

TINGUE DAM BYPASS CHANNEL
NAUGATUCK RIVER, CONNECTICUT

Application for NOAA Coastal and Marine Habitat Restoration Project Grants
Under the American Recovery and Reinvestment Act of 2009

1. Project Summary

Applicant: Connecticut Department of Environmental Protection
Bureau of Water Protection and Land Reuse, Planning and Standards Division
79 Elm Street, Hartford, CT 06106-5127

Project Title: Tingue Dam Bypass Channel Construction on the Naugatuck River, Seymour, CT

Site Location: Naugatuck River, Seymour, CT Lat. 41deg 23min 35sec
Long. 73deg 04min 34 sec

Land Owner: Town of Seymour, CT

Project Start Date: July 1, 2009

Construction Start Date: October - November, 2009 (Detailed schedule in text below)

Number and types of jobs created or maintained and anticipated duration:

Estimated to create or maintain construction, engineering, landscaping, and supporting services jobs involving 135 people and 36,569 hours of work.

Coastal and marine habitats to benefit from the project: Riverine Migratory Corridors, diadromous fish habitat. The removal (bypass) of Tingue Dam, an in-stream barrier to diadromous fish passage on the Naugatuck River, will immediately restore access to 32 miles of essential habitat for spawning, and juvenile rearing and growth of American shad, blueback herring, alewife and American eel, four species of regional and national significance. The amount of miles in the mainstem between the Tingue Dam and the upstream Plume-Atwood Dam (targeted for eventual removal) is 24 miles and the amount of habitat initially opened on seven tributaries will be 8 miles, which will also increase when several targeted dams are eventually removed. The Naugatuck River watershed (310 square miles) joins the Housatonic River eight miles upstream from Long Island Sound, near the head of tide (Figures 1 and 2). In turn, the Housatonic River basin is the largest watershed with the greatest amount of historical diadromous fish freshwater habitat in the western Long Island Sound. Passage around the Tingue Dam complements a series of eight dam removal and fish passage projects, including six on the Naugatuck River from Ansonia, CT, near the confluence of the Naugatuck and Housatonic Rivers, upstream approximately 23 miles to Thomaston, CT, and two on tributaries. The Naugatuck River, once dominated by untreated sewage and industrial waste, has undergone marked improvements in water quality and has become a coldwater fishing destination in Connecticut. The restoration of fish passage for anadromous herrings and searun brown trout will extend these improvements. The Naugatuck River is a highly-urbanized watershed and will

afford greater access and value to urban residents for recreation and aesthetics in an economically disadvantaged area.

Project Scope: The construction of the Tingué Fish Bypass represents a mid-scale, shovel-ready project that will yield significant and sustainable ecological and economic benefits. Feasibility studies, selection of a preferred alternative, final design, and necessary property easements, acquisitions and consents are complete. Permits required for the project are dam safety, flood management, 401 water quality, and U.S. Army Corps of Engineers (ACOE) programmatic general permit (PGP). All had been previously issued, but must be renewed or reissued because expiration dates have passed. Since the applications and work scope has not changed significantly, all permits should be reissued by the proposed construction start date of October 2009. Major construction activities include creation of a fish bypass channel around the Tingué Dam on the Naugatuck River through excavation and removal of fill. The channel will include habitat features to ensure diadromous fish passage success. The site will be stabilized and streamside habitat restored to promote infiltration of stormwater by the use of pervious paving and native vegetation landscaping techniques. Post-construction activities will include monitoring the fishway in two ways: visual observations of fishes actively migrating up the fishway, and documentation of physical and hydraulic conditions (comparing design flow characteristics with actual flow characteristics). Current creel return assessments for sea-run brown trout will be extended upstream of the fishway as a measure of short-term socioeconomic benefits of the project.

Project Output/Outcomes: Restoring diadromous fish passage at the Tingué Dam will restore access to 32 miles of historical spawning and juvenile rearing and growth habitats. Diadromous species targeted for restoration include American shad (20,000 returning adults), river herring (blueback herring and alewife, collectively; 30,000 returning adults), sea-run brown trout (highly variable numbers impossible to accurately project), and American eel (very high numbers, impossible to estimate). The numbers of shad and river herring reflect long-term projections based upon estimates of what the full capacity of the restored habitat can support when the restored populations have reached equilibrium. This will occur long after the award period, perhaps as much as 20 years in the future. In addition, the re-establishment of these self-sustaining populations will have many indirect ecological benefits such as increased populations of predators. These include osprey, bald eagle, striped bass, bluefish, seals, porpoises, colonial nesting birds, otter, and mink. Furthermore, diadromous fish are the vector for transporting many freshwater mussels to upper portions of watersheds. Since the construction of dams, many species of mussels have disappeared from upper watersheds and the construction of the bypass will reverse this trend.

Project Timeline: The construction of the project is expected to begin approximately 90 days of the award upon approval of necessary permits (October 2009) and completed within 18 months of the project start date, with substantial completion within the first 12 months (Detailed schedule in text below).

This project has been designed, and specifications have been prepared. Construction related permits (dam safety, flood management, 401 water quality, and ACOE PGP) that had been issued for the project have expired, and an expedited reissuance of them is anticipated within 90

days of project initiation (by October 1, 2009). The project is ready for bid and implementation as soon as a contractor(s) is selected and awarded a contract. While the bidding process will provide more specific job creation and maintenance information, as a standard construction process it is anticipated that employment targets will be met consistent with the bid.

Permits and Approvals: Reissuance of applicable permits (dam safety, flood management, 401 water quality, and ACOE PGP) is expected without delay, by the proposed construction start date of October 1, 2009. No extraordinary obstacles to an expedited reissuance of applicable permits or completion of NEPA compliance analysis are anticipated.

Federal Funds Requested and Non-Federal Match Anticipated:

Federal Funds Requested: \$2,500,000
State Match Funds Available: \$2,250,000

Overall Project Cost: \$4,750,000

2. Project Narrative

Importance and Applicability

Relationship to ARRA:

Objectives:

- 1) Short term
 - a. Create or maintain an estimated construction, engineering, landscaping, and supporting services jobs involving 135 people and 36,569 hours of work
- 2) Long term
 - a. Increase angler creel of searun brown trout
 - b. Increase economic benefit as a product of ecological restoration

As a construction project with full design completed and specifications for bid prepared, the Tingué Dam bypass project is ready for bid, contracting and implementation upon receipt of funds and permit reissuance by October 1, 2009. While the bids will provide the detailed information on number, type and duration (in labor hours) of jobs created or maintained from the project, we estimate 20 jobs of one-year equivalent duration will be created for construction, landscaping, logistics, management, engineering and provisioning of building supplies, materials, and other services¹. Approximately 12 of those jobs will be created from the federal stimulus support under ARRA. Once bids are opened, DEP will provide specific details on the number of jobs created or maintained, and report on jobs creation and preservation as required under the ARRA for a NOAA award agreement.

A fish bypass project completion, by its very nature, is a tangible and quantifiable result of the construction effort. There are several distressed communities in the Naugatuck River corridor in close proximity to the project, including Ansonia, Derby, Naugatuck, Waterbury and Torrington. All contractors to the State are required to abide by Connecticut's Affirmative Action and Equal Opportunity employment policies and must "implement, monitor and enforce this [Connecticut's] affirmative action policy statement and program in conjunction with all applicable Federal and state laws, regulations and executive orders." Further, DEP will condition any and all grant agreements in accordance with ARRA requirements for American iron, steel and manufactured goods and meet minimum requirements under the Davis-Bacon Act for salaries.

The restoration of diadromous fish populations is expected to generate long term increases in economic activity in tourism and recreation related to fishing, and increases in property values. The restoration of water quality that led to the creation of coldwater fisheries resulted in dramatic increases in recreational use of the river. Similar increases are expected as anadromous fish populations increase and extend further upstream. Most notable are expected increases in searun

¹ This is a best estimate for on-site jobs and does not include the employment effects of the goods and services provided through the entire project cost.

brown trout throughout the river and rising striped bass abundance in the lower river as a function of seasonally increased forage base. Research into the long term economic benefits of restoring diadromous fish passage has revealed a direct link between ecological restoration and economic benefits in the form of increases in property values (E. Schultz, pers. comm.). Such increases are expected to reverse recent trends in these economically distressed communities in recent years.

Relationship to NOAA's Mission:

Objectives:

- 1) Short term
 - a. Restore access to 32 miles of historical diadromous fish habitat for spawning, juvenile rearing and growth, and adult and juvenile passage
- 2) Long term
 - a. Increase adult American shad population size by 20,000
 - b. Increase adult river herring population size by 30,000

The removal (bypass) of Tingué Dam, an in-stream barrier to diadromous fish passage on the Naugatuck River, will restore access to approximately 32 miles of essential habitats for American shad, blueback herring, alewife and American eel, four NOAA trust species of regional and national significance. The Naugatuck River watershed (311 square miles) joins the Housatonic River eight miles upstream from Long Island Sound (Figure 1) near the head of tide, and represents approximately 16 percent of the overall basin. In turn, the Housatonic River basin is the largest watershed with the greatest amount of historical diadromous fish freshwater habitat in the western Long Island Sound.

“Riverine migratory corridor(s)” is a class of essential habitat for diadromous fishes; those that move between marine and fresh waters for purposes of reproduction. This class of habitat supports adult spawning, juvenile growth, and adult and juvenile migratory pathways. The proposed project will re-connect the existing fish runs to these historically available habitats.

The Naugatuck River watershed supported significant native diadromous fish runs that included Atlantic salmon, American shad, alewife, blueback herring, striped bass, white perch, rainbow smelt, sea lamprey, and American eel. Historical research indicates that fish were able to migrate upstream of Seymour (except for smelt) and access the entire river. There are no other structures in the river downstream of Thomaston that would be expected to impede fish runs. However, the Naugatuck River, a hub of industrial development in Connecticut, was dammed early (Figure 2). The Tingué site, first known as Humphreysville, was dammed after the Revolutionary War by an aide to Thomas Jefferson by the name of Humphreys. This dam extirpated whatever salmon run had survived and drastically reduced the numbers of other species. By the 1960s, over 288 dams had been constructed on the Naugatuck and its tributaries, which also became severely polluted. These combined factors led to the extirpation of diadromous fish runs from the basin. However, remnant runs of targeted diadromous fishes that continued to exist in the lower Housatonic River, downstream of Derby Dam, provided a restoration opportunity for the Naugatuck basin.

Over the past 20 years, the Connecticut Department of Environmental Protection (DEP) has been engaged in a concerted and coordinated effort to restore the water and habitat quality of the Naugatuck River, including removal or passage provisions for migratory and diadromous fishes. Water quality efforts focused on advanced wastewater treatment requirements to meet pollutant wasteload allocations (WLA) and biological toxicity requirements on the river. Six of eight municipal wastewater treatment facilities (WWTF) were identified for upgrades to meet the WLA and upgrades have been completed to meet those requirements in Seymour, Torrington, Naugatuck, Waterbury and Thomaston (Figure 1). One facility, the Watertown Fire District, eliminated its discharge through a connection to the Waterbury WWTF. Most of these upgrades were completed by 2000 and, since that time, additional treatment activities are being implemented at WWTFs along the Naugatuck River to meet the nitrogen WLA instituted upon adoption of the Long Island Sound total maximum daily load analysis (TMDL) in 2001. As water quality improved, diadromous fishes returned to the lower Naugatuck River, expanding upstream to the Kinneytown Dam.

Planning for the reconstruction of the Waterbury WWTF served as a catalyst for a collaborative effort in habitat restoration through dam removal and fish passage in the late 1990s. Relevant to this application were the removals of various dams and the construction of fish passage facilities, although other activities such as debris removal from tributary streams, river corridor replanting, flow augmentation and support for a full time DEP field inspector to monitor activities also contributed to overall improvements in the river's habitat. Much of this work was completed by the fall of 1999, prior to the period of reconstruction of the Waterbury WWTF.

The 1996 DEP Inland Fisheries Division "Plan for the Restoration of Anadromous Fish to the Naugatuck River, Connecticut" (see supplemental information submission) served as the foundation for dam removal and fish passage construction planning. The plan identified the Naugatuck River and its tributaries as having excellent potential for coldwater fish habitat and for re-establishing historical diadromous fish runs. Fish passage had been eliminated during the Industrial Revolution, both as a consequence of demand for water and water power that created dams as well as deteriorating water quality from inadequate treatment. However, with substantial water quality improvements, DEP fisheries biologists began to target diadromous species for restoration, including the American shad, blueback herring, alewife, searun brown trout, and American eel.

A fish ladder constructed at the Kinneytown Dam restored passage for a variety of species and American shad, river herring, brown trout and American eel expanded upstream to the Tingué Dam (Figure 1). In addition, prespawned American shad and river herring have been stocked upstream of the Tingué Dam to create year classes imprinted to the upper watershed, and limited numbers of juvenile American eel have migrated past the dam. Beginning in the fall of 1999, five dams upstream of Tingué Dam were removed or breached (Union City Dam in Naugatuck, and Platt's Mill Dam, Freight Street Dam, Anaconda Dam, all in Waterbury, and the Chase Brass Dam in Watertown). The net result was the restoration of approximately 32 contiguous miles (24 miles of mainstem habitat and 8 miles of tributary habitat) of historical diadromous fish habitat that remains disconnected from long Island Sound due to the continued barrier presented by Tingué Dam. The restored mainstem and tributary (Hockanum, Hop, Steele, Hancock, Fulling Mill, Branch brooks, and the Mad River) reaches upstream of Tingué Dam contain high quality

spawning and juvenile rearing habitat. Next upstream is Plume & Atwood Dam in Thomaston, which, like the Bray's Buckle Dam on the Mad River, a tributary to the Naugatuck River in Waterbury, are targeted for future removal (Figure 1). In addition, providing access to the lower reaches of the various tributaries creates opportunities for future restoration through removal/passage at additional dams/barriers on each watercourse.

As a result of the substantial strides made in restoring water and habitat quality, coldwater fisheries have expanded in the watershed. CTDEP, in response to these changes, created a new broodstock Atlantic salmon fishery on the river in 1996 instituted trophy trout areas (2001) and special trout management areas (2005).

Not only do the dam removals and fish passage structures provide for fish migration and greater recreational opportunities, but those actions also help improve water quality by increasing velocity and allowing for more natural aeration and pollutant attenuation. Great improvements, substantiated by monitoring, have been seen in aesthetics, clarity, ammonia levels, dissolved oxygen concentrations, and other chemical constituents.

Lasting Benefits:

The targeted diadromous species include American shad (20,000 returning adults), river herring (blueback herring and alewife, collectively; 30,000 returning adults), sea-run brown trout, and American eel.

The physical and chemical improvements to the Naugatuck River are lasting and permanent, requiring only the maintenance of existing water quality management programs, especially NPDES permitting programs for industrial, municipal and stormwater discharges in the basin, and fish and river habitat maintenance and restoration activities that are the mission of DEP's Inland Fisheries Division. Reconnecting remnant runs of diadromous fishes to historical upstream habitats where substantial strides have been made in restoring water and habitat quality is expected to foster the restoration of thriving and self-sustaining populations. Targeted fisheries management programs to ensure continued or added value to the Tingue Dam bypass project, include maintenance of the bypass channel and building fish populations.

Citizen groups and communities along the river have played a key role in driving the Naugatuck River restoration process and have made additional improvements on their own. River advocacy groups have conducted river cleanups, fish stocking, revegetation projects, volunteer water quality and biological monitoring, and sponsored river celebrations and "on the water" events such as canoeing and kayaking. Many towns and associations have been involved in greenway projects with a goal of creating a greenway along the entire length of the Naugatuck River from Torrington to Derby. Of particular note, at the northern end of the river, the City of Torrington worked with the Army Corps of Engineers, DEP Inland Fisheries Division and others to increase habitat value in a section of the Naugatuck River that had been channelized for flood control. During the summer of 2000, more than 300 boulders were installed within a 4,000 foot stretch of the river in downtown Torrington to help restore fisheries habitat. From one end of the Naugatuck River to the other, incremental improvements are contributing to make the Naugatuck a healthier river and watershed.

Technical/Scientific Merit:

Implementation Plan:

DEP has been planning for the Tingue Dam bypass project for nearly a decade. The masonry dam is approximately 150 feet long and 15 feet high and was built on top of an apparent gorge or irregular bedrock outcrop (Figures 3 and 4). There is no water use at the site and all streamflow spills over the spillway or an adjacent bedrock ledge. To the south is a town park; to the north is a parking lot. The dominant feature, however, is the CT Route 8 highway bridge that spans the river mere feet upstream of the spillway. Support piers for the bridge are anchored into bedrock adjacent to the dam. While American eel are capable of migrating past this dam in limited numbers, upstream passage by all other diadromous and resident fish is blocked. The first step in developing a plan for fish passage involved contracting with Milone and MacBroom of Cheshire, CT, an engineering, landscape architecture and environmental science company, to develop a final design and implementation plan for the project. A detailed Engineering Report was completed in 2000 (*Engineering Report, Tingue Dam Bypass Channel*) that included physical, geotechnical and hydrological assessments of the site as well as a fisheries analysis and environmental assessment (See Figure 5, Table of Contents for the Report). The report also included in its Appendix B a fisheries plan and analysis of alternatives to the bypass project that considered the range of actions from no action to complete dam removal. The bypass alternative was selected by DEP as the most viable and cost-effective alternative.

In June, 2002, Milone and MacBroom completed detailed site plan drawings and specifications (Figures 6 and 7) for the project, which have been used to develop a December 2007 draft “Project Specifications for Tingue Dam Bypass Channel, Seymour, Connecticut” by DEP’s Inland Water Resources Division for use in the bidding process (See Figure 8, Table of Contents for the specifications report). In the specifications document, details that will “...provide assurance that implementation of the project will meet all Federal, state and local environmental laws, and that applicable permits and/or approvals are in hand or will be obtained expeditiously” so that on-the-ground activities can begin soon after the bidding and contracting process is completed. Permits required are dam safety, flood management, 401 water quality certification and ACOE PGP. No problems with reissuance of permits are anticipated by the October 1, 2009 construction date, as there were active permits issued a few years ago that have expired when adequate funding could not be found to complete the project. Conditions have not changed since that time and it is expected the previous applications can be used with only minor modifications.

Operation and Maintenance: The attached document included in the supplemental PDF file (*Tingue Dam Fish Bypass Channel, Operation and Maintenance Plan, DRAFT*) outlines how the facility will be operated and maintained and identifies responsible parties for ownership, operation and maintenance. Some aspects of the Plan are not finalized, requiring construction to be completed and a period of experience before exact measures are adopted. These shall be incorporated into future revised versions of this Plan. Furthermore, this Plan shall be submitted

to the NOAA Restoration Center for review and comment prior to implementation and shall be revised appropriately.

Socioeconomics: As indicated in the **Importance and Applicability** section, there are several distressed communities in the Naugatuck River corridor in close proximity to the project, including Ansonia, Derby, Naugatuck, Waterbury and Torrington. All contractors to the State are required to abide by Connecticut’s Affirmative Action and Equal Opportunity employment policies and must “implement, monitor and enforce this [Connecticut’s] affirmative action policy statement and program in conjunction with all applicable Federal and state laws, regulations and executive orders.” Further, DEP will condition any and all grant agreements in accordance with ARRA requirements to use American Steel and abide by the Davis-Bacon Act as minimum wage requirements for the project. Both DEP and a selected management consultant to oversee the construction contractor(s)’ activities will maintain oversight and day-to-day approval of activities to ensure compliance with the contract conditions and requirements, that performance measures, including schedules, are met and that major targets for construction and performance standards are incorporated in quality management plans and met. Performance bonds are required as a standard contractual requirement in Connecticut.

Short term performance parameters will involve monitoring the number of hours by NAICS job code, with the total compared to projected job creation/retention targets. Preliminary estimates of job creation/maintenance and hours of work generated from the entire project are:

STATE OF CONNECTICUT - TINGUE DAM PROJECT - SEYMOUR, CT

Description	NAICS Code	Funding Source	Cost (\$)	Number of workers	Duration (weeks)	Total Hours
storm drainage	237990	DEP	41,638	6.5	2	520
chain link fence	238990	DEP	27,146	2.8	3	339
railing	332323	DEP	51,950	5.4	3	649
paving	238990	DEP	232,437	12.1	2	968
plantings	561730	DEP	52,263	4.1	4	653
signage	339950	DEP	16,945	1.3	4	212
electrical	238210	DEP	194,944	15.2	4	2,437
brick pavers	238990	DEP	11,639	1.2	3	145
pavement markings	237310	DEP	2,252	0.7	1	28
wood fence	321999	DEP	10,256	1.6	2	128
soil remediation	562910	DEP	1,608,531	16.8	12	8,043
clear cut & grub	562119	NOAA	22,296	7.0	2	557
earth & rock excavation	238910	NOAA	1,101,539	10.6	26	11,015
reinforced concrete	238110	NOAA	580,061	15.1	8	4,834
rebar	238120	NOAA	108,694	6.8	4	1,087
carpentry	238130	NOAA	83,610	3.5	10	1,394
traffic control	561990	NOAA	64,659	1.0	20	808
insurance/bonding	524126	NOAA	222,961	5.8	2	465
survey stakeout	541370	NOAA	83,610	4.4	4	697
trailer rental	532120	NOAA	40,133	1.6	2	125
concrete dampproofing	238390	NOAA	17,279	2.7	2	216
blasting	213115	NOAA	111,481	7.7	3	929
soil remediation	562910	NOAA	63,677	0.7	12	318
Total			4,750,000	135		36,569

Note that the distribution of costs between NOAA and DEP are subject to change, as are all categorical cost estimates, depending upon bid outcomes and eligibility negotiations between DEP and NOAA.

Long term socioeconomic performance parameters will involve monitoring angler reports of sea-run brown trout returned to the creel. This species is a highly-sought after sport fish and the establishment of a fishery can provide meaningful contributions to the local economy. Although the same can be said for American shad, it is envisioned that the establishment of a viable American shad fishery will go beyond the award period whereas the sea-run brown trout fishery could be established immediately upon completion of the fishway. An optional study, not included within the scope of this application, could be undertaken to assess the overall economic benefit of the project. Such a project would be based on previous work to assess changes in property values as a function of ecological restoration (E. Schultz, pers. comm.).

Technical Feasibility: The existing plans were developed over years of collaboration and consultation and it is believed to represent the most technical feasible option for fish passage at this location. The CTDEP hired Milone & MacBroom, Inc. (MMI), a consulting engineer firm with considerable hydraulic expertise and experience with rivers, to perform an alternatives analysis. MMI had designed the removal of the upstream dams and first considered removing the Tingué Dam as well. However, the presence of the Rt. 8 bridge piers on top and behind the dam complicated its removal. There were great fears that the act of removing the dam may undermine the piers or new scour patterns along the base of the piers after the headpond was eliminated and substrate displaced would undermine the piers in subsequent years. The CT Department of Transportation (DOT) would not approve the removal of the dam and since it owns critical land around the site, its approval was essential.

The Town of Seymour also did not support the removal of the dam since the dam is seen as a significant historical feature and appears on the Town Seal. Another option was the construction of a Denil fishway on the north bank. However, space limitations, limitations on the effectiveness of the design for the full array of targeted species, and operation and maintenance considerations, rendered this alternative unattractive. Alternatively, a fish bypass around the dam would achieve all of the objectives and was embraced by CTDEP and the consulting partners (e.g. U.S. Fish & Wildlife Service). The CTDEP hired MMI to design the bypass channel and throughout the process, it consulted with the Inland Fisheries Division's fish passage specialist, hydraulic engineers from the USFWS, and engineers and biologists with the U.S. Geological Survey- Conte Lab (USGS).

After the bypass channel was designed (Figures 6 and 7), the USGS received a grant from NOAA to model a nature-like fishway in its experimental flume at the Conte Lab and the intent was for the experimental fishway to have rock weirs and an overall slope similar to that proposed for the Tingué Dam bypass channel. The data from the trial runs demonstrated that shad and river herring would use such a fishway and the observations will help with the 'fine-tuning' of the rock weirs within the Tingué bypass channel.

The bypass channel will be the most effective at passing fish, will be the most natural in terms of water management, will be the most aesthetically pleasing to the public, the most acceptable by the Town, and have the best opportunity for public education for fish migrations and restoration.

Concerns about soil contamination at the site had been raised, and the project specifications and cost estimates account for that possibility. DEP has recently conducted an evaluation of the soils and is awaiting the results of that assessment. The evaluation was conducted during the winter of 2008 and 2009 and provided a significant subsurface environmental investigation to characterize the environmental conditions of the proposed Tingue Dam bypass project. In general the area had received artificial fill of unknown environmental condition overlying natural geologic formation(s). The area, in the Town of Seymour, had a long industrial past and had potential for contamination as a brownfield. Because overburden soil and blasted rock will be excavated and removed as export fill as part of the bypass channel construction project, an evaluation of those materials was a critical need for planning purposes and cost estimation. A final report of the findings of the Department's environmental investigation is being drafted at this time.

While not finalized, the preliminary data looks promising, showing that the property is not significantly polluted. The chemistry data and physical characteristics indicates, preliminarily, that the soil (and expected blasted rock), while containing measurable levels of contaminants of concern, may meet the eligibility for beneficial reuse as clean fill in accordance with the Connecticut Remediation Standard Regulations (Section 22a-133k-1 through 133k-3 of the Regulations of Connecticut State Agencies (RSRs)). Should this be the conclusion reached by the Department, then the material exported can be beneficially reused at a suitable upland redevelopment project needing import fill in Connecticut, with Department approval consistent with the RSRs.

Project Monitoring and Evaluation: Meaningful evaluation must be done when there are significant numbers of target species. This kind of evaluation must be deferred until after the award period. (For more on this, see "Tagging Studies", below.) Monitoring will be an important part of this project. This kind of a bypass channel has not been constructed in the Northeast on such a large scale nor for the important yet challenging American shad. Monitoring will be important to maximize the efficiency of this fishway as well as to provide guidance for design of similar fishways in the future (e.g. Howland, ME). Monitoring of the performance of this fishway will be segregated into two components: documentation of physical and hydraulic conditions within the fishway and visual observations of migrating fishes.

Documentation of physical and hydraulic conditions- Enough is known about the migratory habits and needs of the targeted species to allow an initial assessment of the operating fishway, even in the absence of such species. For example, we know that shad avoid turbulence, constricted passageways, and dark shadows and prefer streaming flow over plunging flow. We know the swimming abilities of the species, expressed as feet per second over a certain amount of time. Upon initial operation of the fishway, a survey of in-stream conditions will be conducted at a range of streamflow levels expected during typical fish migratory seasons. A data sheet will be developed and completed for each survey. In addition, a copy of the as-built plans for the channel will be used.

Field crews of CTDEP/Inland Fisheries Division staff will wade in the channel and measure depths at numerous key locations in the channel using a hand-held measuring staff. Depths will be entered on the plans at the appropriate location. Velocities will be measured at standardized depths at numerous key locations in the channel using a hand-held digital flowmeter. Velocities

will be entered on the plans at the appropriate locations. Flow vectors (directional arrows) will be drawn on the plans to indicate the direction of flow when such deviates from downstream and parallel to the channel banks. Such data will be obtained by visual determination and with the assistance of small retrievable floats, when necessary. Such field surveys will be initiated immediately upon completion and field testing of the channel, which is projected to occur in August, 2010. The surveys will continue through November of 2010, as necessary. Surveys will be conducted at various flow levels (as documented from permanently mounted staff gages) and crews will arrive on site only when targeted flow levels occur. If all targeted flow levels are surveyed prior to November, there will be no reason to extend the surveys that late into the year. These surveys will resume in April of 2011 during the first spring fish runs with the new fishway.

Data analysis will include identification of potential problem areas such as strong back currents, extended areas of excessive velocities (as compared to the target species' swimming abilities), areas that appear too shallow to allow accommodate the target species (particularly at the weirs), and presence of plunging flows. These analyses will also be cross checked with observations of migrating fishes (see next section below) to determine if fish were observed to exhibit reluctance or failure to move upstream at these potential problem areas. It is expected that this activity will require between 30 and 50 staff hours.

Visual observations- Visual observations of fish approaching and moving up fishways can be very informative and helpful. Determining how fish react to certain structures (e.g. an entrance, a weir, a back current) can help assess the effectiveness of a fishway. Watching where certain species go within a fishway (particularly a nature-like fishway with a diverse array of possible pathways) can be instructive. Such observations are not always possible in technical fishways due to the depth and turbulence of the water. However, the average depth of the Tingle fishway will be relatively shallow and the flow typically laminar. This will allow considerable above-water observation by experienced fish passage staff with polarized sunglasses. Moreover, the nature of the fishway will allow snorkeling by experienced snorkelers and underwater observations will be added to the information base.

Data will include species diversity and distribution by pool, upstream penetration by downstream species, diel nature of movement, lateral position of migrants, and presence of migrants by river stage. The observations will be led by Steve Gephard, who is an experienced whitewater snorkeler with considerable fish passage experience. Some observations may begin when the fishway is first operational (projected to be August 2010) but the first opportunity to observe targeted anadromous species in the fishway will be April of 2011, when the visual observations component will be fully launched. It is projected that this activity will require between nine and 15 staff hours. When anadromous species are seen moving up the fishway in substantial numbers (whether via the Kinneytown Fishway or trucked in below from out-of-basin sources), consideration will be given to initiating tagging studies (see below).

Both of these monitoring studies will be fully developed prior to the completion of construction and will be submitted to NOAA for review and comment prior to finalization. These monitoring studies will support an adaptive management approach to the operation of the fishway. If visual

observations and documentation of hydraulic conditions identify problem areas, staff will attempt physical modifications to the channel to rectify these problems. Most likely, such modifications would focus on the rock weirs—raising or lowering them or re-configuring a ‘notch’ for primary passage. If such modifications are necessary, the documentation of hydraulic conditions will be repeated as will the visual observation of fish (during the next opportunity when fish are present). It is expected that such an iterative process will result in achieving conditions that are conducive to fish passage. NOAA staff will be kept informed of this adaptive management approach and given opportunity to participate in the process.

A report will be prepared for distribution to partners and the general public on the results of these monitoring activities, requiring additional staff time, estimated at 21 hours. Due to the potential for an extended adaptive management process, a final report may not be available by the end of the NOAA grant award period but an interim report can be made available by that time.

These early monitoring exercises will set the stage for future tagging studies by determining likely bottlenecks and suitable locations for PIT tag antennae. The discussion below not only describes these future tagging studies but also further explains why such tagging studies are not feasible during the award period.

Tagging studies- Fishway evaluations are often done by inserting radiotags in a subsample of the run to document large-scale movement of migratory fish, e.g. how many fish move upstream to the dam; do they approach the fishway entrance or do they avoid it and instead approach a spillway; do they successfully exit the project area and proceed upstream to spawning habitat? These tags are expensive and for shad typically implanted in the stomachs. PIT (passive integrated transponder) tags are often used to document fine-scale movement of migratory fish, e.g. do the fish enter the fishway; do they pass up the left side or right side; how long does it take them to go from the bottom of the fishway to the top? These small tags are relatively inexpensive and typically inserted subcutaneously into the pelvic area of shad. However, the equipment to support the PIT tag system—cables and antennae, tuning boxes, laptops—are expensive.

The best fish to use for these studies are fish that are homing to the river under question. Ideally, these fish are captured at a downstream fishway, as is being done on the Shetucket River in Connecticut, where over 1,500 shad enter annually. In the case of the Naugatuck River, less than 10 shad have been typically passed annually at the downstream Kinneytown Fishway. This is an insufficient number on which to base a tagging study. It is possible to import test animals from another river system (e.g. truck 100 shad from the Holyoke Dam in Massachusetts) but these fish have a much lower level of migratory motivation than fish that were hatched in the test river. Failure of shad to enter a new fishway may be more due to lack of migratory motivation in a strange river than inadequacy of the fishway and its design.

The CTDEP desires to conduct tagging studies of shad and river herring in the Tinguet Dam Fishway but believes that the status of the natural runs may delay such tests until outside of the grant award time period and therefore it is not proposing such studies as part of this application. If the runs accelerate rapidly (and 2009 data imply that runs may be finally starting to increase), the CTDEP will consider implementing such studies quickly, outside of the scope of this

application. Future tagging studies could be done solely by the CTDEP or in partnership with others, such as the USGS/Silvio Conte Anadromous Fish Research Center.

Overall Qualifications of Applicants

Applicant Capacity and Knowledge:

Assisting Bureau of Water Protection and Land Reuse, Planning and Standards Division (PSD) and Inland Water Resources Division (IWRD) will be staff from the Inland Fisheries Division (IFD), in particular Steve Gephard, the Supervisor of the IFD's Diadromous Fish Program. Steve is an expert on fish passage issues with over 30 years of experience with fish passage and diadromous fishes. He has been involved with over 40 projects to construct or repair fishways in Connecticut and has additional experiences in other states and Europe. He has extensive experience dealing with engineers, designs, permitting, and contractors relating to fish passage projects. He has assisted in teaching courses on fish passage for the U.S. Fish & Wildlife Service, the American Fisheries Society, and the University of Wisconsin. He serves on numerous regional committees that deal with fish passage and diadromous fishes. Steve has been involved in all fish passage and dam removal projects in the Naugatuck River watershed to date and has been involved in the planning of the Tingue Dam Fish Bypass Channel from its inception.

Administrative Resources and Capabilities:

The CTDEP is a professional state agency with full administrative, legal, information technology, and clerical support services. In addition to the primary staff identified in the previous section, there are other staff that will assist with the administrative duties and in the implementation of this project, including staff in the Hartford, Old Lyme, and Portland offices.

Project Costs

Project costs and other budgetary information are detailed in the accompanying budget narrative. Implementation of the entire project is expected to cost up to \$4,750,000. DEP will not be charging any staff time to the effort and, although not a requirement of this funding source, also has up to \$2,250,000 available in match. Because of the uncertainty of the bid outcome at this stage, DEP commits to having the full \$2,250,000 available as match, if needed. If bids come in lower, DEP will negotiate with NOAA to ensure a substantial state contribution and a determination as to whether some of the stimulus funds would need to be reprogrammed or the match ratio redefined. Detailed bid specifications are available upon request, and DEP will keep NOAA apprised of the final RFP and bid award, should the project be funded. Final bids will determine actual expenditure. DEP will also use state funds for any costs deemed ineligible by NOAA upon final approval of the project and bid cost.

Project Timeline

The construction of the project is expected to begin approximately 90 days of the award upon approval of necessary permits and completed within 18 months of project initiation, with substantial completion within the first 12 months. Documentation of physical and hydraulic conditions will begin in August 2010 with full monitoring and reporting scheduled for April through June 2011 during the first spring spawning run upon completion of the project. A detailed project schedule has been prepared (Figure 9 - attached at end of this section) covering a two-year time frame from July 1, 2009 through June 30, 2011. The tasks on the timeline include completion of the permitting process, remaining design and pre-construction activities and the actual construction period by event followed by performance monitoring, assessment and reporting. Permitting and pre-construction activities are anticipated to take until October 2009 assuming a July 1 starting date with construction beginning in the October-November time frame and completed in about 15 months.

Project Construction Oversight

In addition to the oversight provided by DEP staff from IFD, IWRD and PSD, the construction contract will have full time oversight from an engineering consulting firm. The role of the engineer will be to provide contract administration services, a full time resident representative and to prepare an as-built survey once the project has been completed. Below is a summary of responsibilities for the contract administrator and resident representative.

Contract Administrator:

- Attend pre-construction meeting to review construction sequence
- Review shop drawings, construction schedules, material submittals, change orders and payment requisitions
- Attend weekly job meetings
- Respond to contractor's questions concerning clarification of the contract drawings and specifications
- Revise the original contract drawings to changes made during construction

Resident Representative:

- Observe progress and review construction work for general compliance with the contract documents
- Record any observed deviations from the materials specified and the method of construction authorized
- Record quantities of items used during construction which will be the basis for payment to the contractor
- Report observations at weekly progress meetings
- Prepare reports as necessary to document unsatisfactory work
- Conduct final review of the project and prepare a punch list of times to be corrected prior to acceptance by DEP

Reporting

DEP will adhere to all NOAA reporting requirements as specified in the final grant agreement, and in accordance with ARRA final guidance, when available. Currently, it is understood that quarterly reports will be required within 10 working days of the end of each quarter.

Outreach and Education

Public Outreach:

Information about the project will be distributed in various forms: broadcast via public presentations (e.g., the Connecticut Conference on Natural Resources), the DEP Webpage, the Connecticut Wildlife magazine, DEP newsletters (e.g., Sound Outlook), and on-site tours. The unique design of the Fish Bypass Channel, with shallow, semi-natural features, will afford excellent opportunities for public outreach and education regarding diadromous fish resources, the impact of dams and need for fish passage, and aquatic natural resources, in general. The facility will be open to the public for self-guided tours with opportunities to observe active daytime fish migrations and American shad and river herring. There will be informational kiosks describing the purpose of the fishway, the species that benefit from it, how it works, the history of the site, and the funding sources that made the fishway possible.

Figure 9. STATE OF CONNECTICUT - TINGUE DAM PROJECT - SEYMOUR, CT, Project Schedule 6/3/09

Event	2009			
	J	A	S	O
Permitting				
Dam Safety Permit (DEP)				
Prepare Application	■			
Public Notice Submission of Application	■			
Technical Review		■		
Public Notice for Tentative Determination			■	
Receive Permit			■	
Flood Management Certificate (DEP)				
Request Technical Revision	■			
Receive Approval	■			
401 Water Quality Certificate (DEP)				
Prepare Application	■			
Technical Review		■		
Receive Permit			■	
Category II PGP (Army Corp)				
Prepare Application	■			
Technical Review		■		
Receive Permit			■	
Design				
DEP review of final design (include ARRA rqmts)	■			
Design Engineer Revises Design		■		
Public Notice for Bidding			■	
Open and Evaluate Bids				■
Pre Construction				
Draft contract for engineering services			■	
Draft contract for construction contract			■	
Award contract for engineering services				■
Award Construction Contract				■

Figure 9 (continued) STATE OF CONNECTICUT - TINGUE DAM PROJECT - SEYMOUR, CT

Project Schedule

Event	2009			2010												2011						
	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	
Construction																						
Pre-construction meeting	█																					
contractor to secure all necessary permits	█																					
contractor submittals (bonding, insurance, etc.)	█																					
mobilization of trailer and equipment	█																					
relocate skateboard park		█																				
install temporary construction fence around site perimeter		█																				
install erosion control (silt fence, containment boom)		█																				
clear & grub		█																				
survey stakout		█																				
relocate existing electrical utility and storm drains		█																				
earth excavation		█	█																			
install cofferday for water control at north end of dam		█	█																			
remove existing structures (walls, intake culverts, gate, spillway)		█	█																			
install seismic monitors to monitor blasting operations			█																			
blast rock			█																			
rock excavation			█	█																		
construct concrete dam along north side of existing dam			█	█																		
construct concrete walls and stop log inlet structure along bypass channel				█																		
finalize grading of channel					█																	
construct retaining walls, stairs, ford, stone features on east side of channel						█																
place river bed armor and rock ramps in channel									█													
field test river channel										█												
install plantings and lighting											█											
parking lot paving & curbs												█										
topsoil, mulch, seeding													█									
remove access road, construction fencing, erosion controls once site stabilized														█								
prepare as-built survey															█							
documentation of physical and hydraulic conditions*													█	█							█	█
visual observations																					█	█
prepare and submit final monitoring report																					█	█

* It may not be necessary to conduct these surveys during all months. The objective will be to survey at a variety of flow levels. Once accomplished, it need not be repeated. Subsequent years' surveys will be needed if changes to the structure are made.

LIST OF FIGURES (See SUPPLEMENTAL PDF FILE OF FIGURES)

- Figure 1. Site location map for Tingue Dam and other features on the Naugatuck River, Connecticut. (Milone & MacBroom, Inc., 2000. *Engineering Report, Tingue Dam Bypass Channel, Anadromous Fish Restoration Project, Naugatuck River Basin*. Milone and MacBroom, Inc., Cheshire, CT.)
- Figure 2. Tingue Dam Fact Sheet. (Lavin, L. and R. Stewart. 1999. *Archaeological Assessment of Dams within the Naugatuck River Basin, Anadromous Fish Restoration Project*. American Cultural Specialists, Seymour, CT. 149 p.)
- Figure 3. Aerial view of Tingue Dam and surroundings, Seymour, CT.
- Figure 4. Aerial photos of Tingue Dam and surroundings, Seymour, CT.
- Figure 5. Table of Contents from Milone & MacBroom, Inc., 2000. *Engineering Report, Tingue Dam Bypass Channel, Anadromous Fish Restoration Project, Naugatuck River Basin*. Milone and MacBroom, Inc., Cheshire, CT.
- Figure 6. Tingue Dam, architect's drawing of bypass channel. Milone & MacBroom, Inc., Cheshire, CT.
- Figure 7. Tingue Dam, site plan of bypass channel project, layout and landscaping. Milone & MacBroom, Inc., Cheshire, CT.
- Figure 8. Table of Contents from CTDEP, Inland Water Resources Division. 2007. *Project Specifications for Tingue Dam Bypass Channel, Seymour, CT*. Project No. WR-343124013. Dec. 21, 2007.

TINGUE DAM BYPASS CHANNEL
NAUGATUCK RIVER, CONNECTICUT

Application for NOAA Coastal and Marine Habitat Restoration Project Grants
Under the American Recovery and Reinvestment Act of 2009

3. Budget Justification

Project Overview

The construction of the Tingue Fish Bypass represents a mid-scale, shovel-ready project that will yield significant and sustainable ecological and economic benefits. Feasibility studies, selection of a preferred alternative, final design, and necessary property easements, acquisitions and consents are complete. Permits required for the project are dam safety, flood management, 401 water quality, and U.S. Army Corps of Engineers (ACOE) programmatic general permit (PGP). All had been previously issued, but must be renewed or reissued because expiration dates have passed. Since the applications and work scope has not changed significantly, all permits should be reissued by the proposed construction start date of October 2009. Major construction activities include creation of a fish bypass channel around the Tingue Dam on the Naugatuck River through excavation and removal of fill. The channel will include habitat features to ensure diadromous fish passage success. The site will be stabilized and streamside habitat restored to promote infiltration of stormwater by the use of pervious paving and native vegetation landscaping techniques. Post-construction activities will include monitoring the fishway in two ways: visual observations of fishes actively migrating up the fishway, and documentation of physical and hydraulic conditions (comparing design flow characteristics with actual flow characteristics). Current creel return assessments for sea-run brown trout will be extended upstream of the fishway as a measure of short-term socioeconomic benefits of the project.

The somewhat lengthy history of this project has provided detailed planning, design and costing through a contractor, Milone & MacBroom, Inc., of Cheshire, CT. The budget costs are well scoped and documented as a consequence.

Total Cost

Implementation of the entire project is expected to cost up to \$4,750,000. DEP will not be charging any staff time to the effort and, although not a requirement of this funding source, also has up to \$2,250,000 available in match. Because of the uncertainty of the bid outcome at this stage, DEP commits to having the full \$2,250,000 available as match, if needed. If bids come in lower, DEP will negotiate with NOAA to ensure a substantial state contribution and a determination as to whether some of the stimulus funds would need to be reprogrammed or the match ratio redefined. Detailed bid specifications are available upon request, and DEP will keep NOAA apprised of the final RFP and bid award, should the project be funded. Final bids will

determine actual expenditure. DEP will also use state funds for any costs deemed ineligible by NOAA upon final approval of the project and bid cost.

Budget Details: All costs will be contractual.

STATE OF CONNECTICUT - TINGUE DAM PROJECT - SEYMOUR, CT

Description	NAICS Code	Funding Source	Cost (\$)	Number of workers	Duration (weeks)	Total Hours
storm drainage	237990	DEP	41,638	6.5	2	520
chain link fence	238990	DEP	27,146	2.8	3	339
railing	332323	DEP	51,950	5.4	3	649
paving	238990	DEP	232,437	12.1	2	968
plantings	561730	DEP	52,263	4.1	4	653
signage	339950	DEP	16,945	1.3	4	212
electrical	238210	DEP	194,944	15.2	4	2,437
brick pavers	238990	DEP	11,639	1.2	3	145
pavement markings	237310	DEP	2,252	0.7	1	28
wood fence	321999	DEP	10,256	1.6	2	128
soil remediation	562910	DEP	1,608,531	16.8	12	8,043
clear cut & grub	562119	NOAA	22,296	7.0	2	557
earth & rock excavation	238910	NOAA	1,101,539	10.6	26	11,015
reinforced concrete	238110	NOAA	580,061	15.1	8	4,834
rebar	238120	NOAA	108,694	6.8	4	1,087
carpentry	238130	NOAA	83,610	3.5	10	1,394
traffic control	561990	NOAA	64,659	1.0	20	808
insurance/bonding	524126	NOAA	222,961	5.8	2	465
survey stakeout	541370	NOAA	83,610	4.4	4	697
trailer rental	532120	NOAA	40,133	1.6	2	125
concrete dampproofing	238390	NOAA	17,279	2.7	2	216
blasting	213115	NOAA	111,481	7.7	3	929
soil remediation	562910	NOAA	63,677	0.7	12	318
Total			4,750,000	135		36,569

Note that the distribution of costs between NOAA and DEP are subject to change, as are all categorical cost estimates, depending upon bid outcomes and eligibility negotiations between DEP and NOAA.

Total NOAA Project Costs

This proposal requests \$2,500,000 in federal funds from NOAA under the ARRA of 2009. All of the NOAA funds will be used for construction costs and related activities, unless there are activities NOAA identifies as ineligible for federal stimulus funds. In those cases, state matching funds will be substituted, and adjustments made to other line items accordingly, with concurrence of NOAA project managers. DEP will also include language in contracts that

American iron, steel and manufactured goods will be used in accordance with requirements, and potential waivers, as set forth in the ARRA of 2009. Further, DEP will ensure that Davis-Bacon federal wage requirements are met. In the bidding specifications, DEP will request that “green practices” will be used to the extent possible, including porous paving materials and use of native vegetation for site landscaping and stabilization. This project will be competitively bid in accordance with state regulations, and meet all federal requirements.

Non-Federal Matching Share

As noted above, DEP has up to \$2,250,000 available in state funds to be used to supplement the \$2,500,000 in federal funds if awarded by NOAA. The above table details how the state vs. NOAA stimulus funds are proposed for use, but any changes will be provided to NOAA when the project is bid and during contract development. Not indicated are staff resources to administer the grant, oversee the construction, and follow up with required monitoring, operation and maintenance activity. These activities will involve staff from the Inland Fisheries Division, the Inland Water Resources Division and the Planning & Standards Division within DEP.

Additional Financial Justification

DEP has been planning for the Tingué Dam bypass project for nearly a decade. In sum, it is a well-thought out plan with full consideration of alternatives and detailed cost estimates. The first step in developing a plan for fish passage involved contracting with Milone and MacBroom of Cheshire, CT, an engineering, landscape architecture and environmental science company, to develop a final design and implementation plan for the project. A detailed Engineering Report was completed in 2000 (*Engineering Report, Tingué Dam Bypass Channel*) that included physical, geotechnical and hydrological assessments of the site as well as a fisheries analysis and environmental assessment (See Figure 5, Table of Contents for the Report). The report also included in its Appendix B a fisheries plan and analysis of alternatives to the bypass project that considered the range of actions from no action to complete dam removal. The bypass alternative was selected by DEP as the most viable and cost-effective alternative.

In June, 2002, Milone and MacBroom completed detailed site plan drawings and specifications (Figures 6 and 7) for the project, which have been used to develop a December 2007 draft “Project Specifications for Tingué Dam Bypass Channel, Seymour, Connecticut” by DEP’s Inland Water Resources Division for use in the bidding process (See Figure 8, Table of Contents for the specifications report). In the specifications document, details that will “...provide assurance that implementation of the project will meet all Federal, state and local environmental laws, and that applicable permits and/or approvals are in hand or will be obtained expeditiously” so that on-the-ground activities can begin soon after the bidding and contracting process is completed. No problems with reissuance of permits are anticipated, as there were active permits issued a few years ago that have expired when adequate funding could not be found to complete the project. Conditions have not changed since that time and it is expected the previous applications can be used with only minor modifications.

Oversight of contracting and engineering services will be provided by DEP within the Inland Water Resources Division and the Planning & Standards Division of the Bureau of Water Protection and Land Reuse, also the applicant. For a project of this size, DEP also plans to contract for site management services to oversee day to day activities and to bring any change orders or other issues to the attention of DEP. DEP's Inland Fisheries Division will provide scientific and technical oversight, and be responsible for assessment and monitoring follow up, as described in this application. Stephen Gephard (See *Applicant Capacity and Knowledge* for credentials) will be responsible for that oversight.

Project Timeline

The construction of the project is expected to begin approximately 90 days of the award upon approval of necessary permits and completed within 18 months of project initiation, with substantial completion within the first 12 months. Documentation of physical and hydraulic conditions will begin in August 2010 with full monitoring and reporting scheduled for April through June 2011 during the first spring spawning run upon completion of the project. A detailed project schedule has been prepared (Figure 9 - attached at end of this section) covering a two-year time frame from July 1, 2009 through June 30, 2011. The tasks on the timeline include completion of the permitting process, remaining design and pre-construction activities and the actual construction period by event followed by performance monitoring, assessment and reporting. Permitting and pre-construction activities are anticipated to take until October 2009 assuming a July 1 starting date with construction beginning in the October-November time frame and completed in about 15 months.

Project Construction Oversight

In addition to the oversight provided by DEP staff from IFD, IWRD and PSD, the construction contract will have full time oversight from an engineering consulting firm. The role of the engineer will be to provide contract administration services, a full time resident representative and to prepare an as-built survey once the project has been completed. Below is a summary of responsibilities for the contract administrator and resident representative.

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- Respond to contractor's questions concerning clarification of the contract drawings and specifications
- Revise the original contract drawings to changes made during construction

Resident Representative:

- Observe progress and review construction work for general compliance with the contract documents

- Record any observed deviations from the materials specified and the method of construction authorized
- Record quantities of items used during construction which will be the basis for payment to the contractor
- Report observations at weekly progress meetings
- Prepare reports as necessary to document unsatisfactory work
- Conduct final review of the project and prepare a punch list of times to be corrected prior to acceptance by DEP

Reporting

DEP will adhere to all NOAA reporting requirements as specified in the final grant agreement, and in accordance with ARRA final guidance, when available. Currently, it is understood that quarterly reports will be required within 10 working days of the end of each quarter.

Figure 9. STATE OF CONNECTICUT - TINGUE DAM PROJECT - SEYMOUR, CT, Project Schedule

6/3/09

Event	2009			
	J	A	S	O
Permitting				
Dam Safety Permit (DEP)				
Prepare Application	■			
Public Notice Submission of Application	■			
Technical Review		■		
Public Notice for Tentative Determination			■	
Receive Permit			■	
Flood Management Certificate (DEP)				
Request Technical Revision	■			
Receive Approval	■			
401 Water Quality Certificate (DEP)				
Prepare Application	■			
Technical Review		■		
Receive Permit			■	
Category II PGP (Army Corp)				
Prepare Application	■			
Technical Review		■		
Receive Permit			■	
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DEP review of final design (include ARRA rqmts)	■			
Design Engineer Revises Design		■		
Public Notice for Bidding			■	
Open and Evaluate Bids				■
Pre Construction				
Draft contract for engineering services			■	
Draft contract for construction contract			■	
Award contract for engineering services				■
Award Construction Contract				■

Figure 9 (continued) STATE OF CONNECTICUT - TINGUE DAM PROJECT - SEYMOUR, CT

Project Schedule

Event	2009			2010												2011						
	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	
Construction																						
Pre-construction meeting	█																					
contractor to secure all necessary permits	█																					
contractor submittals (bonding, insurance, etc.)	█																					
mobilization of trailer and equipment	█																					
relocate skateboard park		█																				
install temporary construction fence around site perimeter		█																				
install erosion control (silt fence, containment boom)		█																				
clear & grub		█																				
survey stakout		█																				
relocate existing electrical utility and storm drains		█																				
earth excavation		█	█																			
install cofferday for water control at north end of dam		█	█																			
remove existing structures (walls, intake culverts, gate, spillway)		█	█																			
install seismic monitors to monitor blasting operations		█	█																			
blast rock		█	█																			
rock excavation		█	█	█																		
construct concrete dam along north side of existing dam		█	█	█	█																	
construct concrete walls and stop log inlet structure along bypass channel		█	█	█	█																	
finalize grading of channel		█	█	█	█																	
construct retaining walls, stairs, ford, stone features on east side of channel		█	█	█	█																	
place river bed armor and rock ramps in channel		█	█	█	█																	
field test river channel		█	█	█	█																	
install plantings and lighting		█	█	█	█																	
parking lot paving & curbs		█	█	█	█																	
topsoil, mulch, seeding		█	█	█	█																	
remove access road, construction fencing, erosion controls once site stabilized		█	█	█	█																	
prepare as-built survey		█	█	█	█																	
documentation of physical and hydraulic conditions*		█	█	█	█																	
visual observations		█	█	█	█																	
prepare and submit final monitoring report		█	█	█	█																	

* It may not be necessary to conduct these surveys during all months. The objective will be to survey at a variety of flow levels. Once accomplished, it need not be repeated. Subsequent years' surveys will be needed if changes to the structure are made.

Figure 1. Site location map for Tingue Dam and other features on the Naugatuck River

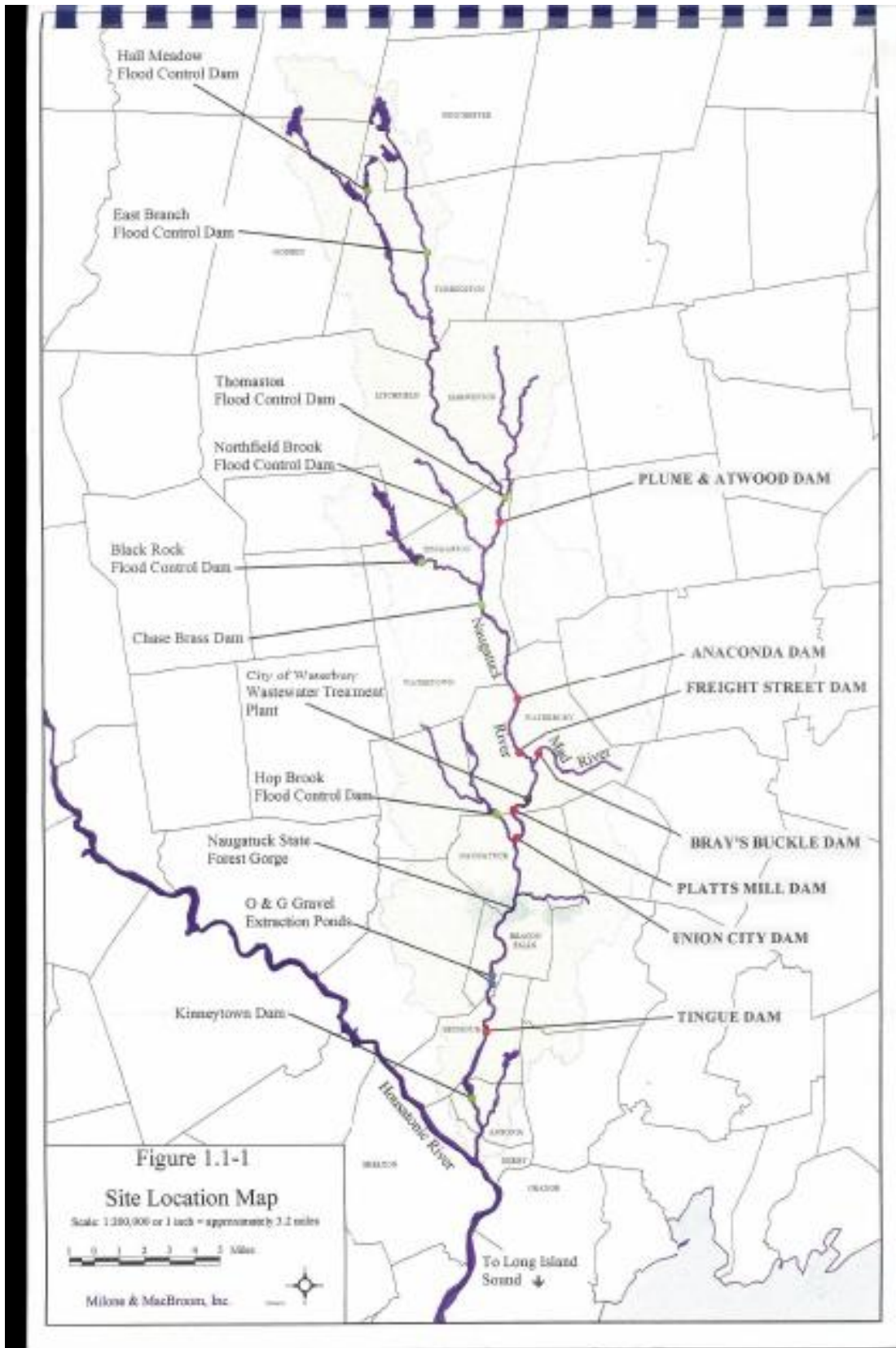


Figure 2. Tingue Dam Fact Sheet

TINGUE DAM
(FALLS DAM, RIMMON FALLS DAM, RIMMON DAM)

Location:	The Tingue dam is located on the Naugatuck River, at the place where Connecticut State Highway 8 crosses the Naugatuck River. City of Seymour, New Haven County, Connecticut.
UTM Coordinates:	USGS Naugatuck, Connecticut Quadrangle, Universal Transverse Mercator Coordinates: 18.660820.4583930
Description:	The Tingue dam is a run-of-the-river dam. It has a central stone masonry spillway, concrete spillway and intake structure constructed on irregular ledge. The 152-foot stone masonry spillway varies in height from five to 20 feet, averaging approximately 14 feet high. On the southwestern end of the dam is a 57-foot wide section of natural ledge spillway that varies in elevation, but is a maximum of three feet lower than the crest of the stone masonry spillway. To the northeast of the central stone masonry spillway the crest of the dam turns 90° to the east along a small section of exposed ledge. The crest of the dam then continues along a 26-foot long reinforced concrete wall. Directly to the east of this wall is an abandoned factory intake structure. The factory that utilized the water impounded by this dam has been demolished and replaced with a paved parking lot.
Dates of Construction:	circa 1763 (1803) to 1955,
Present Owner:	New Haven Copper Company owns riparian rights, contingent on their use. The State of Connecticut owns the land on which the dam is located.
Present Use:	Unused and abandoned.
Significance:	The Tingue Dam provided power and process water to a small but significant 18th and 19th century industrial complex. In the late 1700s the site provided power for a grist-mill, sawmill, paper mill, woolen and cotton mills. In the last quarter of the 19th century, Tingue Manufacturing Company used the water impounded by the dam for generating power and for scouring, bleaching and dyeing woolens. Water power was used by G. French (Railroad) Car Spring factory, William Smith's Machine Shop and the Excelsior Staple Company. The U.S. Pin Company used water power as did The Norman Sperry Auger Manufactory. The New Haven Copper Company used both water power and process water for refining, stamping and rolling copper and brass products. The site is significant as it is an unusual example of intensive development and full use of water resources on a small site for manufacturing.

Figure 3. Aerial view of Tingue Dam and surroundings, Seymour, CT.

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Figure 4. Aerial photos of Tingue Dam and surroundings, Seymour, CT



Figure 5. Table of Contents from Milone & MacBroon, Inc

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Figure 6. Tingue Dam, architect's drawing of bypass channel



Figure 7. Tingué Dam, site plan of bypass channel project, layout and landscaping

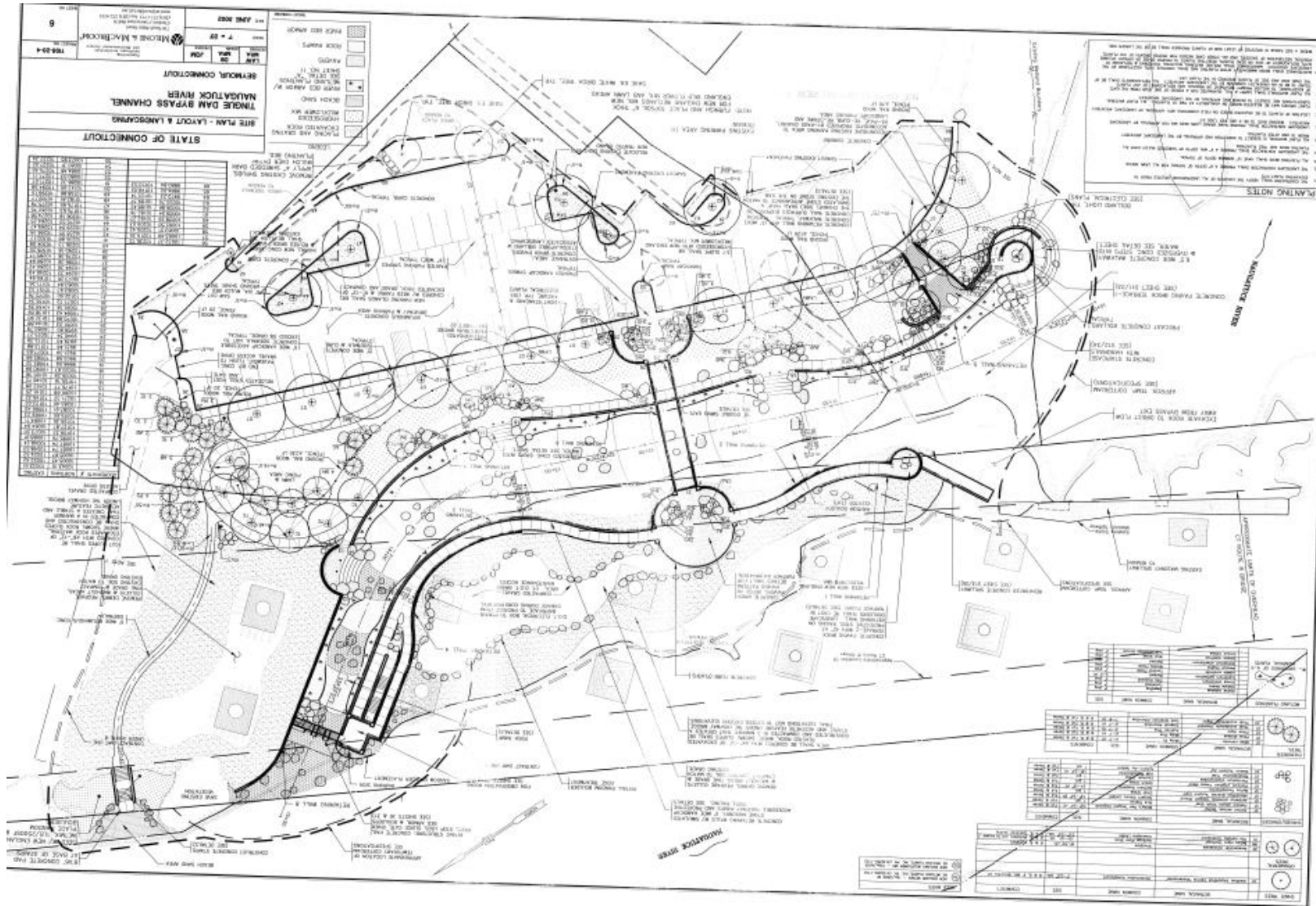


Figure 8. Table of Contents from CTDEP, Inland Water Resources Division

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Attachment
OPERATIONS AND MAINTENANCE PLAN

Tingue Dam Fish Bypass Channel
Operation and Maintenance Plan
Draft

I. Introduction

The State of Connecticut, Department of Environmental Protection (CTDEP) worked cooperatively with the Town of Seymour and other parties to build a fish bypass channel around the Tingue Dam on the Naugatuck River in Seymour, CT in 2010. The purpose of the bypass channel is to allow all species of fishes, notably diadromous species, to migrate from below the dam to above the dam. This structure will help support the CTDEP plan to restore populations of diadromous fishes to the Naugatuck River watershed. Upon completion of the structure, the Town of Seymour assumed ownership of the facility. This document outlines how the facility will be operated and maintained in the future and identifies what party bears which responsibilities. At the time of writing, there are some aspects of this Plan that are not finalized and will require some period of experience before exact measures are adopted. These shall be incorporated into future revised versions of this Plan.

II. Facility Description

The dam is located adjacent to the village of Seymour underneath the CT Rt. 8 overpass and about 600 feet upstream of the Broad Street bridge. To the south of the dam is a small town park. To the north of the dam is a tract of Town-owned open space that lies between the river and Waverly Street Extension. The fish bypass channel (subsequently referred to herein as “the fishway”) passes through this tract of land.

The fishway is a channel that runs more-or-less south to north, with a slight westerly angle, for 500 feet. The fishway entrance is located on the right bank about 50 feet below the dam. The fishway entrance is located on the right bank about 600 feet above the dam, underneath the Rt. 8 overpass. The fishway is about 30 feet wide and has steeply sloped sides. The bottom (floor) of the fishway rises at a consistent slope of about 1 to 30 (3%), with the bottom near the entrance approximating the streambed below the dam and the bottom near the exit approximating the streambed above the dam. Every 25 feet there is a rock weir that extends from one side of the channel to the other and resembling a natural stream rapids. The weirs consist of boulders piled along a line and some of the boulders are pinned into the

bedrock. These weirs help create resting pools for migrating fish and help reduce water velocities and control water depth. At the top of the fishway is a water control structure that allows workers to close the fishway (de-water) for inspection, repairs, etc. or regulate the amount of water entering the fishway. Most of the fishway has been excavated from bedrock although there are some concrete side walls, particular at the upper end near the water control structure, which is made from concrete. There is a set of stairs on the eastern side of the fishway that provides access down into the fishway to allow workers to monitor fish passage, inspect, and implement repairs. There is a shallow portion across the channel upstream of the water control structure that serves as a 'ford', a area where maintenance vehicles can drive across the channel to access the portion of land under the highway bridge that will effectively be an island with the river on one side and the fishway on the other. This ford will be available for authorized workers who need to access the island.

There are stoplogs in a concrete section of the spillway between the main dam and the fishway entrance. These stoplogs and the associated water conveyance bays function as a means to provide/regulate attraction water to the fishway. Extra water can be spilled at the north end of the dam to attract migrating fishes away from the south end of the dam and toward the fishway entrance.

III. Dates of Operation

The fishway shall be operated, at a minimum, for the time periods between April 1 and June 30 and again between October 1 and November 15, annually. It is also desirable to operate the fishway during the time period of July 1 to September 30, if feasible, even at a diminished flow, for the passage of American eel. There may be advantages to operating the fishway year-round but the judgment on whether or not this is feasible may await several years of operational experience. It may become necessary to close the fishway for inspection and maintenance but such closures shall be scheduled to fall outside of the primary spring and fall fish passage seasons as defined above, except during emergencies.

IV. Opening and Closing

In order to open the fishway, a knife gate on a threaded rod with a hand wheel shall be opened to pass an initial volume of water that will back flood the wooden stoplogs and relieve some pressure. Once that has been accomplished, two workers will lift wooden stoplogs from the channels using specialized long-handled hooks on each end of the stoplogs. The stoplogs will be stored in a safe, local area to be determined after the fishway is completed. The number of stoplogs that are removed will be determined and subsequently documented but will be influenced by the streamflow level at the time. It may become necessary to return to the site in subsequent days to add or remove stoplogs as the flow in the

river either rises or falls. In any case, enough stoplogs need to be removed so that there is not an impassable drop in water level at the stoplogs that will inhibit fish passage. Once adequate number of stoplogs are removed, the knife gate may be closed. To close the fishway, the knife gate will be first opened and then the stoplogs replaced into the channels. Finally, the knife gate will be closed.

Specific comments relative to opening and closing:

1. Two persons shall be present to open or close the fishway to ensure worker safety.
2. The de-watered fishway will be walked and inspected prior to opening to ensure all components are secure and in good condition and to remove any trash or debris items that may not flush out of the fishway and the presence of which might inhibit fish passage.
3. When closing the fishway, flows shall be slowly 'ramped' down using incremental placement of stoplogs or incremental closing of the knife gate so that fish currently in the fishway may move downstream and out of the fishway into the river below to avoid stranding. It is recommended that workers work the entire fishway while there is still several inches of flow in the fishway and look for stranded fish or other aquatic life. If such is observed, a decision will be made whether or not to continue with the de-watering, capture and remove the fish from the fishway, or discontinue the de-watering.
4. Opening and closings of the fishway should be documented on an annual fishway log.
5. Manipulation of the stoplogs for attraction water will be made on an as-needed basis and mindful of personal safety. It is hoped that a certain configuration of stoplogs will be determined to be appropriate for providing adequate attraction water at all flows and regular manipulation of those stoplogs will not be necessary.

V. Means of Operation

During operation, workers will visit the fishway a minimum of once a week during the fish passage season and once every three weeks outside the fish passage season. Activities during these visits or 'checks' within the fish passage season shall include:

1. Recording of water levels and temperature.
2. Inspection of gates and stoplogs to ensure proper settings.
3. Manipulation of gates and stoplogs to achieve proper water levels, if necessary.
4. Inspection of the facility for damage or vandalism.
6. Removal of riverborne trash or debris, if necessary or feasible.
7. Observation of the river above and below and inside the fishway, looking for the presence of migrating fishes.
8. Accomplish other data collections or chores, as per special instructions.
9. Contact appropriate persons to report problems.

VI. Maintenance

The facility is designed to have a minimum amount of mechanical parts. Routine annual maintenance will include the greasing of the threaded rod for the knife gate, lubrication of padlocks (as appropriate), and updating of signage. Other maintenance will be performed on an as-needed basis following regular inspections that will be performed during the off-seasons and prior to opening the fishway in the spring. Specific considerations include the removal of riverborne debris and trash, replacement of deteriorated wooden stoplogs, securing of boulders in the rock weirs, and repair of cracked, crumbling or spalling concrete. It is possible that during high flow events, the river may wash some streambed material into the fishway. Fine-grained materials may flush out of the fishway or accumulate in small lateral pockets where they will have no detrimental impact. However, large floods may move large amounts of gravel or cobble into the fishway that will negatively impact fish passage. Workers will have to determine if such materials can be removed by hand or whether a more elaborate effort aided by mechanical means is needed.

VII. Conservation Considerations

1. No fishing will be allowed inside the fishway or in the river within a prescribed distance of the fishway entrance and exit. The CTDEP will determine that distance and will post appropriate warning signs under its authority of Conn. General Statutes Sec. XX –XXX.
2. No person shall capture, block, delay, or in any way harass fish that are migrating in the fishway.
3. No person shall remove fish from the fishway unless for scientific reasons and then must have written authorization from the DEP.
4. The DEP shall monitor the impact of recreationally boating (e.g. canoes and kayaks) on the migration of fish within the fishway. If it is deemed to be disruptive, the DEP shall prohibit the use of the fishway by recreational boaters during the fish passage season and post the area accordingly.

VIII. Responsibilities

1. The Town of Seymour shall own and maintain the facility, focusing on site maintenance chores that include grass cutting, site security and law enforcement, and maintenance of parking facilities.
2. The CTDEP/Inland Fisheries Division will assist the Town, focusing on internal fishway maintenance such as removal of riverborne trash, maintaining wooden stoplogs, securing rock weirs, etc.
3. If the amount of riverborne trash accumulated after a storm event surpasses what can be safely and prudently passed downstream, the Town shall make its waste disposal facilities available for disposal of the material and work cooperatively with the DEP, as appropriate, to remove the material.

4. The CTDEP/ Law Enforcement Division shall enforce fishing and boating regulations and work cooperative with the Town of Seymour on other law enforcement activities at the site.
5. The CTDEP/Inland Fisheries Division will have primary responsibility for the opening and closing of the fishway. If the Town desires the fishway to be opened or closed outside of the planned operation, it shall make a request to the Division.
6. The CTDEP/Inland Fisheries Division will have primary responsibility of making regular fishway checks during the fish passage season, monitoring the fishway for fish passage, and conducting any necessary evaluations or counts.
7. The Town shall have primary responsibility for making regular fishway checks outside of the fish passage season, particularly over the winter.
6. Both the CTDEP and the Town shall conduct public tours and educational visits to the site and shall coordinate and cooperate on such tours, as appropriate.
7. Both the CTDEP and the Town shall maintain established means of communication through the designation of staff assigned to these duties and shall update the contact information, as needed. Each party will notify the other of key events such as openings and closings, tours, and problems such as vandalism or flood-related damages.
8. Parties such as the State of Connecticut/ Department of Transportation that need to use the ford and drive vehicles across the channel to the island shall notify the CTDEP and the Town of such a need and make requests, if necessary, for the fishway to be closed. It is expected that non-emergency visits shall be limited to times outside of the fish passage season.

LETTER OF SUPPORT



ROBERT J. KOSKELOWSKI
First Selectman

Office Of The First Selectman
TOWN OF SEYMOUR

1 First Street
Seymour, Connecticut 06483
Telephone: 203-888-2511
Fax: 203-881-5005

March 24, 2009

Paul Stacey, Director of Planning Standards
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Re: Tingue Dam Bypass Channel Project, Town of Seymour Connecticut.

Dear Mr. Stacey,

The Town of Seymour is in full support of the Tingue Dam Bypass Channel Project. This project is very important for the environment and the survival of the spawning salmon, which are native to this area.

This project has been in the works for several years and it would be wonderful to finally see it finished. The Town of Seymour encourages the federal government to fund this project so that it may be completed.

Thank you for your consideration.

Regards,

A handwritten signature in cursive script, appearing to read "Robert J. Koskelowski".

Robert J. Koskelowski,
First Selectman

cc: George Hicks, DEP

RJK/dac



Housatonic Valley Association

150 Kent Road
P.O. Box 28
Cornwall Bridge, CT 06754
860-672-6678

www.hvatoday.org

1383 Pleasant Street
P.O. Box 251
South Lee, MA 01260
413-394-9796

19 Furnace Bank Road
P.O. Box 315
Wassaic, NY 12592
845-789-1381

April 2, 2009

Office of Habitat Conservation
NOAA Fisheries
1315 East West Highway
Room 14853
Silver Spring, MD 20919

To whom it may concern,

I am writing on behalf of the Housatonic Valley Association (HVA) to express our strong support for the Connecticut Department of Environmental Protection's proposal to construct a fish bypass channel around the Tingue Dam on the Naugatuck River in Seymour, Connecticut.

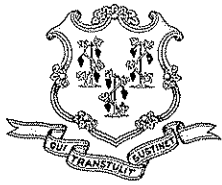
HVA is the only non-profit watershed conservation organization devoted to protecting the entire 2000-square mile Housatonic River Watershed in Massachusetts, Connecticut and New York. The Naugatuck River is the largest tributary to the Housatonic River and drains a basin of just over 300 square miles. Restoring the health of the Naugatuck River remains a top priority for community and state leaders. This project is essential.

Bypassing the Tingue Dam will complement decades-long efforts to restore the Naugatuck River as an environmental, economic and recreational asset to the urbanized and disadvantaged communities within the Naugatuck Valley. Substantial investments have already been made to restore water quality and public access, including eight dam removal and fish passage projects on the Naugatuck River and two of its tributaries. The river is now a cold water fishing destination in Connecticut. This project will restore access to 29 miles of critical habitat for American shad, blueback herring, alewife, American eel and sea-run brown trout, as well as numerous species of predators and freshwater mussels. The project is ready to be launched immediately with your help.

We strongly urge your support. Please don't hesitate to call me for more information.

Sincerely,

Lynn Werner
Executive Director



STATE OF CONNECTICUT
EXECUTIVE CHAMBERS

M. JODI RELL
GOVERNOR

Mr. Peter R. Orszag, Director
Office of Management and Budget
Executive Office of the President
Washington, DC 20503

February 27, 2009

Dear Mr. Orszag:

Pursuant to Section 1607 of the American Recovery and Reinvestment Act of 2009, I hereby certify on behalf of the people of the State of Connecticut that we will request and accept funds provided by the American Recovery and Reinvestment Act of 2009 and use such funds to create jobs and promote economic growth in a manner that is in the best interests of the taxpayers of the State of Connecticut.

Sincerely,

A handwritten signature in cursive script that reads "M. Jodi Rell".

M. Jodi Rell
Governor

Application for Federal Assistance SF-424

Version 02

16. Congressional Districts Of:

* a. Applicant

* b. Program/Project

Attach an additional list of Program/Project Congressional Districts if needed.

17. Proposed Project:

* a. Start Date:

* b. End Date:

18. Estimated Funding (\$):

* a. Federal	<input type="text" value="2,500,000.00"/>
* b. Applicant	<input type="text" value="2,250,000.00"/>
* c. State	<input type="text" value="0.00"/>
* d. Local	<input type="text" value="0.00"/>
* e. Other	<input type="text" value="0.00"/>
* f. Program Income	<input type="text" value="0.00"/>
* g. TOTAL	<input type="text" value="4,750,000.00"/>

* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?

- a. This application was made available to the State under the Executive Order 12372 Process for review on
- b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- c. Program is not covered by E.O. 12372.

* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)

Yes No

21. *By signing this application, I certify (1) to the statements contained in the list of certifications** and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)

** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

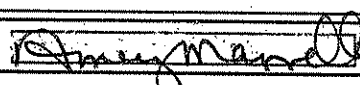
Authorized Representative:

Prefix: * First Name:
Middle Name:
* Last Name:
Suffix:

* Title:

* Telephone Number: Fax Number:

* Email:

* Signature of Authorized Representative:  * Date Signed:

Application for Federal Assistance SF-424

Version 02

*** 1. Type of Submission:**

- Preapplication
- Application
- Changed/Corrected Application

*** 2. Type of Application:**

- New
- Continuation
- Revision

* If Revision, select appropriate letter(s):

* Other (Specify)

*** 3. Date Received:**

Completed by Grants.gov upon submission.

4. Applicant Identifier:

5a. Federal Entity Identifier:

*** 5b. Federal Award Identifier:**

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

*** a. Legal Name:**

State of Connecticut

*** b. Employer/Taxpayer Identification Number (EIN/TIN):**

86-1151463

*** c. Organizational DUNS:**

108352811

d. Address:

*** Street1:**

79 Elm St

Street2:

*** City:**

Hartford

County:

*** State:**

CT: Connecticut

Province:

*** Country:**

USA: UNITED STATES

*** Zip / Postal Code:**

06106

e. Organizational Unit:

Department Name:

Environmental Protection

Division Name:

Planning and Standards

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:

Mr.

*** First Name:**

Paul

Middle Name:

*** Last Name:**

Stacey

Suffix:

Title:

Director

Organizational Affiliation:

*** Telephone Number:**

860-424-3728

Fax Number:

*** Email:**

paul.stacey@ct.gov

Application for Federal Assistance SF-424

Version 02

9. Type of Applicant 1: Select Applicant Type:

A: State Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

National Oceanic and Atmospheric Administration

11. Catalog of Federal Domestic Assistance Number:

11.463

CFDA Title:

Habitat Conservation

*** 12. Funding Opportunity Number:**

NOAA-NMFS-HCPO-2009-2001709

* Title:

Coastal and Marine Habitat Restoration Project Grants - Recovery Act

13. Competition Identification Number:

2141924

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

*** 15. Descriptive Title of Applicant's Project:**

Recovery Act - Tigue Dam Bypass Channel, Naugatuck River, Connecticut

Attach supporting documents as specified in agency instructions.

[Add Attachments](#) [Delete Attachments](#) [View Attachments](#)

Applicants should also review the instructions for certification included in the regulations before completing this form. Signature on this form provides for compliance with certification requirements under 15 CFR Part 28, 'New Restrictions on Lobbying.' The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Commerce determines to award the covered transaction, grant, or cooperative agreement.

LOBBYING

Statement for Loan Guarantees and Loan Insurance

As required by Section 1352, Title 31 of the U.S. Code, and implemented at 15 CFR Part 28, for persons entering into a grant, cooperative agreement or contract over \$100,000 or a loan or loan guarantee over \$150,000 as defined at 15 CFR Part 28, Sections 28.105 and 28.110, the applicant certifies that to the best of his or her knowledge and belief, that:

The undersigned states, to the best of his or her knowledge and belief, that:

In any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, 'Disclosure Form to Report Lobbying,' in accordance with its instructions.

Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure occurring on or before October 23, 1996, and of not less than \$11,000 and not more than \$110,000 for each such failure occurring after October 23, 1996.

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, 'Disclosure Form to Report Lobbying,' in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure occurring on or before October 23, 1996, and of not less than \$11,000 and not more than \$110,000 for each such failure occurring after October 23, 1996.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above applicable certification.

* NAME OF APPLICANT

State of Connecticut

* AWARD NUMBER

* PROJECT NAME

Tingue Dam Bypass Channel

Prefix:

Ms.

* First Name:

Amey

Middle Name:

* Last Name:

Marrella

Suffix:

* Title: Acting Commissioner

* SIGNATURE:

Completed by Grants.gov upon submission.

* DATE:

Completed by Grants.gov upon submission.

ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.
10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).
14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

<p>* SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL</p> <p>Completed on submission to Grants.gov</p>	<p>* TITLE</p> <p>Acting Commissioner</p>
<p>* APPLICANT ORGANIZATION</p> <p>State of Connecticut</p>	<p>* DATE SUBMITTED</p> <p>Completed on submission to Grants.gov</p>

BUDGET INFORMATION - Non-Construction Programs

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Habitat Conservation	11.463	\$	\$	\$ 2,500,000.00	\$ 2,250,000.00	\$ 4,750,000.00
2.						
3.						
4.						
5. Totals		\$	\$	\$ 2,500,000.00	\$ 2,250,000.00	\$ 4,750,000.00

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
	Habitat Conservation				
a. Personnel	\$	\$	\$	\$	\$
b. Fringe Benefits					
c. Travel					
d. Equipment					
e. Supplies					
f. Contractual	2,500,000.00		2,250,000.00		4,750,000.00
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a-6h)	2,500,000.00		2,250,000.00		4,750,000.00
j. Indirect Charges					
k. TOTALS (sum of 6i and 6j)	\$ 2,500,000.00	\$	\$ 2,250,000.00	\$	\$ 4,750,000.00
7. Program Income	\$	\$	\$	\$	\$

Authorized for Local Reproduction

SECTION C - NON-FEDERAL RESOURCES

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8. Habitat Conservation	\$ 2,250,000.00	\$	\$	\$ 2,250,000.00
9.				
10.				
11.				
12. TOTAL (sum of lines 8-11)	\$ 2,250,000.00	\$	\$	\$ 2,250,000.00

SECTION D - FORECASTED CASH NEEDS

Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ 2,500,000.00	\$ 625,000.00	\$ 625,000.00	\$ 625,000.00
14. Non-Federal	\$ 2,250,000.00	\$ 562,500.00	\$ 562,500.00	\$ 562,500.00
15. TOTAL (sum of lines 13 and 14)	\$ 4,750,000.00	\$ 1,187,500.00	\$ 1,187,500.00	\$ 1,187,500.00

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT

(a) Grant Program	FUTURE FUNDING PERIODS (YEARS)			
	(b) First	(c) Second	(d) Third	(e) Fourth
16. Habitat Conservation	\$	\$	\$	\$
17.				
18.				
19.				
20. TOTAL (sum of lines 16 - 19)	\$	\$	\$	\$

SECTION F - OTHER BUDGET INFORMATION

21. Direct Charges:		22. Indirect Charges:	
23. Remarks:			

Other Attachment File(s)

* Mandatory Other Attachment Filename:

To add more "Other Attachment" attachments, please use the attachment buttons below.