

Connecticut Wetland In Lieu Fee Program

2020 Annual Report

January 1, 2020 – December 31, 2020



A Wetland Located on the Hartland Land Trust's Bosco A Property Addition to the Newly Created Mill District Preserve. Photo Credit: Harry White, Consulting Ecologist

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1. Introduction

The Audubon Connecticut In Lieu Fee Program (ACT ILF) is an option for compensatory mitigation for unavoidable impacts to waters of the United States in the State of Connecticut. Permits are required by the U.S. Army Corps of Engineers (“Corps”) through the Clean Water Act (“CWA”) Section 404 for discharge of dredge or fill materials within “waters of the U.S.” and through Section 10 of the Rivers and Harbors Act which addresses structures or work in or affecting navigable waters of the US. The Corps requires that aquatic resource functions and values lost due to the effects of any regulated activity be replaced through compensatory mitigation, after addressing avoidance and minimization of impacts.

The ACT ILF program contains six (6) service areas that cover the entire state of Connecticut. This report outlines the ACT ILF program activities from January 1, 2020 – December 31, 2020.

2. Impacts & Fees Received

During the reporting period, 0.27 compensatory mitigation credits were sold to seven applicants for 0.57 acres of wetland impacts, for a total of \$100,018.59. The impacted acreage was located in the Connecticut River, Housatonic River, Southeast Coast, Southwest Coast, and Thames River Service Areas. There were no credit sales in the South-Central Coast Service Area during the reporting period.

The tables in **Appendix A** provide information on ILF payments, impact types and amounts, and funds available for future ILF projects.

Table A-1 provides a full list of all the permitted impacts that have generated ILF payments during the reporting period. Included in this table is the applicant, date the payment was received, permit numbers, town of impact, habitat type impacted, required amount of compensatory mitigation, and the amount of the payment. This table is broken down by service area. Service areas roughly correspond to CT’s major watershed basins with some extralimital adjustments. CT ILF Service Areas are depicted in **Appendix B**.

Table A-2 shows the financial account ledger for the ACT ILF program. Included in this table is the starting balance, payments received, administrative fees collected, interest earned, disbursements made and the remaining account balance. This table is also broken down by service area.

3. Project Implementation

3.1 2020 Project Round

3.1.1 Projects Funded in 2020

No projects were awarded funding during the 2020 calendar year, as no 2020 ILF Grant round was offered, due to lack of sufficient funds available to offer meaningful grants.

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3.2 Update on Prior Years' Projects:

3.2.1 Status of Active Projects Awarded in 2017

Wimisink IBA Expansion

The scope of fieldwork involving radio-tracking for reptiles of conservation concern that was scheduled to occur again in 2020, was reduced due to COVID-19 and state restrictions on fieldwork. Some limited telemetry data was conducted by the state's contract herpetologist later in the season after state restrictions were lifted. All monitored specimens did receive new transmitters. One new adult female specimen was encountered during the herpetologist's survey efforts and fitted with a transmitter. Only two surveys for nests were conducted due to COVID restrictions. No nests were found in 2020, but the survey effort was very light. Minimal habitat restoration was conducted (e.g., no additional shrubs were removed to reestablish early successional wet meadow). The CTDEEP consulting herpetologist did continue to manage the already established early successional habitats. This management effort was performed three times throughout the season.

3.2.2 Status of Active Projects Awarded in 2018

Bosco Property Acquisition – Hartland, CT

This 52-acre property contains extensive forest wetlands bisected by an upper perennial watercourse that drains into the West Branch of the Upper Farmington National Wild & Scenic River. This new acquisition was combined with a bordering 65-acre parcel (i.e., the Stoeke Property) that was purchased through a prior ACT-ILF grant in 2017 to form what will be known as the "Mill District Nature Preserve". Furthermore, another preserve owned by HLT, a preserve owned by Audubon Connecticut and a portion of the upper Tunxis State Forest block are adjacent to this newly formed preserve, creating a preserved land complex of several hundred acres. The response from the Hartland community has been overwhelmingly supportive. Preserving this property in perpetuity provides another layer of protection to the pristine wetlands within the preservation complex and counters forest fragmentation and sensitive habitat loss. HLT and AudubonCT executed a project agreement on July 15, 2020. On December 15, 2020 Hartland Land Trust (HLT) closed on its second parcel purchased with funds from ACT-ILF.

Simpson Property Acquisition – Bethany, CT

No progress was made toward completion of a project agreement needed for property closure as the project was tied up in Municipal Probate Court during a good part of 2020.

Paulann Sheets Property Acquisition – North Stonington, CT

In 2018, Avalonia Land Conservancy was selected for a grant under the ACT-ILF Program in the amount of \$11,453.00 in connection with its acquisition of the Paulann Sheets Property in North Stonington, Connecticut. In 2019, a Project Agreement was prepared for this project, as well as an Exhibit to the Project Agreement that sets forth the form of Conservation Restriction which will be required in the deed conveying the property to Avalonia Land Conservancy. Drafts of these documents were sent in November 2019 for

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Avalonia to review. A copy of a revised Conservation Restriction was sent to the CTDEEP in 2020 for their review, as the majority of the funding used to acquire this property was being provided by the CTDEEP via the Open Space and Watershed Lands Acquisition (OSWLA) Grant Program. The attorneys at Hinkley Allen LLP attempted to work with the CTDEEP personnel to align the CTDEEP OSWLA Conservation Easement language with language amenable to the CT ILF Program (i.e., strengthen language that would focus on protecting wetland and watercourse resources as the first priority, rather than the main focus being the enhancement of outdoor recreation). This issue remained unresolved by the close of 2020.

3.2.3 Status of Projects awarded in 2019

Weston/Wilton Forest Block Project: Fromson/Strassler Property Acquisition – Weston & Wilton, CT (Southwest Coast Service Area)

The Aspetuck Land Trust (ALT) was awarded \$79,300 out of a total project cost of \$1,143,750 needed to purchase the 85-acre Fromson/Strassler property in Wilton and Weston, CT for preservation in perpetuity. The property lies adjacent to the ALT's Honey Hill Preserve which was recently expanded to 119 acres with the acquisition of the Belknap Parcel (in part) by an ACT-ILF grant in 2017. The Honey Hill Preserve is a key parcel in the ALT's Weston Forest Block Project - a local initiative that aims to protect a 705-acre forest block on the Weston/Wilton border. The Weston Forest Block Project effectively connects the Norwalk River Valley and Wilton Land Trust preserved lands to the west with ALT protected lands, and other lands to the east including the 1,756-acre Lucius Pond Ordway/Devil's Den Preserve, and the 1,009-acre Trout Brook Valley Conservation Area.

The Fromson/Strassler property contains palustrine forested seasonally saturated wetlands, riverine upper perennial watercourses that are headwater tributaries to the West Branch of the Saugatuck River, and at least five vernal pools. The property is known habitat for two species listed as "Special Concern" in the CT Endangered Species Act and provides habitat for over a dozen other species identified as "Greatest Conservation Need" in the CT Wildlife Action Plan.

The ALT was awarded a \$625,000 OSWLA Grant toward the purchase of this property. They continued to raise the remainder of the acquisition funds via a private donor capitol campaign throughout 2020, with a goal of closing on the property in 2021.

Mill River Protection Project – Cheshire, CT (Southcentral Service Area)

The Cheshire Land Trust was awarded \$200,000 toward the total project cost of \$678,080 for the acquisition of 45.14 acres of land located off Fenn Road in the Town of Cheshire, CT during the 2019 Grant Round. The site is referred to as the Fenn Road (or "Ricci") property and lies adjacent to the 184-acre DeDominicis Preserve. It lies on the east side of Cheshire and is bisected by the Mill River. The property contains palustrine forested and scrub/shrub wetlands, a reach of the Mill River (riverine upper perennial unconsolidated bottom) and associated tributary streams, and a portion of the Town of Cheshire's aquifer protection zone.

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AudubonCT, the Cheshire Land Trust, the Regional Water Authority, and the Town of Cheshire worked to complete the requisite ILF Project Agreement between the Town and AudubonCT on July 16, 2020. They closed on the property on July 19th, 2020. The Town of Cheshire had yet to complete a conservation and management plan for the property by the close of 2020.

Ayer's Point Acquisition – Old Saybrook, CT (CT River Service Area)

This parcel lies adjacent to Hyde's Point Creek and the CTDEEP-owned Ferry Creek Wildlife Management Area (WMA) in the Ayer's Marsh system. The Old Saybrook Land Trust (OLT) requested and was awarded \$176,000 towards the project cost of \$304,000 to acquire this parcel for preservation in perpetuity. It is estimated that five to six acres of palustrine emergent marsh lie on this property.

During the 2020 calendar year, OLT continued to raise the balance of funding needed to reach a purchase price of \$299,000 (the price that the property was listed at in 2019). By the end of 2020, the OLT was expecting to win a critical \$50,000 grant from North American Wetlands Conservation Act (NAWCA) which would go specifically toward the purchase of the property. By the close of 2020, the property remained for sale by owner.

421 Bush Hill Road Acquisition – Manchester, CT (CT River Service Area)

The Manchester Land Conservation Trust (MLCT) requested and was awarded \$150,000 towards the project cost of \$154,500 to acquire a 21.24-acre forested parcel at 421 Bush Hill Road in Manchester, CT. Their ILF request was for the purchase price of the parcel which the MLCT wanted to acquire for conservation in perpetuity. There is an estimated four acres of palustrine forested wetlands on the property. In addition, an intermittent watercourse that is an upstream headwater tributary to Porter Brook, transects the property.

MLCT closed on this property at the end of March 2020. The MLCT completed a Conservation and Management Plan by the end of December 2020. The property has been named the **Alba Pavan Nature Preserve** and will be managed by the MLCT for conservation and passive nature-based recreation (hiking, birding, nature interpretation, etc.).

Peltier Property Acquisition – Franklin/Sprague, CT (Thames River Service Area)

The Friends of the Shetucket River Valley (FoSRV) was awarded \$77,000 out of a total project cost of \$250,000 for the acquisition of a 66.36-acre forested parcel that contains wetlands, intermittent streams, and vernal pools. The applicant has acquired \$158,200 to date via the CTDEEP OSWLA grant program.

In 2020, the FoSRV contracted with CLA Engineer's to commence a Conservation and Management Plan for the property. About the same time, they solicited an appraisal update of the original appraisal that was completed in 2017. However, toward the end of 2020, a new administrator was elected in the Town

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of Sprague and the new administrator was not favorable to spending matching municipal funding on open space acquisition (the balance of the money needed to reach the purchase price). This has put the acquisition of the property in danger, and progress on further work was halted until the issue could be resolved.

Tri-town Ridgeline Forest Preserve (Dyer Property Acquisition) – Preston, Griswold, & North Stonington, CT (Thames River Service Area)

The Avalonia Land Conservancy was awarded \$12,977 toward a total project cost of \$941,847 for the acquisition of the Dyer Property. This project involved the preservation of 379 acres of upland buffering aquatic resources and 30 acres of palustrine forested wetland. The property was acquired using a bridge loan from The Conservation Fund. Avalonia Land Conservancy continued to actively fund raise during 2020 in order to be able to pay off the low-interest loan before their loan deadline of March 2021. This parcel would provide significant linkage to existing preserved land in the area such as the CTDEEP-owned Patchaug State Forest property, a large private parcel of land subject to a conservation easement in favor of The Nature Conservancy, and other Avalonia Land Conservancy property. ACT-ILF funds from both the Thames River and Southeast coast service areas were requested and granted despite the property being completely within the Thames River service area. This exception was approved by the ACOE as the holding time (i.e., three years) for funding in the Southeast Coast Service Area was due to expire, and the money that had accrued in that service area was not enough to generate any meaningful projects.

Mono Pond State Park Expansion – Columbia and Hebron, CT (Thames River and Connecticut River Service Areas)

The Trust for Public Lands (TPL) was granted \$90,000 from the ACT-ILF program toward the acquisition of a 303-acre parcel adjacent to Mono Pond State Park during the 2019 project round. TPL was to broker this acquisition upon which the property would be transferred to the State of Connecticut for expansion of the existing Mono Pond State Park. Approximately 229 acres lay in the Town of Columbia and 74 acres lay in the Town of Lebanon. Most of the property lies in the Thames River service area. The total project cost was reportedly \$757,000 (which included the purchase price of \$625,000). Other funding sources include the State of Connecticut, the United States National Park Service funding (\$500,000), the Town of Columbia open space fund (\$40,000), and the Town of Lebanon open space fund (\$25,000). Private fundraising was to provide the balance of funding needed toward this acquisition.

A teleconference was held on March 10, 2020 to discuss ACT-ILF program requirements associated with the grant award, including the preparation of a Project Agreement, establishment of a conservation restriction and the preparation of a Conservation and Management Plan. As a result of the meeting, the CTDEEP was unable to commit to these requirements and TPL had to forfeit the grant. The funds thus remain in the ACT-ILF program available for future projects.

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Section 4.0 Stream Credit Assessment

Since commencement of the program in 2013, the ACT-ILF Program has sold and continues to sell credits for stream impacts as follows: \$100/linear foot for intermittent stream channel, or \$600/linear foot for a perennial stream. In 2020, the Corps requested the ACT-ILF Program to determine if credit sales for stream impacts were sufficient to cover the actual costs of stream impact mitigation via restoration, enhancement, or creation (e.g., relocation). However as of the close of 2020, the ACT-ILF Program had only funded three stream restoration or enhancement projects. These included the Indian River Culvert Removal Project in Orange, CT (2016) which involved the removal of an undersized culvert from the project site; the Salmon Kill Creek Restoration Project in Salisbury, CT (2016) which involved the enhancement of an existing perennial stream channel along two separate reaches; and the Dolan Pond Fishway project in Centerbrook, CT (2017) which involved the installation of a fishway at the dam on Dolan Pond.

The Indian River Culvert Removal Project in Orange, CT involved the removal of an old farm crossing and undersized culverts that effectively blocked fish passage on the Indian River. An ACT-ILF grant in the amount of \$8,000 funded the removal of the culverts, restoration of the stream bed and banks and riparian plantings. The total project cost was \$8,000 for approximately 50 linear feet of direct stream restoration. This project cost of perennial stream restoration was thus calculated as **\$160/linear foot**. This cost is not representative of true construction costs, as the project applicant – the Town of Orange Conservation Commission – was able to get the labor and equipment costs donated by the Town of Orange.

The Salmon Kill Creek Restoration Project in Salisbury, CT resulted in various stream bed and bank restoration “treatments” that favored attributes that would enhance coldwater fisheries habitat. The various treatments (i.e., stream barbs, log toes, channel realignment, floodplain development, and plantings) were collectively implemented at two sites totaling 350 linear feet. The total project cost was \$180,000. This project cost of perennial stream restoration was thus calculated as **\$514/linear foot**.

The Dolan Pond Fishway project in Centerbrook, CT resulted in the installation of a pre-fabricated fishway on the Dolan Pond Dam. The ACT-ILF award toward the total project cost was \$150,000 for the installation of a 15 linear-foot fishway and associated stream bed improvements to connect the fishway. The overall project covered approximately 20 to 25 linear feet of stream channel. The project cost of perennial stream restoration was thus calculated as approximately **\$6,000 / linear foot**.

Additional details of these three projects are provided in the *5th Year Assessment Report*.

Since only three stream restoration / enhancement projects had been funded via the ACT-ILF Program by 2020, and costs were widely variable due to the differences in project scope and objectives, it was apparent that a larger data set was needed to more accurately assess the cost of stream restoration on a per linear foot basis.

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To supplement the results of these three projects and build a larger data set, requests for information were sent to over a dozen entities that represent the industry (engineering consultants, regulatory agencies, and contractors). Again, due to the variability in site conditions, magnitude and scale, and goals and objectives of the different restoration projects, the costs associated with these projects varied greatly as well. Even among the same project, bids for the proposed work could vary significantly. For instance, one particular engineering firm shared the results of eight bids received for a dam removal and stream restoration project in Litchfield County, CT. The bids ranged from \$1.2 million to \$2.5 million for construction costs only. The engineer’s cost estimate was \$1.75 million, well within the range of the bids received. These costs included a stream restoration component, which, when separated out from other costs and calculated specifically for cost per linear foot of stream restoration, equated to a range of **\$459 to \$1,097 / linear foot** among the bids submitted. It should be noted that the winning bidder was a firm that was headquartered in the town of the project and they had their own abundant source of stone. Consequently, they were able to cut their price substantially. The engineer’s design and permitting costs and bidding and construction oversight costs were estimated to add an additional \$284.50 / linear foot. Therefore, the total project cost was estimated to range from **\$744.15 – \$1,381.50 / linear foot**.

Another engineering firm provided data from a specific project previously completed in western MA (Hampshire County). The data for this project, completed in June 2018 with a total restoration length of 450 feet, was summarized in **Table 1**. For jobs that involved dam restoration or modifications for the benefit of fish passage, we received a data set from yet a third CT-based engineering firm for seven stream restoration projects with the objective of restoring fish passage (i.e., installation of a steep pass fishway, rock ramp, or pool and weir). This data is presented in **Table 2**.

Table 1. Project Costs Associated with an Exemplary Stream Restoration Project in Western MA.

Phase Costs	Total	Cost/Linear Foot
Soft Costs (Design, permitting, Geotech, survey):	\$188,000	\$420 / LF
Construction Costs:	\$597,000	\$1,330 / LF
Total Project Costs:	\$785,000	\$1,750 /LF

Data provided by GZA GeoEnvironmental, Inc.

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Table 2. Costs Associated with Various Fish Passage Restoration Alternatives in Southern New England

Fish Passage Type	Fish Passage (Dam)Height	Fish Passage Length	Consulting Cost	Construction Cost	Total	\$/SF	\$/LF
Denil (Steppass)	6	60	\$ 76,500	\$ 183,181	\$ 259,681	\$ 721	\$ 4,328
Denil (Steppass)	8	60	\$ 155,000	\$ 250,000	\$ 405,000	\$ 844	\$ 6,750
Denil	7	110	\$ 88,000	\$ 220,000	\$ 308,000	\$ 400	\$ 2,800
Denil	12	330	\$ 407,000	\$ 1,036,000	\$ 1,443,000	\$ 364	\$ 4,373
Rock Ramp	6	350	\$ 442,000	\$ 1,682,750	\$ 2,124,750	\$ 1,012	\$ 6,071
Rock Ramp	4	175	\$ 433,000	\$ 854,000	\$ 1,287,000	\$ 1,839	\$ 7,354
Pool & Weir	4	100	\$ 78,000	\$ 325,000	\$ 403,000	\$ 1,008	\$ 4,030
		Average	\$ 239,929	\$ 650,133	\$ 890,062	\$ 884	\$ 5,101
		Minimum	\$ 76,500	\$ 183,181	\$ 259,681	\$ 364	\$ 2,800
		Maximum	\$ 442,000	\$ 1,682,750	\$ 2,124,750	\$ 1,839	\$ 7,354

Data provided by Fuss and O'Neill

This source warned that these jobs (dam removal/modification with fish passage) are “*always more costly because they involve some level of concrete removal and installation to support the design. Also, there is always some excess sediment management in these projects*”.

For project costs involving stream restoration or enhancements for fisheries resources but without dam removal, we requested information from Trout Unlimited (TU). TU responded by saying they were in the process of collecting average cost data for specific restoration treatments for past NY and CT projects but were willing to share what they had collected to date which is presented in **Table 3**. From this data set we see that there is a big cost disparity among treatments, and a restoration project that incorporates multiple treatments may result in a cost per linear foot that far exceeds the amount generated by credit sales, especially once engineering design, construction management, permitting and other obligatory project costs are added.

An even larger data set was sent to us from the MA ILF Program. It contained data collected by the MA Division of Ecological Restoration and is included as **Appendix C**. The average cost per linear foot “opened/restored” reported for ten projects completed in western Massachusetts was **79.87 / linear foot**. For eleven projects in coastal Massachusetts, the average cost per linear foot of stream channel “opened/restored” was **\$656.13 / linear foot**. These project costs were for construction only and did not include the added costs of permitting and design. Many of these projects included dam removal or breaching in some way.

We requested data from the Connecticut Department of Transportation (CTDOT) for costs associated with work related to channel restoration, but we were told that retrieving that data would not be an easy task and that the CTDOT could not commit staff time to retrieving the data at this time. Given the amount of intersection realignment and improvement projects, culvert and bridge replacement, and road reconstruction projects the CTDOT completes on a yearly basis, they likely would be the source of the largest data set for stream relocation costs in Connecticut. Future attempts to solicit this data may be warranted.

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Table 3. Estimated Cost Per Treatment to Enhance Streams for Fisheries

Restoration Treatment	CT	NY
Roughened log toe (linear feet)	\$350.00	Not Yet Available
Toe wood (linear feet)	\$224.00	\$185.00
Boulder cluster (3 rocks)	\$2,800.00	Not Yet Available
Instream grade control (per)	Not Yet Available	\$5,500.00
Engineered log Jam (per)	\$6,000.00	Not Yet Available
Individual log structure (per)	\$2,600.00	Not Yet Available
Wood addition (mile)	Not Yet Available	Not Yet Available

Data Provided by Trout Unlimited

In summation, it appears that the \$600 / linear foot of perennial stream impact assessed to applicants that would like to purchase stream credits via the ACT-ILF Program would be sufficient to fund some stream restoration and enhancement projects via the grant program, but not others. Certainly, for projects involving fish passage (dam removal, fishway installation, step pool or rock ramp construction or other fish passage alternatives) it would likely be insufficient. The \$600 / linear foot costs generated via the sale of credits would also not generate enough revenue to cover all available treatments for coldwater fisheries habitat enhancements but would be sufficient to cover the linear foot costs of riparian plantings, grading, roughened log toe, and toe wood treatments. Given that the program is designed to leverage additional funding from outside sources, the current cost assessments are likely sufficient at this time to generate enough money to fund future restoration via a matching fund grant initiative similar to how the ACT-ILF Program is currently operating.

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Appendix A – Financial Reporting

Table A-1: Payments Received by Service Area (January 1, 2020 – December 31, 2020)

Service Area	Applicant	Date Payment Received	Corps Permit #	Town	Acres of Impact	Habitat Type	Amount of Payment
Thames River	CT DOT	3/12/2020	NAE-2019-01466	Stafford	0.27	PFO/PSS	\$92,404.18
Southwest Coast	Town of Monroe	6/26/2020	NAE-2016-02046	Monroe	0.08	PFO/PSS	\$33,525.00
Connecticut River	CT DOT	6/26/2020	NAE-2019-01752	Old Saybrook	0.01	E2EM1	\$6,318.75
Southwest Coast	Baywater Properties (Boston Post Rd. Old Kings Hwy, Corbin Dr.	8/10/2020	NAE-2018-00624	Darien	0.13	R4SB3	\$53,100.00
South-Central Coast	City of New Haven	10/1/2020	NAE-2018-02370	New Haven	0.09	E2	\$28,436.65
Southeast Coast	Groton Long Pt. Association	10/22/2020	NAE-2016-01165	Groton	0.02	SAV	\$3,299.58
Thames River	CTDOT	12/4/2020	NAE-2019-03272	Thompson	0.03	PSS1E	\$10,695.74
							\$ 227,779.90

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Table A-2: Financial Account Ledger by Service Area (January 1, 2020 – December 31, 2020)

Service Area	January 1, 2020 Account Balance	Reporting Period Activity					Dec. 31, 2020 Account Balance
		Payments Received	Administrative Fee	Interest Earned *	Disbursements	Net Activity	
Connecticut River	\$395,500	\$6,319	\$1,264	\$1,072.17	\$255,500	(\$249,373)	\$146,127
Housatonic River	\$203,867	\$0	\$0	\$543.97	\$0	\$544	\$204,410
South-Central Coast	\$323,134	\$28,437	\$5,687	\$938.09	\$195,000	(\$171,313)	\$151,822
Southeast Coast	\$13,173	\$3,300	\$660	\$43.95	\$0	\$2,684	\$15,857
Southwest Coast	\$108,740	\$86,625	\$17,325	\$521.29	\$0	\$69,821	\$178,562
Thames River	\$220,559	\$103,100	\$20,620	\$863.61	\$0	\$83,344	\$303,903
-	\$1,264,973	\$227,780	\$45,556	\$3,983	\$450,500	(\$264,293)	\$1,000,680

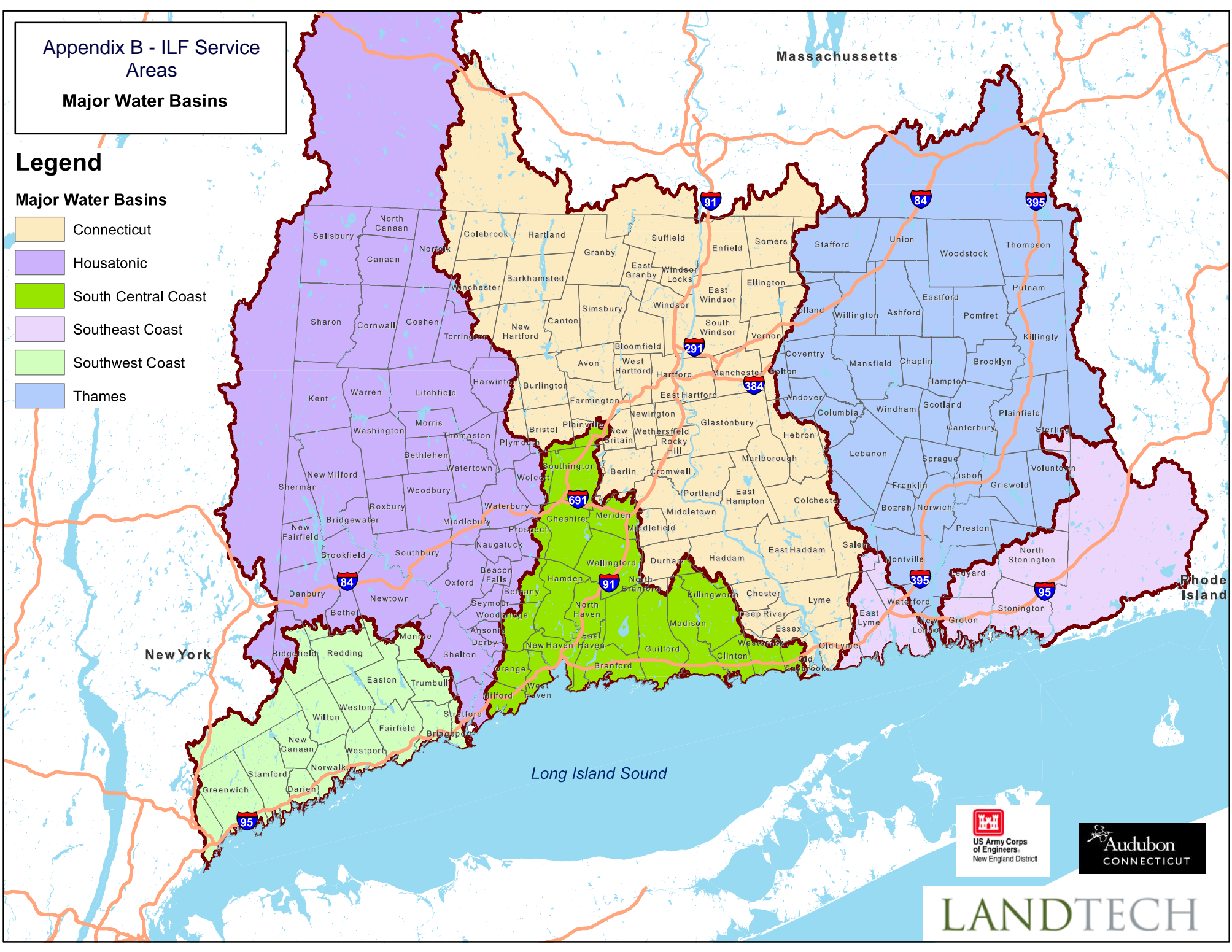
*Interest earned is pro-rated based on beginning balances and FY19 payments for each service area. All interest is added to Direct Project Funds.

Appendix B - ILF Service Areas
Major Water Basins

Legend

Major Water Basins

- Connecticut
- Housatonic
- South Central Coast
- Southeast Coast
- Southwest Coast
- Thames



Appendix C. Data from MA Dept. of Fish and Game Division of Ecological Restoration's Priority River Restoration Projects 2006-2015 for which we have reliable cost data.

Project	Town	Completion date	Base project cost	Long term maintenance 3% of base cost	Contingency 10% of base cost	Monitoring 10% of base cost	Admin overhead 20% of base cost	Total project cost (E-I)	Width of dam/culvert (ft)	Cost / foot (width)	Distance opened/restored (ft)	Cost / foot of stream opened	ILFP Region
Ballou Dam	Becket	2006?	417,000.00	12,510.00	41,700.00	41,700.00	83,400.00	596,310.00	50.00	11,926.20	1,320.00	451.75	Berkshires
Silk Mill Dam	Becket	?	317,404.00	9,522.12	31,740.40	31,740.40	63,480.80	453,887.72	50.00	9,077.75	42,240.00	10.75	Berkshires
Briggsville Dam	Clarksburg	2010	665,057.00	19,951.71	66,505.70	66,505.70	133,011.40	951,031.51	160.00	5,943.95	268,513.00	3.54	Berkshires
Thunder Brook Dam	Cheshire	2012	192,500.00	5,775.00	19,250.00	19,250.00	38,500.00	275,275.00	80.00	3,440.94	12,144.00	22.67	Berkshires
Gravesleigh Pond Dam	Pittsfield	2012	400,000.00	12,000.00	40,000.00	40,000.00	80,000.00	572,000.00	60.00	9,533.33	42,240.00	13.54	Berkshires
Kinne Brook Dam	Cummington	2014	48,989.00	1,469.67	4,898.90	4,898.90	9,797.80	70,054.27	40.00	1,751.36	52,800.00	1.33	Berkshires
Bronson Brook crossing	Cummington	2006*	370,000.00	11,100.00	37,000.00	37,000.00	74,000.00	529,100.00	40.00	13,227.50	23,760.00	22.27	Berkshires
Amethyst Brook Dam	Pelham	2012	375,000.00	11,250.00	37,500.00	37,500.00	75,000.00	536,250.00	160.00	3,351.56	2,640.00	203.13	CT River
Wekepeke Brook Restoration	Lancaster	2014	324,979.00	9,749.37	32,497.90	32,497.90	64,995.80	464,719.97	100.00	4,647.20	95,040.00	4.89	Worcester
Dam 1 (upper - Phillipston)	Athol	2012	143,600.00	4,308.00	14,360.00	14,360.00	28,720.00	205,348.00	450.00	456.33	3,168.00	64.82	Worcester
Averages (MA West)			325,452.90					465,397.65		6,335.61		79.87	
Eel River / Sawmill Pond	Plymouth	2010	534,000.00	16,020.00	53,400.00	53,400.00	106,800.00	763,620.00	55.00	13,884.00	15,840.00	48.21	Coast - centr.
Wapping Road Dam	Kingston	2011	468,043.00	14,041.29	46,804.30	46,804.30	93,608.60	669,301.49	40.00	16,732.54	116,160.00	5.76	Coast - centr.
Off Billington Street	Plymouth	2014	1,500,000.00	45,000.00	150,000.00	150,000.00	300,000.00	2,145,000.00	110.00	19,500.00	528.00	4,062.50	Coast - centr.
Third Herring Brook (YV)	Hanover	2014	323,000.00	9,690.00	32,300.00	32,300.00	64,600.00	461,890.00	40.00	11,547.25	1,320.00	349.92	Coast - centr.
Plymco Dam	Plymouth	2015	2,100,000.00	63,000.00	210,000.00	210,000.00	420,000.00	3,003,000.00	52.00	57,750.00	2,640.00	1,137.50	Coast - centr.
Ox Pasture Brook	Rowley	2009	120,916.00	3,627.48	12,091.60	12,091.60	24,183.20	172,909.88	70.00	2,470.14	2,640.00	65.50	Coast - north
Curtis Pond Dam	Middleton	2012	270,000.00	8,100.00	27,000.00	27,000.00	54,000.00	386,100.00	200.00	1,930.50	2,640.00	146.25	Coast - north
Red Brook Phase 1	Wareham	2006	46,901.00	1,407.03	4,690.10	4,690.10	9,380.20	67,068.43	100.00	670.68	528.00	127.02	Coast - south
Red Brook Phase 2/3	Wareham	2008-2009	197,500.00	5,925.00	19,750.00	19,750.00	39,500.00	282,425.00	200.00	1,412.13	14,256.00	19.81	Coast - south
State Hospital Dam	Taunton	2012	1,058,450.00	31,753.50	105,845.00	105,845.00	211,690.00	1,513,583.50	250.00	6,054.33	1,320.00	1,146.65	Coast - south
Whittenton Mill Pond	Da Taunton	2013	400,000.00	12,000.00	40,000.00	40,000.00	80,000.00	572,000.00	160.00	3,575.00	5,280.00	108.33	Coast - south
Averages (MA Coastal)			\$ 638,074					\$ 912,445.30		\$ 12,321		\$ 656.13	

*cost updated to 2014 dollars

Please contact Beth Lambert, Ecological Restoration Program Manager, at beth.lambert@state.ma.us or 617-626-1526 with any questions.

