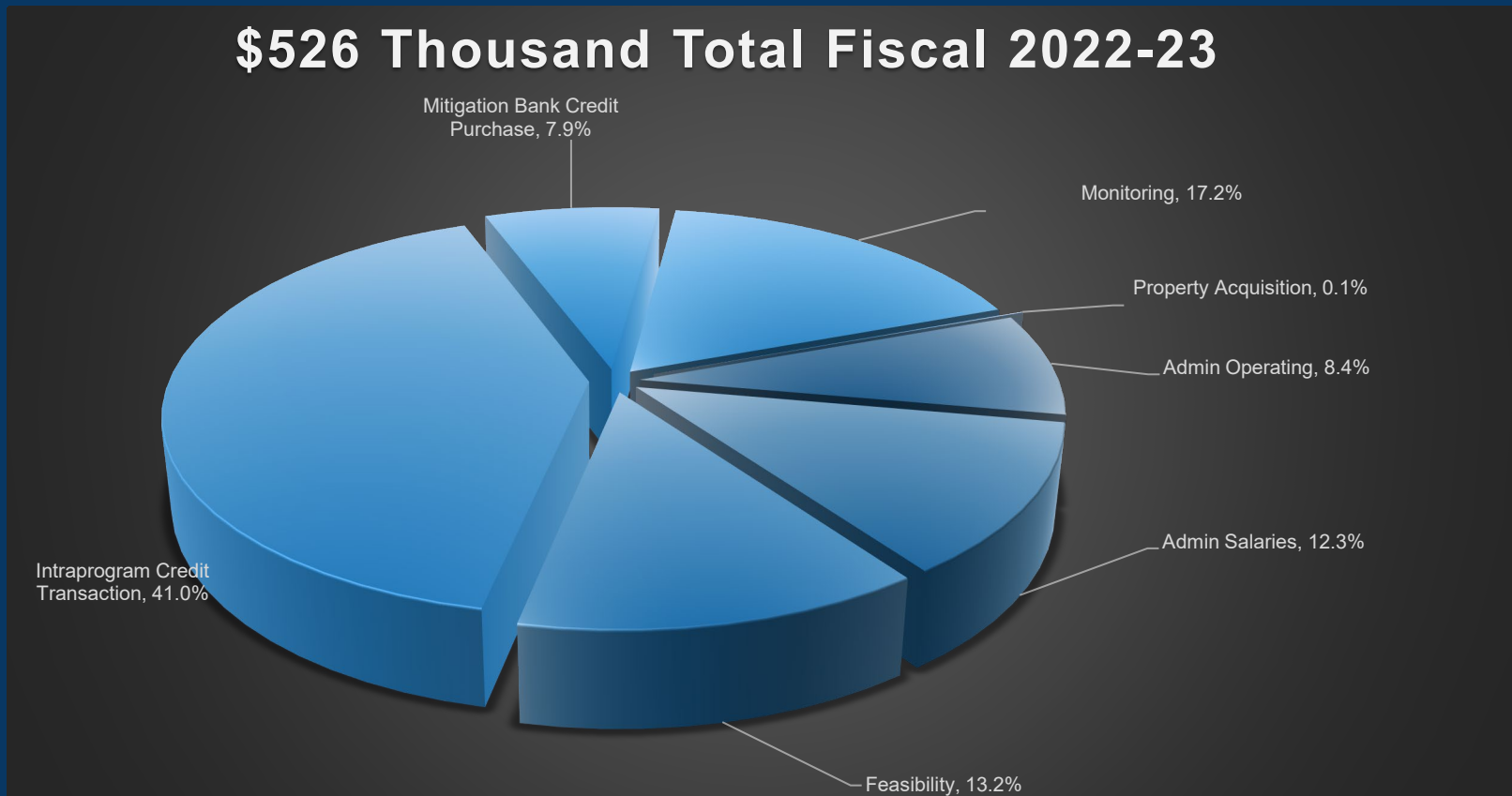
(2982-9829)

Beginning Cash	\$9,195,097.78
Revenues	\$2,342,799.20
Expenditures	\$526,875.6
Adjustment to Cash Basis	\$27,223.88
Allow-FV Bond Index Fund	\$(173,705.87)
Bond Index Fund	\$184,905.50
Equity Index Fund	\$999,942.48
Ending Cash Balance	\$10,860,585.36



Nutrient Offset ILF Expenditures

This figure summarizes the expenditures by payment type for the Nutrient Offset ILF Program. [Appendix E](#) provides a full listing of the expenditures by fund.



Nutrient Offset ILF Compliance and Inventory

DMS accepts payments for nitrogen reduction in the Neuse basin and nitrogen and phosphorus reductions in the Tar-Pamlico basin, the Falls Lake watershed and in the Jordan Lake watershed. Detailed information about the Nutrient Offset ILF Program's gross and net inventories can be found in Appendices [F-9](#) and [F-10](#), and the program's compliance action strategies can be found in [Regulatory Addendum IV](#).

Nutrient Offset Program Type	Requirements Due (credits)	Requirements Met (credits)	Requirements Not Met (credits)	Compliance (credits)	Total Advanced Mitigation (Unassigned*)
Falls Nitrogen	15,516.980	15,516.980	0.000	100.00%	65,554.805
Falls Phosphorus	5,927.913	5,005.712	922.201	84.44%	0.000
Jordan Nitrogen	53,935.810	44,381.980	9,553.830	82.29%	0.000
Jordan Phosphorus	18.670	6.440	12.230	34.49%	1,542.740
Neuse Nitrogen	1,467,490.490	1,467,490.490	0.000	100.00%	159,476.647
Tar Pamlico Nitrogen	153,247.200	153,247.200	0.000	100.00%	38,583.978
Tar Pamlico Phosphorus	12,332.229	12,332.229	0.000	100.00%	661.237
Grand Total	1,708,469.292	1,697,981.031	10,488.261	99.39%	266,183.662

**Unassigned credits are generated for use on future development projects.*



Appendices

Appendix A - Property

[A-1. Closed Fiscal Year](#)

[A-2. Cumulative Properties](#)

[A-3. Non-HQP Site List](#)

[A-4. HQP Site List](#)

Appendix B - Mitigation Bank Costs

[A-5. Riparian Buffer ILF Projects](#)

[A-6. Nutrient Offset ILF Projects](#)

Appendix C - Advance Credits

[C. Advance Credit Summary](#)

Appendix D - FY Requirements

[D-1. NCDOT FY Requirements](#)

[D-2. Statewide FY Requirements](#)

[D-3. Riparian Buffer FY Requirements](#)

[D-4. Nutrient Offset Requirements](#)

Appendix E - Expenditures

Appendix F - Inventory

Regulatory Addendum

[F-1. NCDOT Gross Assets \(no HQP\)](#)

[F-2. NCDOT Net Assets \(no HQP\)](#)

[F-3. NCDOT Gross Assets \(HQP\)](#)

[F-4. NCDOT Net Assets \(HQP\)](#)

[F-5. Statewide Gross Assets](#)

[F-6. Statewide Net Assets](#)

[F-7. Riparian Buffer Gross Assets](#)

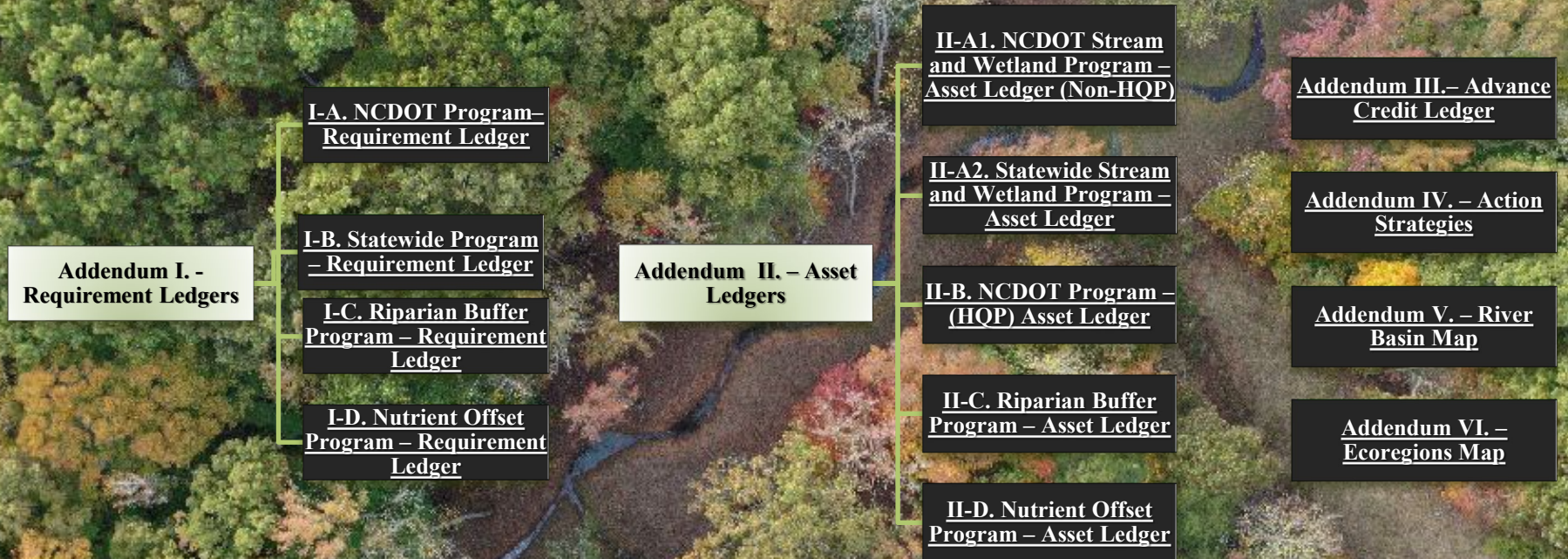
[F-8. Riparian Buffer Net Assets](#)

[F-9. Nutrient Offset Program Gross Assets](#)

[F-10. Nutrient Offset Program Net Assets](#)

click on each to download, or here for [Full Appendices](#)

Regulatory Addendum



[click on each to download, or here for Full Addendum](#)