



Upper Neuse River Basin Association (UNRBA) Stage I Existing Development Interim Alternative Implementation Approach (IAIA)

Fiscal Year 2023-2024 Summary Report

Beginning in 2018, the UNRBA began exploring an alternative option for achieving compliance with Stage I existing development nutrient load reductions under the Falls Lake Rules. To overcome some of the obstacles present in the current Rules, the UNRBA and its stakeholders developed the Stage I Existing Development Interim Alternative Implementation Approach (IAIA) with the goal of protecting and improving water quality in the watershed and lake. The concept was originally suggested by environmental advocacy groups active in the watershed and engaged with the UNRBA and its efforts. The UNRBA worked with its members, representatives from environmental groups, conservation organizations, staff at DWR, other interest groups, and regulated entities to develop an alternative approach for meeting the Stage I Existing Development Rule. This compliance framework uses financial investment in eligible projects and activities that benefit water quality and quantity both for the lake and the watershed. This approach recognizes long-term benefits and emphasizes protecting lake uses and improving water quality in the watershed and lake. The engagement of local governments that represent both lake users and those areas that drain to the lake provides a critical link between upstream actions and downstream benefits. The [IAIA Program Document](#) (approved by the EMC in January 2021) and other materials are available [here](#).

Implementation of the IAIA's first year of effort began July 1, 2021 and ended June 30, 2022 (Fiscal Year (FY) 2021-2022). The second year of the program ended June 30, 2023 (FY 2022-2023), and the third year ended June 30, 2024 (FY 2023-2024). Participants submit annual reports to DWR following each fiscal year to assess individual compliance. Copies are provided to the UNRBA for summary reporting.

This report summarizes the minimum annual requirements for each participant and the funds allocated in the IAIA Program for FY2023-2024 (Table 1). Funds allocated during previous years are also provided for tracking purposes. Each individual participant met or exceeded its minimum requirement over the combined three-year period. Over the first three years of implementation, the participants were required to cumulatively invest approximately \$4.5 million. Total investments have exceeded \$13 million over this period, nearly 3 times the required amount.

Table 2 shows the fund allocations by type and number of projects for FY2023-2024. Land conservation, green infrastructure, and stormwater control measures comprise approximately 76 percent of the investment for FY2023-2024.

Table 3 lists the project descriptions and investments allocated for each individual project implemented during this period.



**Table 1. Annual Funding Commitments and Annual Investments for the First Three Years by IAIA Participant
(Listed Alphabetically)**

Participant	Annual Funding Commitment	FY2021-2022 Funds Allocated	FY2022-2023 Funds Allocated	FY2023-2024 Funds Allocated	Cumulative Rollover the FY2024-2025
City of Creedmoor	\$16,926	\$16,926	\$16,926	\$16,926	\$0
City of Durham	\$337,587	\$960,268	\$1,750,824	\$1,371,018	\$3,069,348
City of Raleigh	\$466,081	\$1,745,485	\$740,000	\$1,199,400	\$2,286,642
Durham County	\$133,300	\$148,394	\$46,069	\$828,327	\$622,890
Franklin County	\$19,058	\$19,058	\$19,058	\$19,058	\$0
Granville County	\$100,453	\$100,453	\$100,453	\$100,453	\$0
Orange County	\$161,943	\$342,878	\$9,538	\$307,488	\$174,074
Person County	\$114,394	\$114,394	\$114,394	\$150,733	\$36,339
Town of Butner	\$23,393	\$23,393	\$23,393	\$23,393	\$0
Town of Hillsborough	\$34,221	\$41,871	\$58,730	\$35,864	\$33,802
Town of Stem	\$11,605	\$11,605	\$11,605	\$11,605	\$0
Town of Wake Forest	\$13,692	\$13,692	\$13,692	\$13,692	\$0
Wake County	\$88,968	\$1,973,493	\$135,810	\$608,450	\$2,450,849
Grand Total	\$1,521,621	\$5,511,909	\$3,040,491	\$4,686,407	\$8,673,944

Table 2. Investment Allocations by Project Type for FY2023-2024

Project Type	Funds Allocated	Number of Projects
Land conservation	\$1,708,085	5
Green infrastructure and other best management practices (BMPs)	\$1,162,378	6
Stormwater control measures (State-approved SCMs)	\$717,981	8
Project planning and administrative costs associated with the participation in the IAIA	\$613,692	2
Programmatic measures	\$170,602	4
Infrastructure Improvements	\$152,377	4
Illicit discharge detection and elimination	\$99,963	1
Floodplain restoration and reconnection	\$25,353	1
Stream and riparian buffer restoration and enhancement	\$20,943	2
Hydrilla removal and control	\$15,033	3
Grand Total	\$4,686,407	36



Table 3. Project Descriptions and Funds Allocated for FY2023-2024

Project Descriptions	Funds Allocated
South Ellerbe Stormwater Restoration Professional Services. This project will create a combination of restored streams and a wetland that will provide a natural system for reducing and removing pollutants from an urban watershed, most of which was developed prior to the adoption of stormwater regulations. Nutrient reductions will be indicated in the phase 3 construction. Additional ecosystem service benefits will include flood reduction, native plantings, increased wildlife habitat, expanded green space, and educational opportunities.	\$1,138,115
City Department of Water Management funding of hydrilla monitoring and eradication to improve water quality in the Eno River, multiple locations. Benefits include improvements to aquatic life and reduction of invasive aquatic plant	\$3,327
Invasive vegetation management within the Falls Lake watershed to preserve riparian buffer function, multiple locations. This is a three-year contract. Benefits include improvements to buffer vegetation and reduction of invasive vegetation	\$17,848
Enhancement of City's tree canopy. 262 of 584 trees were planted in the Falls Lake watershed (44% of \$13,055) Benefits include improvement of urban tree canopy in partnership with General Services. Multiple locations.	\$5,875
The City of Durham's Department of Water Management funded the Eno River Association's purchase of a 5.5-acre conservation easement to protect land in the Little River Watershed. This conservation easement buffers 1,800 linear feet of streams classified as High-Quality Waters and Nutrient Sensitive Waters. The City's Watershed Plan supports funding water supply protection and land conservation.	\$54,081
The City of Durham supported the Ellerbe Creek Watershed Association's Strayhorn Branch Stream and Floodplain Enhancement Project with \$29,072 of funding. As of this report, \$25,352.50 has been invoiced. The project is complete. The balance will be used on the Monitoring and Maintenance Plan, though hasn't been invoiced yet.	\$25,353
\$11,224.70 was spent on a video highlighting the Eno River watershed and ways to help protect the Eno River. \$10,756.61 Was spent on a video explaining the City's State of Our Streams report and explains how problems with excessive nutrients impacts the report. Because this is a City-wide video, costs were prorated to account for 47% of the City which lays in the Falls Lake watershed. \$22,646.76 was spent on a video that promotes the City's Stormwater Hotline, which supports the City's IDDE efforts. Because this is a City-wide video, costs were prorated to account for 47% of the City which lays in the Falls Lake watershed.	\$26,456
Calculations based on Memorandum: Approval of Remedying Illicit Discharges Nutrient Reduction Practice, Zimmerman, NC DEQ DWR, 2017. Source specific eliminated load method for dry weather sanitary sewer overflows (SSOs). Ongoing response program implemented by Water Management and Public Works to identify, contain, and properly dispose of SSO discharges.	\$99,963
Repair and replacement of surcharging pump stations, sewer pipes, and appurtenances currently leaking sewage, which lead to illicit discharges. More information is available on the Project Site: https://www.sgwwasa.org/i85-ssi	\$16,926
Durham County's participation in the Aquatic Weed Control Program.	\$3,327
The Neal Middle School Bioretention Project was selected as the County's first stormwater project to be funded by the Stormwater Utility for compliance with the IAIA and nutrient removal targets. The project will treat approximately 4.5 acres of previously untreated impervious area at Neal Middle School at the corner of Wake Forest Highway and Baptist Rd in Durham County. The project will also incorporate a significant educational element and will be incorporated into the Science curriculum at Neal Middle. The County received \$225,000 in funding from the Environmental Enhancement Grant Program in the North Carolina Attorney General's Office, and the	\$225,000



\$225,000 claimed as investment credit by Durham County represents a 50% local match. In FY23, the County published a request for proposals and WK Dickson was selected to design and manage construction of the project. North State Environmental was selected as the contractor in May 2024 and construction is scheduled to begin in August 2024. Educational efforts are ongoing.	
The goal of this project is to prepare a Watershed Improvement Plan for the Lick Creek, Stirrup Iron Creek, and Brier Creek watersheds. The project aims to develop and implementation plan for restoring watershed function to the watersheds. Work will include planning, conduction public meetings, assessment of current watershed conditions, formulation of watershed restoration goals, development of watershed restoration recommendations, identification of stormwater retrofit/restoration opportunities, water quality modeling, watershed modeling, hydraulic/hydrologic modeling, engineering, design, analysis, cost estimates, surveying, data collection, and preliminary plans and construction plans for stormwater projects.	\$600,000
Franklin County investment in stormwater control measures.	\$19,058
Repair and replacement of surcharging pump stations, sewer pipes, and appurtenances currently leaking sewage, which lead to illicit discharges. More information is available on the Project Site: https://www.sgwasa.org/i85-ssi	\$100,453
Orange County Hydrilla Removal: Hydrilla removal was recently added to the list of eligible activities that would count towards jurisdictional investment in the IAIA. N & P reductions have yet to be assigned for hydrilla removal, so values are TBD. These efforts will be conducted throughout the Falls Lake watershed within Orange County so specific Lat/Long is not provided. Per Memorandum from DWR on 2/10/2022, hydrilla can lead to loss of recreational use of waters and increased flood duration and intensity from obstruction of waterways. It can also negatively impact water quality and harm aquatic life by depleting oxygen levels and can increase nutrients released from sediment. For those reasons, hydrilla containment and removal has been considered as likely benefitting water quality and quantity.	\$8,379
Gravelly Hill Middle School Stormwater Wetland Retrofit: Project is a retrofit of a relic sediment basin that was never removed during the construction of Gravelly Hill Middle School to a stormwater wetland with an outdoor classroom area and educational signage. We just finished up construction of this project so total costs, N & P reductions, etc. are unknown at this time and TBD. Operation and Maintenance documents are currently being prepared and educational signage work will begin soon.	\$299,109
Construction phase at County Farm site with project schedule towards constructing a passive recreational park with stormwater controls for IAIA compliance; Special Use Permit approved to convert the site into a park. Anticipated to be completed in FY25.	\$40,737
Architectural/engineering firm selected to begin work on the design of a new SW control measure at the Rock Athletic Complex; benefits are co-location of needed SW mitigation within existing parks & getting BMPs to determine nutrient loads & their mitigation requirements. RFP issued for complete design of the County Farm site and a project schedule towards constructing a passive recreational park with stormwater controls for IAIA compliance; Special Use Permit approved to convert the site into a park. [The FY23 accounting spreadsheet accidentally omitted \$109,995 of investment; this row corrects the error from the FY23 spreadsheet and accounts for those investments in FY24 accounting].	\$109,995
Repair and replacement of surcharging pump stations, sewer pipes, and appurtenances currently leaking sewage, which lead to illicit discharges. More information is available on the Project Site: https://www.sgwasa.org/i85-ssi	\$23,393
Odie St GI Project - Design and construct stormwater green infrastructure treating impervious surface within the Odie Street Habitat for Humanity Neighborhood. Provides multiple benefits including nutrient reduction, peak flow attenuation, ecosystem benefits and includes an educational component to a historically underserved community.	\$5,746



Eno River Hydrilla Management Project - Cost share for treating invasive hydrilla plant by the Eno River Hydrilla Management Task Force. Provides multiple benefits including nutrient reductions and aquatic habitat improvement.	\$3,327
Odie St Stabilization Project - Stabilize existing ephemeral/intermittent stream channel and plant riparian vegetation; while this is a separate project, it is part of the overall Odie Street/Habitat for Humanity project. Stabilizing the stream will reduce sediment and erosion, while stabilizing the road bed along the channel.	\$3,095
DNJ Cistern Project - Install an above ground cistern and associated appurtenances at the town's Dorothy N. Johnson Community Center; water to be used for irrigation of plants and gardens within the DNJ center.	\$14,381
DNJ Rain Garden Project - Install a rain garden to treat runoff from the parking lot at the Dorothy N. Johnson Community Center; included an educational and outreach component as it was planted by volunteers.	\$6,499
Riverwalk Bioswale - convert an existing riprap lined drainage ditch along the town's Riverwalk greenway into a bioswale. Project also included an educational/public involvement component utilizing volunteers to plant as part of a sanctioned Creek Week event.	\$2,816
Repair and replacement of surcharging pump stations, sewer pipes, and appurtenances currently leaking sewage, which lead to illicit discharges. More information is available on the Project Site: https://www.sgwaso.org/i85-ssi	\$11,605
This project has helped the Town identify key projects that we can fund to contribute to increasing the water quality of the Falls Lake Watershed. Although IAIA funds were not used for this project specifically (ARPA funds were), we will be using our total five-year committed amount and more towards a water quality project in the Falls Lake Watershed. Per the report, it is likely that we will partner with other agencies that have more area within the watershed to maximize the benefit of our IAIA commitment.	\$13,692
Reporting represents water-related education and outreach activities conducted by BJCP staff for FY24. In-kind funds represent average hourly rate for BJCP staff multiplied by the total number of program hours. Education and outreach increase awareness of water resources and the importance of protecting water quality.	\$3,097
WCES Watershed Management staff performed 185 inspections in Falls Lake Watershed in FY24 to ensure SCMs are functioning properly. Properly functioning SCMs are critical to maintaining water quality in Falls Lake. SCMs provide nutrient reduction and peak flow attenuation. In-kind funds are based upon the hourly rate for staff performing SCM inspections within the Falls Lake Watershed. Watershed investment reflects hours above and beyond 2006 hours.	\$59,663
Wake County Wastewater Management staff respond to complaints and requests for investigation of malfunctioning septic systems. Complaint response is a top priority for WWM as malfunctioning septic present potential threats to both public health and water quality. In-kind funds are based upon the hourly rate for staff performing both septic complaint investigation/code case violations and septic repairs (Construction Authorization and Operation Permit) within the Falls Lake Watershed. Watershed investment reflects hours above and beyond 2006 hours.	\$81,387
Wake County completed the design for retrofit of an existing dry detention to a bioretention and installation of a new linear bioretention at Northern Wake Fire Station #2. The 8.5 ac is located on a UT to Falls Lake. The project is located in the Protected Area of Falls Lake and ~0.5mi outside of the Critical Area. Initial project construction pre-dated Falls Lake Rules. The SNAP tool estimates an 85% reduction of nitrogen and 87% reduction of phosphorous with installation of the two bioretention projects. Wake County SWCD received approval of CCAP funds to assist with future construction costs.	\$9,700
Protection of 12.11 acres in the critical water supply area of Falls Lake Watershed will protect water quality for future generations by protecting land from additional impervious cover associated with future development. The natural forested area will help recharge groundwater, slow runoff and filter pollutants.	\$454,604



The project, known as the Newsome project, consists of 177 forested acres and approximately 5,000 linear feet of stream frontage along Camp Creek, which drains into Knapp of Reeds Creek before reaching Falls Lake. The Triangle Land Conservancy will hold the easement to property and will be responsible for the stewardship and monitoring requirements.	\$740,000
The project, known as the Howerton Tract, consists of 57.51 forested acres and approximately 4,230 linear feet of stream frontage along Knapp of Reeds Creek before reaching Falls Lake. The Tar River Land Conservancy will hold the easement to the property and will be responsible for stewardship and monitoring requirements.	\$127,000
The project, known as the Howerton Tract, consists of 85.1 forested acres and approximately 7,300 linear feet of stream frontage along Rock Fork Branch before reaching the Flat River. The Tar River Land Conservancy will hold the easement to the property and will be responsible for stewardship and monitoring requirements.	\$332,400
Total	\$4,686,407